

TIER 1 DRAFT ENVIRONMENTAL IMPACT STATEMENT

Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio PID 22970









U.S. Department of Transportation Federal Highway Administration Ohio Department of Transportation and Hamilton County Transportation Improvement District



U.S. Department of Transportation Federal Highway Administration



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Submitted Pursuant to 42 U.S.C. 4332 (2) (c) by:

U.S. Department of Transportation Federal Highway Administration, Ohio Department of Transportation, and Hamilton County Transportation Improvement District

Cooperating Agencies

Federal Transit Authority, U.S. Army Corps of Engineers, and National Park Service

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The Eastern Corridor project is being conducted to identify multi-modal solutions for improving long-term travel mobility and efficiency between the City of Cincinnati and its eastern suburbs in Hamilton and Clermont Counties, Ohio. The detailed Tier 1 study area covers about 14 square miles in the eastern sector of the Cincinnati metropolitan area, from downtown Cincinnati east to the I-275 outerbelt in Clermont County. The project is being conducted in a two-tiered NEPA process. The Tier-1 work, which is the subject of this Tier 1 Draft Environmental Impact Statement (DEIS), identifies feasible alternatives for different multi-modal components, including ranges of preliminary impacts and costs, to be carried through into Tier 2 for more detailed study. The Tier 2 work will involve further refinement of these alternatives, including more detailed engineering and environmental analyses, comparative impact evaluation, identification of preferred alternatives for different parts of the multi-modal plan, and final NEPA documentation.

The purpose of the project is to implement a multi-modal transportation program consistent with the adopted long range plan for the region, addressing priority needs and supporting transportation goals and concept plans established during the Eastern Corridor Major Investment Study (April 2000) and subsequent metropolitan area planning actions. The need for the action stems from growing travel demand on an inadequate existing transportation network (including both highway and transit infrastructure) in the Eastern Corridor. The Eastern Corridor is characterized by insufficient capacity, safety issues, limited transportation options, and inadequate linkage to the region's key transportation corridors for efficient movement of people, goods and services.

The Tier 1 work has identified feasible alternatives in different mode categories that 1) meet the long-range transportation needs of the region and 2) can be built and operated with reasonable impacts and costs. These Tier 1 alternatives are general location and operation corridors that are feasible and that will be used during Tier 2 for more detailed alternatives refinement. Feasible alternatives have been identified in Tier 1 to effectively execute the multi-modal components of the regional long range transportation plan for the Eastern Corridor, including: various transportation system management (TSM) actions (including new bike and pedestrian ways following existing transportation routes or on new alignment), improved bus transit (expanded bus routes, new community circulators, feeder routes to compliment rail transit, and new bus hubs), new rail transit extending from downtown Cincinnati to Milford, and new highway capacity from Red Bank Road at I-71 to SR 32/I-275 in the Eastgate area of Clermont County.

The preliminary impact evaluation presented in this Tier 1 DEIS is based on conservative estimates of corridor widths and footprint areas. Primary impact concerns identified in this Tier 1 document include potential residential and business relocations, crossing of the Little Miami River (a state-administered component of the national wild and scenic river system), possible encroachment on parkland, and possible impacts to several National Register Districts and other cultural resources. The Tier 1 DEIS contains a preliminary list of mitigation measures and environmental commitments for these and other impact categories to be carried through into Tier 2 for further development and finalization.



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

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ACRONYMS

TERMS

ADT APD ARTIMIS AWS BMP BVAS CAGIS CAUV CBD CERCLA CFR CSO CTER CVG DBH DMU EB ECLUVP EIS EWH FEIS GIS HERS HOV ISTEA IWS LMR LOS LQG LRT LRW LUVP L&WCF MIS MMP MMPLUVP MSL MSL MWWH NBD NEPA	Average Daily Traffic Anderson Park District Advanced Regional Traffic Interactive Management and Information System Agricultural Water Supplies Best Management Practices Buried Valley Aquifer System Cincinnati Area Geographic Information System Current Agricultural Use Value Central Business District Comprehensive Environmental Recovery Compensation and Liability Act Code of Federal Regulations Combined Sewer Overflow Cincinnati Terminal Railway Cincinnati Terminal Railway Cincinnati Terminal Railway Cincinnati-Northern Kentucky International Airport Diameter at Breast Height Diesel Multiple Unit Expanded Bus Eastern Corridor Land Use Vision Plan Environmental Impact Statement Exceptional Warmwater Habitats Final Environmental Impact Statement Geographic Information System High Occupancy Lanes Intermodal Surface Transportation Efficiency Act Industrial Water Supplies Little Miami River Level of Service Large Quantity Generators Light Rail Transit Limited Resource Waters Land Use Vision Plan And Water Conservation Fund Act Major Investment Study Multi-Modal Plan Multi-Modal Plan Multi-Modal Plan with Land Use Vision Plan Ohio Master List Mean Sea Level Modified Warmwater Habitat Neighborhood Business Districts National Environmental Policy Act
MSL MWWH	Modified Warmwater Habitat
NEPA NPDES NPL	National Environmental Policy Act National Pollution Discharge Elimination System National Priority List
NOI NR NS	Notice of Intent National Register Norfolk Southern



NWI	National Wetland Inventory
OAI	Ohio Archaeological Inventory
OHI	Ohio Historic Inventory
OHW	Ordinary High Water
OHWM	Ordinary High Water Mark
O&M	Operation and Maintenance
ORAM	Ohio Rapid Assessment Method
ORC	Ohio Revised Code
PCR	Primary Contact Recreation
PDEIS	Preliminary Draft Environmental Impact Statement
PE/EIS	Preliminary Engineering/Environmental Impact Statement
PWS	Public Water Supplies
QHEI	Qualitative Habitat Evaluation Index
RB	Regional Baseline
RCRA	Resource Conservation and Recovery Act
REMI	Regional Economic Model Incorporated
RM	River Mile
ROD	Record of Decision
RT	Rail Transit
RTDM	Regional Travel Demand Model
SCR	Secondary Contact Recreation
SOV	Single Occupancy Vehicle
SP	Standard Procedures
SR	State Route OR Side Road (referring to highway alternatives)
SRW	State Resource Waters
STIP	State Transportation Improvement Plan
SWF	Solid Waste Facilities
SWPP	Stormwater Pollution Prevention Plan
TDM	Transportation Demand Management
TIP	Transportation Improvement Plan
TNM	Traffic Noise Model
TSD	Transportation/Storage/Disposal Facilities
TSM	Transportation System Management
UPARR	Urban Park and Recreation Recovery Program
VHD	Vehicle Hours of Delay
VHT	Vehicle Hours of Travel
VMT	Vehicle Miles of Travel
	Vehicle Operating Cost
	Wellhead Protection Areas
WWH	Warmwater Habitat

AGENCIES

CDC CEQ	Centers for Disease Control and Prevention Council on Environmental Quality
DOI	Department of the Interior
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Authority
HCTID	Hamilton County Transportation Improvement District



1&O	Indiana and Ohio Railway System
MSD	Metropolitan Sewer District
NPS	National Park Service
NRCS	Natural Resource Conservation Service
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OEPA	Ohio Environmental Protection Agency
OES	Office of Environmental Services (ODOT)
OHPO	Ohio Historic Preservation Office
OKI	Ohio, Kentucky and Indiana Regional Council of Governments
SORTA	Southwest Ohio Regional Transit Authority
TANK	Transit Authority of Kentucky
TRAC	Transportation Review Advisory Council
UC	University of Cincinnati
USCG	United States Coast Guard
USCOE	United States Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
00.110	



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

SUMMARY



SUMMARY

PROJECT DESCRIPTION AND APPROACH

The Eastern Corridor project is being conducted to identify workable strategies for improving long-term travel mobility between the City of Cincinnati and its eastern suburbs. The project is overseen by a partnership of state, county and city governments and transportation agencies, and is led locally by the Hamilton County Transportation Improvement District (HCTID). The Eastern Corridor study area covers approximately 14 square miles and extends from the Cincinnati Central Business District and riverfront redevelopment area in Hamilton County, east to the I-275 outerbelt corridor in Clermont County, near the communities of Milford to the north, Batavia to the east, and Amelia to the south.

An Eastern Corridor Major Investment Study (MIS) completed in April 2000 recommended a comprehensive multi-modal strategy for addressing current and projected transportation problems in the area. The MIS process was a collaborative effort involving input from key federal, state and local stakeholders who evaluated a variety of alternatives and identified alternatives determined best able to meet regional transportation needs. The multi-modal components of the MIS Recommended Plan included: transportation system management (TSM) improvements, new and expanded bus transit service, new rail transit service and highway capacity improvements.

In addition, an Eastern Corridor Land Use Vision Plan (ECLUVP), completed in May 2002, evaluated economic development, green pace preservation and quality-of-life issues identified from existing community plans and information obtained from six geographic focus area groups within the Eastern Corridor. The adopted ECLUVP consists of a future land use map, and identifies key land use issues considered high priority for the Eastern Corridor, and key local land use issues considered priority for each of the six focus areas.

The MIS Recommended Plan and the land use vision process identified the various transportation modes and local land use issues that were used in the Eastern Corridor Tier 1 work program. Overall, the main objective of the current phase of work is to further develop and assess the MIS recommended multi-modal strategy and, in compliance with NEPA regulations, and support of land use priorities identified during the land use vision process, identify a set of feasible multi-modal alternatives for further evaluation.

The Eastern Corridor work is being conducted in two parts, corresponding to a two-tiered NEPA process. Overall, Tier 1 work, which is the subject of this draft environmental document, consists of the preparation of a Tier 1 Environmental Impact Statement (EIS) and Record of Decision (ROD) which presents information on transportation need in the area, key environmental resources, the development and evaluation of feasible alternatives, a preliminary assessment of expected impacts, and the identification of a recommended transportation plan (set of feasible alternatives) to be carried through into more detailed study during Tier 2. The goal of Tier 1 work is not an either/or determination among modes or alternatives within a mode, but rather an effort to identify how the various modal investments may be best implemented in consideration of engineering, environmental, financial, public input, land use and community development factors.



Tier 2 work, to be conducted after the completion of the Tier 1 EIS and ROD, will involve more detailed engineering and environmental analyses and final NEPA documentation for the feasible alternatives identified in Tier 1. In general, Tier 2 NEPA documents will refer to the purpose and need and other background information presented in the Tier 1 EIS, but will incorporate more detailed alignment development, environmental field assessment, impact evaluation, preferred alternative selection, and mitigation plan development on a project-by-project basis in order to complete the NEPA process.

PURPOSE AND NEED

The purpose of the Eastern Corridor project is to implement a multi-modal transportation program consistent with the adopted long range plan for the region, addressing priority needs and furthering the transportation goals established in the Eastern Corridor MIS. Overall, the proposed action will be developed and designed to: a) fit with identified future land use in the area, b) support and provide sustenance to the regional economy, and c) be consistent with regional environmental goals.

The need for the proposed project revolves around: a) the existing inadequate transportation network and infrastructure in the Eastern Corridor, characterized by insufficient capacity, safety issues, and limited availability of alternative transportation options to effectively serve current and future travel demand, b) inadequate linkage and mobility to the region-s key transportation corridors to developing social and economic areas, and c) expected future economic expansion and population growth in the area. These transportation needs are further discussed in Chapter 2 of this DEIS.

ALTERNATIVES UNDER CONSIDERATION IN TIER 1

Feasible alternatives described in this DEIS are not specific alignment locations, but alternative corridors that will be further developed during Tier 2 of the Eastern Corridor study. Sufficient preliminary engineering work was conducted in Tier 1 to understand the general spatial requirements of the various alternatives, but alignment location, configuration and access details have not been established. The Tier 1 feasible alternatives are consistent with adopted long-range plans for the region, meet logical connectivity and functional need requirements identified in those plans, and are conservatively configured so to geographically encompass a reasonable and feasible range of possible detailed terminal treatments, such as transit station layouts, ramp geometrics, and access roads. Tier 2 work to be conducted for the Eastern Corridor will establish final footprint and logical termini for all of the alternatives within the multi-modal plan. Preferred alternative selection and evaluation will also occur during Tier 2.

This Tier 1 document describes feasible alternatives in two ways: by mode and by geographic area in the Eastern Corridor. Modal alternatives are described first (Chapter 3.4.1), including the various TSM, bus transit, rail transit, highway, and bikeway alternatives under consideration for the Eastern Corridor as a whole. The Eastern Corridor, however, is not a single-mode project, but a multi-modal transportation solution in which the various modes are being planned and developed together for eventual implementation. The Eastern Corridor land use vision work identified land use priorities for six geographic regions within the Eastern Corridor. This land use plan, along with the Eastern Corridor MIS, provided the framework for



Tier 1 alternatives development. As such, feasible modal alternatives developed for Tier 1 are grouped and described together in a multi-modal framework by six geographic areas (feasible multi-modal alternatives by area; Chapter 3.4.2), corresponding to the focus areas used in the land use vision process. This grouping takes into account logical termini and operational considerations, such as how the different components of the multi-modal transportation plan within an area work together to address a particular transportation need or local and/or regional capacity issue, and how various projects may be broken out for Tier 2 work.

Tier 1 feasible alternatives for the Eastern Corridor are described in detail in Chapter 3.4 of this DEIS and summarized below.

Feasible Alternatives by Mode

The following paragraphs describe feasible alternatives, in various improvement categories or mode groups, that are recommended to be carried forward into the next phase of evaluation (Tier 2 environmental document or equivalent).

Transportation System Management (TSM):

• 55 TSM core projects, consisting of a combination of operational strategies, existing roadway corridor improvements, as well as use of transportation demand management (TDM) strategies; includes: 15 intersection improvements, 34 roadway corridor improvements, 2 interchange improvements, 2 more frequent service bus routes, and 2 park-and-ride facilities.

TSM core projects for the Eastern Corridor were selected based on anticipated improvement to the multi-modal transportation services within the Eastern Corridor, ability to meet key transportation needs such as safety and congestion, support of the Eastern Corridor land use vision plan, and other issues such as funding availability and project readiness. The core TSM list will be updated in Tier 2 as the project financial strategy is finalized and priorities for TSM are refined. TSM actions that are not of independent utility and that have minor localized impacts will be included in the Tier 2 environmental evaluation for the Eastern Corridor. Other TSM actions will continue forward in project development under traditional project-level environmental evaluation processes.

Expanded Bus:

The expanded bus plan for the Eastern Corridor contains three main components, including:

- primary (expanded bus) routes for serving identified primary and secondary linkages in the Eastern Corridor (Chapter 3, Table 3.5),
- new community circulator and feeder routes to compliment rail transit (Chapter 3, Table 3.6), and
- twelve hubs, consisting of six bus-only hubs and six bus/rail transit hubs (Chapter 3, Table 3.7)

Most bus transit actions are of independent utility and minor localized impacts, and therefore will not be included in the Tier 2 environmental evaluation. Most bus actions will continue forward in project development under traditional project-level environmental evaluation processes. Hub development and related actions, including local circulator bus and related community issues, are part of the anticipated Tier 2 analysis framework.



Rail Transit:

Two general rail transit corridors, each including minor route alternatives and alignment variations as described and illustrated in Chapter 3.4.1, are recommended for action in the Eastern Corridor, including:

- Primary corridor and near-term action: The Oasis Line, extending from downtown Cincinnati to Milford (along a combination of the existing Oasis rail corridor, new alignment co-located with the highway corridor, and on or closely paralleling existing Norfolk-Southern rail right-of-way), and using Diesel Multiple Unit (DMU) technology; total length about 17.1 miles. The Oasis Line includes approximately ten rail stations, four of which are combined bus/rail transit hubs. Several alternative location options for portions of this rail line are under consideration in the downtown Cincinnati (riverfront) area, in the Lunken Airport vicinity, in the co-located right-of-way segment, and along the N-S right-of-way. This corridor and its locational alternatives is a stand-alone action that meets purpose and need independent of other major transit investments, and is recommended for specific evaluation in Tier 2.
- Secondary corridor and long-term action: The Wasson Line, extending from the Xavier/Evanston vicinity to the Eastgate area in Clermont County (along a combination of the existing Norfolk-Southern Wasson rail corridor and new alignment co-located with the highway corridor), and using Electrically Powered Light Rail (LRT) technology consistent with other parts of the I-71 LRT corridor (see next paragraph); total length about 11.7 miles. The Wasson Line includes approximately six rail stations, four of which are combined bus/rail transit hubs. Minor alternative location or configuration options for portions of this rail line are under consideration in the constricted areas along parts of the N-S Wasson segment and in the co-located right-of-way segment.

As noted in Chapter 3.4.1, the Wasson Line is scheduled as an extension of the planned I-71 Light Rail Transit (LRT) corridor, and is dependent upon implementation of the I-71 LRT for function and system linkage consistent with project purpose and need. A separate NEPA action will be required for the I-71 LRT project and, although a preliminary DEIS has been prepared, there currently is no plan to further project development due to funding uncertainties. As such, the current recommendation in this action for the Eastern Corridor is that the Wasson alternative, as recommended in the MIS, be part of the long-term framework with no immediate action in project development other than preservation of existing rail right-of-way for future transportation purposes.

In the reporting of data and potential impacts in this Tier 1 document, values for both the Oasis and Wasson corridor alternatives have been included as a conservative measure. The Tier 2 document will refine these values for the appropriate actions.

New Highway Capacity:

Highway alternatives for the Eastern Corridor were developed for four geographic segments of the project study area (Chapter 3.4.1), as summarized below. Total new highway length for all segments combined is about 12.6 miles. In all cases, the general configurations and locations described do not infer final information; further adjustments and refinements will occur in Tier 2 to address impact minimization or other project development factors.

<u>Segment I</u> (Red Bank Corridor, I-71 to US 50) - Roadway improvements in Segment I involve consolidation and management of access points along existing Red Bank Road and Red Bank Expressway in order to establish a controlled access arterial roadway of improved capacity and safety from I-71 to US 50. This segment has a total length of about 2.5 miles, and would expand or closely follow the existing roadway alignment. The feasible alternatives framework for Segment I



consists of three main components: basic highway mainline, interchange options at US 50, and local access roadway network, as summarized below:

- Two basic highway mainline alternatives incorporating closely spaced location options, all proximate to or on existing roadway right-of-way (Alternatives A and A2),
- Three alternative configurations for a new Red Bank Road/US 50 interchange (Alternatives B1, B2 and B3), and
- Three side road/intersection improvement options for consolidating traffic access points to Red Bank Road and improving local access (Alternatives SR1, SR2 and SR3).
- <u>Segment II</u> (US 50/River Crossing to Newtown Road) Roadway improvements in Segment II involve consolidation and management of access points for establishing relocated SR 32 as a controlled access arterial roadway west of I-275, with a clear span crossing (a joint roadway/rail transit crossing) of the Little Miami River; total length is about 2.6 miles. Alternatives recommended for further evaluation in Tier 2 include:
 - Four basic multi-lane mainline location alternatives for approaches to and crossing of (by clear-span) the Little Miami River (Alternatives C, D, E and F), and
 - Six basic multi-lane mainline alternatives for traversing the Little Miami River floodplain east of the river main channel and Clear Creek (Alternatives G, H, I, J, K and L).
 - Segment II alternatives include a parallel rail transit corridor, co-located in common right-ofway.
- <u>Segment III</u> (Newtown Road to Mt. Carmel-Tobasco Road) Similar to Segment II, roadway improvements in Segment III involve consolidation and management of access points for establishing relocated SR 32 as a controlled access arterial roadway west of I-275; total length is about 3.4 miles. Alternatives recommended for further evaluation in Tier 2 include:
 - Four basic multi-lane mainline alternatives through Newtown and the developed Ancor area to the east of Newtown (Alternatives M, N, O and P), and
 - Four basic multi-lane mainline alternatives in the vicinity of the Mt. Carmel hillside (Alternatives Q, R, S and T).
 - Segment III alternatives may include development or preservation of a parallel rail transit corridor (impacts and costs reported in this document include the co-located transit corridor in this segment).
- <u>Segment IV</u> (Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road) Roadway improvements in Segment IV involve consolidation and management of access points for establishing improved SR 32 as a limited access arterial roadway east of I-275; total length is about 4.1 miles. The range of alternatives recommended for further evaluation in Tier 2 include:
 - Alternative I(IV) a configuration providing full directional flyover ramps connecting mainline I-275 and mainline SR 32, replacing the existing cloverleaf interchange,
 - Alternative P(IV) a configuration consisting of a relocated I-275/SR 32 interchange, and
 - Alternative Q-3(IV) a configuration using collector-distributors along both I-275 and SR 32.



There are minor functional variations on these interchange configuration groups that may also be considered in Tier 2, as well as possible phasing of portions of the alternatives over time, but these variations are not outside of the general footprint established or range of impacts reported.

Bikeway:

The bikeway plan for the Eastern Corridor includes dedicated (planned) bikeways/trails and alternative bike links under consideration as described in the OKI Regional Bike Plan and incorporation of findings from the Eastern Corridor land use vision plan. Key bikeway connections include the following:

- Planned bikeway along US 50/Wooster Pike (following existing roadway and rail) and in Otto Armleder Memorial Park connecting an existing trail in Milford to existing bike trails in the Lunken Airport vicinity.
- Planned bikeway between Columbia Avenue and Eastern Avenue (following existing roadway and rail) connecting downtown Cincinnati to existing trails in the Lunken Airport vicinity.
- Planned bikeways along portions of Round Bottom Road, Newtown Road, Wasson Road, Murrey Avenue and Batavia Road (following existing roadways and/or rail) connecting area parks and greenspaces, and ultimately linking to existing trails in Milford and the Lunken Airport vicinity.
- Planned bikeway along Kellogg Road extending south from existing trails in the Lunken Airport vicinity (Ohio River Bike Trails).

Feasible Multi-Modal Alternatives by Geographic Area

Feasible multi-modal alternatives by geographic area in the Eastern Corridor, which consist of combinations of the modal alternatives described above, are listed in Table S.1 below and further described in Chapter 3.4.2 of this DEIS.

Eastern Corridor Area	General Location	Tier 1 Multi-Modal Alternatives
Area #1: Wasson/Red Bank	I-71/Xavier south to Red Bank Road/US	TSM improvements on the existing roadway network;
Road	50	New rail transit (Wasson Line) along existing rail corridor from planned I-71 Light Rail Transit at Xavier/Evanston to
	(Portions of the Wasson, Red Bank	US 50, with rail stations at Rookwood and Paxton;
	and River Plains LUVP Focus Areas)	Expanded bus service, new bus circulator routes and new bus hubs at Oakley and Madisonville;
		New bike routes;
		Highway capacity improvements along Red Bank Road (controlled access), including new interchange at Red Bank Road/US 50, improved intersections or new interchanges at Madison Road and Erie Avenue, and local side road improvements;
		Bus/rail transit hubs at Xavier/Evanston and Red Bank/Fairfax.

Table S.1. Summ	ary of Multi-Modal Alternatives by Geographic Area
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Eastern Corridor Area	General Location	Tier 1 Multi-Modal Alternatives
Area #2: Ohio 32/Wooster West	Red Bank/US 50 east through Newtown to Ancor/Mount Carmel Hill	TSM improvements on the existing roadway network;
		Relocated SR 32 on new alignment (controlled access arterial) with parallel rail transit (Oasis and Wasson lines) and bike/pedestrian paths, and a shared crossing of the
	(Portions of the Ohio 32, River Plains and Wooster LUVP Focus Areas)	Little Miami River;
		Expanded bus routes, new bus circulator routes, a shared bus/rail transit hub in the Newtown area, and a rail station in the Ancor vicinity.
Area #3: Wooster East	Ancor/Mt. Carmel Hill north to Milford	Primarily TSM and transit-based;
	(Portions of the Wooster and River Plains LUVP Focus Areas)	Key improvements include more frequent bus service, a new bike/pedestrian facility, roadway corridor improvements, new bus circulator routes, new rail transit (Oasis Line) and a bus/rail transit hub near the I-275/US 50 interchange;
	,	No new roadway alternatives (other than TSM improvements).
Area #4: Eastern Avenue/Lunken	Downtown (riverfront area) east along Ohio	Primarily transit-based and TSM;
	River to Lunken Airport/US 50	Key improvements include more frequent bus service, TSM intersection improvements, Beechmont/Wilmer/Wooster and Beechmont/Columbia Parkway interchange improvements,
	(Portions of the Eastern Avenue/Lunken and River Plains LUVP Focus Areas)	new bikeways (following Ohio River along Columbia Parkway), roadway corridor improvements, new rail transit (Oasis Line) following existing rail alignment, expanded bus and new bus circulator routes, and a bus/rail transit hub at the existing Riverfront Transit Center;
		No new roadway alternatives (other than TSM improvements) are proposed for this area.
Area #5: Eastern	Lunken Airport/US 50 east along	Primarily transit-based (bus) and TSM;
Avenue/Lunken and Ohio 32/Eastgate	Beechmont Avenue to I-275 at Eastgate	Key improvements include more frequent bus service on SR 125 (Beechmont Avenue), various intersection
	(Portions of the Eastern Avenue/Lunken, Ohio 32 and River Plains LUVP Focus Areas)	improvements and roadway corridor improvements, a bus hub at Anderson/Beechmont (at former Beechmont Mall), new bikeway from Beechmont Road to US 52 (along Elstun Road), and a new park and ride at the SR 125/I-275 interchange:
		No new roadway alternatives (other than TSM improvements) or rail transit are proposed for this area.
Area #6: Ohio 32/Eastgate	Ancor/Mt. Carmel Hill east along SR 32 to Eastgate/Batavia	Primary focus is on new capacity and access improvements on SR 32 (limited access east of I-275) and I-275 with a major upgrade to the existing I-275/SR 32 interchange;
	(Portion of the Ohio 32 Focus Area)	New rail transit to the Eastgate area (Wasson Line);
		Expanded bus, new bus circulator routes, a new bus/rail transit hub at Eastgate;
		TSM improvements on the existing local roadway network; Three options under consideration for improved SR 32/I-275 capacity and access, including 1) configuration using full

Table S.1. Summary of Multi-Modal Alternatives by Geographic Area



Eastern Corridor Area	General Location	Tier 1 Multi-Modal Alternatives	
		directional flyover ramps at the I-275/SR 32 interchange, 2) configuration consisting of a relocated I-275/SR 32 interchange, and 3) configuration using collector-distributors along both I-275 and SR 32.	

Table S.1. Summary of Multi-Modal Alternatives by Geographic Area

PRELIMINARY IMPACT ASSESSMENT

Preliminary quantitative impacts to key environmental features were determined by overlaying feasible alternative corridors onto GIS mapping of environmental resources.

Since feasible alternatives developed in Tier 1 are not specific alignment locations, but alternative corridors that will be further developed in Tier 2, impacts presented in this DEIS are based on conservative estimates of corridor widths. Corridor widths used in assessing impacts vary by mode and location, and are specified in Chapter 5. Overall, the preliminary impact assessment conducted for Tier 1 presents an overview of the range of likely impacts expected by the different modes and multi-modal alternatives being considered for the Eastern Corridor. Actual impacts will be different (may be higher or, more likely, lower), and will be further assessed in Tier 2 on a project-by-project basis when alignment location and configuration is more specifically determined and detailed design is developed.

Preliminary impact information is presented in two ways: by mode and by geographic area in the Eastern Corridor - where geographic areas generally correspond to focus areas used in the land use vision work. Preliminary impacts for modal alternatives are presented in Chapter 5.1, including the range of impacts expected by TSM, bus transit, rail transit, highway, and bikeway alternatives under consideration for the Eastern Corridor as a whole. However, the Eastern Corridor is not single-mode plan, but a multi-modal transportation solution in which the various modes are being planned and developed together for eventual implementation. Chapter 5.2, therefore, describes in general terms, what impacts can be expected by all of the modes under consideration in a geographic area, and highlights key environmental concerns specific to that area.

Preliminary impact assessment for the Eastern Corridor is presented in detail in Chapter 5 of this DEIS and summarized below.

Preliminary Impact Assessment by Mode

Preliminary ranges of impacts for feasible modal alternatives under consideration in the Eastern Corridor - TSM, bus transit, rail transit, highway and bikeway - are presented in a series of impact tables included in Chapter 5.1 (Tables 5.2 through 5.9).

Preliminary Impact Assessment for Feasible Multi-Modal Alternatives by Area

A summary of environmental features and resources expected to be affected within each of the geographic areas in the Eastern Corridor is presented in Table S.2:



Concerns by Area				
Eastern Corridor Area	Key Concerns	Other Potentially Impacted Features		
Area #1: Wasson/Red Bank Road	Potential residential and business displacements	USGS streams; floodplains; sole source aquifer; wetlands; parks; federal listed species; hazardous materials concern sites; residential, commercial, industrial land uses; National Register District and other cultural resources; highway/rail noise		
Area #2: Ohio 32/Wooster West	Little Miami River; public parks (several); National Register Districts (Hahn, Perin and Mariemont); archaeological sensitivity; potential residential and commercial displacements	Wetlands; floodplain; sole source aquifer; federal and state listed species; hazardous materials concern sites; residential, commercial, industrial, agricultural land uses; National Register individual properties; other cultural resources; highway/rail noise; visually sensitive resource		
Area #3: Wooster East	None (multi-modal alternatives primarily follow existing transportation corridors)	USGS streams; floodplain; sole source aquifer; Public Water Supply (Township Fields and Tavern); federal listed species; hazardous materials concern sites; industrial land use; other cultural resources; rail/highway noise; visually sensitive resources		
Area #4: Eastern Avenue/Lunken	None (multi-modal alternatives primarily follow existing transportation corridors)	USGS streams; floodplains; sole source aquifer; parks; federal listed species; hazardous materials concern sites; National Register individual property; other cultural resources; rail noise		
Area #5: Eastern Avenue/Lunken and Ohio 32	None (multi-modal alternatives primarily follow existing transportation corridors)	Floodplain; sole source aquifer; parks; federal listed species; commercial land use; other cultural resources; potential commercial and industrial displacements		
Area #6: Ohio 32/Eastgate	Potential residential, commercial and industrial displacements	USGS streams; federal listed species; hazardous materials concern sites; residential, commercial land uses; other cultural resources; highway/rail noise		

Table S.2. Summary of Primary and Secondary Environmental Concerns by Area

PUBLIC INVOLVEMENT

An extensive public involvement plan was developed and is being implemented for the Eastern Corridor, using as a framework, and building upon, public involvement efforts utilized during the Major Investment Study and Eastern Corridor land use vision phases of the project. Overall, the public involvement plan consists of eighteen components for informing/educating the public and obtaining feedback on the project's development (Chapter 6). Key components have included: a project involvement information center, an Eastern Corridor website, special interest/community workshops, speakers bureaus, public meetings, and stakeholder/advisory committee meetings (also open to the public).



Three rounds of public meetings have been conducted in Tier 1. A wide range of valuable input was gathered from these meetings and other public involvement activities, and project development to date has reflected this input. A Public Hearing will be held for the project following approval of the Draft Environmental Impact Statement; this hearing is anticipated to be held in the fall of 2004.

Section 106 public involvement, including coordination with historical societies and native American tribes, has also been conducted, as described in Chapter 6.

AGENCY COORDINATION

Four resource agency coordination meetings have been held since the beginning of the Eastern Corridor Tier 1 work phase to update and obtain input from various agencies involved in the project on issues, processes and expectations; dates included: January 17, 2002; April 18, 2002; October 17, 2002 and October 14, 2003. Represented at these sessions have been individuals from the Ohio Department of Transportation (ODOT), Federal Highway Administration (FHWA), Federal Transit Authority (FTA), Ohio Department of Natural Resources (ODNR), Hamilton County Transportation Improvement District (HCTID), the City of Cincinnati, the U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service (USFWS), the U.S. Department of the Interior National Park Service (NPS), the U.S. Army Corps of Engineers (USCOE), Ohio Environmental Protection Agency (OEPA), the Ohio-Kentucky-Indiana Regional Council of Governments (OKI), SORTA/Metro, Clermont County and the project consultant team.

In addition, two project coordination meetings have been held between FHWA, FTA, USEPA and ODOT. The tiered NEPA approach to the project was confirmed at these meetings, and an agreement was made that FHWA would serve as the lead agency in the NEPA process, with cooperating agencies to include FTA, USCOE and the National Park Service (NPS).

The FHWA published a Notice of Intent (NOI) in the Federal Register on May 21, 2002 announcing that a Tiered Environmental Impact Statement would be prepared for the proposed Eastern Corridor multi-modal transportation project.

Agency comments received to date regarding the Eastern Corridor Tier 1 work phase are included in Appendix C and summarized in Table 6.1 of this DEIS.

PROJECT IMPLEMENTATION AND RECOMMENDATIONS FOR PART B WORK

Chapters 7 and 8 of the DEIS present factors considered in determining how the multi-modal transportation plan for the Eastern Corridor would be successfully implemented, including information on performance, preliminary cost estimates, financial strategy, and phasing of the various aspects of the multi-modal plan for eventual implementation within the Eastern Corridor.



PRELIMINARY ENVIRONMENTAL MITIGATION AND ENVIRONMENTAL COMMITMENTS

Detailed evaluation of avoidance and minimization of impacts to environmental features by the Eastern Corridor multi-modal alternatives will be conducted during Tier 2 when more detailed alignment-specific alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative developed during Tier 2 studies will require the development (in Tier 2) of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Eastern Corridor for which mitigation, and/or permit preparation may be required in Tier 2, if determined to be impacted, are summarized by geographic area in Table 8.2 of this DEIS.

Overall, one or more of the following coordination, permits or mitigation issues are expected to require attention during further Eastern Corridor project development in Tier 2:

- ODNR Scenic Rivers Approval (ORC Section 1517.16) Little Miami River
- Section 7 coordination (Wild and Scenic Rivers Act) Little Miami River and possible tributaries
- Section 404 permits and Section 401 water quality certification Little Miami River and other streams, wetlands
- Section 7 coordination (Endangered Species Act) threatened and endangered species
- Section 4(f) public parks, cultural resources, Little Miami River (possible 4(f) involvement)
- Section 106 evaluation cultural resources
- Section 6(f) evaluation (Land and Water Conservation Fund) public parks
- Floodplain permit FEMA floodplains
- Compensatory mitigation streams, wetlands, sole source aquifer
- Potential abatement or other mitigation highway/rail noise, noise vibration, hazardous materials

An Eastern Corridor environmental mitigation plan will be further developed in conjunction with more detailed alignment development, preferred alternative selection, agency coordination, and stakeholder and public input efforts conducted during Tier 2. This project mitigation plan will be consistent with state and federal requirements, and may be in part administered at the local level in conjunction with other local preservation, mitigation or enhancement plans, with a combination of local, state and/or federal funding, as applicable.



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

CHAPTER 1 PROJECT HISTORY AND BACKGROUND



CHAPTER 1 PROJECT HISTORY AND BACKGROUND

This chapter of the Draft Environmental Impact Statement (DEIS) presents overview information from previous studies conducted for the Eastern Corridor, and background information on the current Tier 1 work phase. It includes: summary information on the Eastern Corridor Major Investment Study, the Land Use Vision Plan and other related studies (Sections 1.1 to 1.4), a description of the general project approach (Section 1.5), background information on how the study was conducted (Section 1.6), a brief overview of general study area characteristics (Section 1.7), and discussion of the multi-jurisdictional planning efforts and local land use, development and transportation issues that were used in guiding the Tier 1 work phase (Section 1.8).

1.1. PROJECT DESCRIPTION AND LOCATION

The Eastern Corridor Multi-Modal Projects is being conducted to identify workable strategies for improving long-term travel mobility between the City of Cincinnati and its eastern suburbs. The project is overseen by a partnership of state, county and city governments and transportation agencies, and is led at the local level by the Hamilton County Transportation Improvement District (HCTID). An Implementation Group, enlisted by the HCTID, oversees the study's progress and direction. This Implementation Group includes the Ohio, Kentucky and Indiana Regional Council of Governments (OKI) - the area's regional metropolitan planning organization, the Ohio Department of Transportation (ODOT), Clermont County, Hamilton County, the City of Cincinnati, and the Southwest Ohio Regional Transit Authority (SORTA)/Metro.

The project is located in the greater Cincinnati Metropolitan Area in southwestern Ohio. An early study area, which was evaluated for the Eastern Corridor Major Investment Study (MIS), covered a broad, nearly 200 square mile portion of greater Cincinnati, including 165 square miles in Hamilton and Clermont Counties, Ohio and about 35 square miles in northern Campbell County, Kentucky. The initial core study area for the Eastern Corridor Tier 1 work encompassed the 165-mile portion of the MIS study area in Hamilton and Clermont Counties, as shown on Figure 1.1.

Revisions to the core study area following completion of early Tier 1 work established a more refined detailed study area for the Eastern Corridor. This detailed study area covers approximately 14 square miles and extends from the Cincinnati Central Business District riverfront area in Hamilton County, east across the Little Miami River and I-275 outerbelt corridor to Clermont County, near the communities of Milford to the north, Batavia to the east and Amelia to the south. The detailed project study area is shown on Figure 1.2, and is the focal area for the development of feasible alternatives.

The Eastern Corridor is one of three major corridors currently under detailed study in OKI's metropolitan planning area, and is the only major study in the OKI region not focused primarily on an interstate highway segment. The I-71 corridor, which is planned for electrified light rail transit (LRT), is located just west of and adjacent to the Eastern Corridor, generally stretching along Interstate 71 from Warren County in Ohio to Boone County in Kentucky. A preliminary DEIS was prepared for the I-71 LRT project in November 2001. However, there are funding and financial feasibility concerns for this corridor, and further project development is uncertain. Plans of record for the I-71 corridor are being coordinated with the Eastern Corridor study.



Further west from the I-71 corridor is the I-75 corridor, with a study area extending from northern Kentucky to Dayton, Ohio. Conceptual studies for needed capacity improvements in this corridor have been completed, calling for lane additions and interchange improvements along the interstate and, in the longer term, rail transit in or along existing parallel rail freight corridors.

1.2. EASTERN CORRIDOR MAJOR INVESTMENT STUDY (MIS)

1.2.1. Description

Early transportation studies in the Eastern Corridor centered on traffic, engineering, environmental and community issues associated with solutions for improving transportation efficiency, with a focus almost exclusively on highway improvements. These studies were conducted from the early 1970's to the mid 1980's, at which point new land use developments and environmental impact concerns delayed advancement of findings, and no substantive transportation improvements resulted. These early studies are described in the Eastern Corridor MIS (OKI, April 2000).

Efforts to initiate a re-evaluation of evolving transportation needs for the Eastern Corridor began in the early 1990's as a result of new federal regulations established by the Intermodal Surface Transportation Efficiency Act (ISTEA), new priorities established by Access Ohio - Ohio's long range transportation plan, and updated regional and county transportation plans. These efforts led to the initiation of a Major Investment Study for the Eastern Corridor in 1996, conducted by the Ohio-Kentucky-Indiana Regional Council of Governments (OKI).

Summary of MIS Purpose and Conclusions

The Eastern Corridor MIS was a local planning study led by the regional metropolitan planning organization (OKI) for the purpose of identifying alternatives determined capable of meeting regional transportation needs, and that at the same time resulted in the best balance of efficiency, cost, social and economic benefit, and environmental impact minimization. The MIS work followed federal guidelines for urban transportation planning per 23CFR450(c), and was a collaborative effort involving public input and decision-making from an approximately 65-member task force composed of key federal, state, and local stakeholders. The Eastern Corridor MIS considered a broad range of information and evaluated a variety of alternatives and preliminary options for addressing current and future transportation problems in the area. Technical analyses were conducted at a scale and level of detail appropriate for the regional planning issues under consideration, and the public and stakeholders confirmed the approach and decision-making process used.

Study boundaries for the Eastern Corridor MIS covered an approximately 200 square mile portion of the Cincinnati metropolitan area, including about 165 square miles of study area in eastern Hamilton County and western Clermont County, Ohio and about 35 square miles of study area in northern Campbell County, Kentucky.

The MIS concluded with consensus by the Task Force on a Recommended Plan that consisted of multi-modal transportation improvements for the Eastern Corridor. The MIS Recommended Plan was approved by OKI in 1998 and incorporated into OKI's 2030 Regional Transportation Plan. The final Eastern Corridor MIS report, including the Recommended Plan, was completed in April 2000.



Alternatives considered during the MIS process, including those dismissed due to inability to meet regional transportation need and those forwarded for further study, are summarized in Chapter 3.2.2 and Table 3.1 of this DEIS.

1.2.2. MIS Goals

Four goals were identified by the Eastern Corridor MIS Task Force to guide the development, evaluation and eventual implementation of a Recommended Plan:

- Comprehensive transportation solution Identify an effective and comprehensive solution for the Eastern Corridor transportation problem.
- Support economic goals Provide support and sustenance to the regional economy.
- Consistent with environmental goals Implement transportation improvements that are consistent with environmental goals for the area, including minimization of impacts to neighborhoods, greenspace, water quality, streams, hillsides, aesthetics, habitat, historic and archaeological features, minimization of noise impacts, minimization of hazardous materials risk, and conformity with air quality.
- Consider land use Consider existing and future land uses in structuring the transportation solution for the Eastern Corridor.

1.2.3. MIS Evaluation Process and Recommended Plan

The Eastern Corridor MIS evaluated a variety of alternatives and preliminary concepts for addressing current and projected transportation problems in the Eastern Corridor. Included in the process was the organization of a specific MIS sub-committee to review and address issues related to potential new crossing(s) of the Ohio and Little Miami Rivers. MIS review of river crossings included evaluation of performance, costs, public input, position statements, and subgroup discussion.

At the conclusion of its review, the MIS sub-committee reached a consensus to include, in the highway component of the MIS Recommended Plan, a Relocated SR 32 alternative on new alignment. This relocated SR 32 alternative extended from Eight Mile Road in the Eastgate area to US 50 in Fairfax, and included a new Little Miami River crossing near Red Bank Road/US 50. Alternatives considered and dismissed during the MIS process are documented in the Eastern Corridor MIS document (2020 Vision for the Eastern Corridor, April 2000), and are summarized in this DEIS Chapter 3.2.2 and Table 3.1.

Following evaluation of alternatives, the MIS identified a multi-modal Recommended Plan for the Eastern Corridor, consisting of four transportation components:

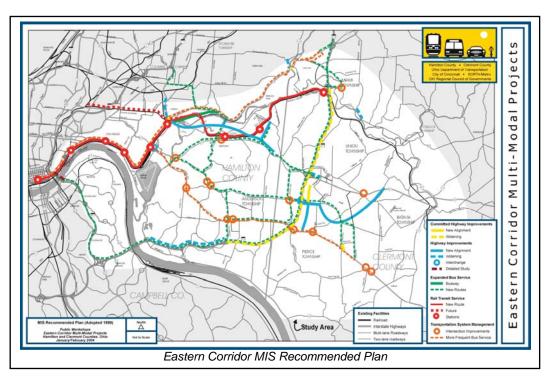
• Transportation System Management (TSM) Improvements

The TSM component of the MIS Recommended Plan focused on improving the existing transportation network through use of operational strategies, existing roadway corridor improvements, and use of transportation demand management (TDM) strategies; TSM components of the MIS plan consisted of expansion of the Advanced Response Traffic Interactive Management and Information System (ARTIMIS), 14 intersection improvements, 3 arterial corridor improvements, 28 miles of new bike trail, more frequent bus service on 2 existing routes, and 5 new park-and-ride locations.



• New and Expanded Bus Transit Service

The bus transit component of the MIS Recommended Plan focused on improving existing bus service to the Eastern Corridor and included the introduction of ten new or extended bus routes.



New Rail Service

The near-term rail transit component of the Recommended Plan focused on using existing, lightly used rail freight corridors for new passenger rail transit service. The plan recommended rail service on and along the Oasis and Norfolk-Southern Corridors using light Diesel Multiple Unit rail transit vehicles, extending from the downtown Cincinnati Riverfront area to the vicinity of the I-275 / US 50 interchange in the Milford area. The plan also called for preservation of the Norfolk-Southern Wasson Corridor for possible future development as an extension of the planned I-71 Light Rail Transit corridor, extending from Xavier University eastward to the vicinity of Fairfax and possibly beyond to I-275 in Eastgate.

• Highway Capacity Improvements

The highway improvement component of the MIS Recommended Plan focused primarily on the State Route (SR) 32 corridor and included: 1) the relocation and improvement of SR 32 to provide a connection between I-71 and I-275 via the existing Red Bank Road corridor (including footprint and section accommodation, where applicable, for improved bus and new rail transit), 2) Newtown Road improvements, 3) a new local road connection to the Ancor industrial area, and 4) SR 32/I-275 interchange improvements in the Eastgate area (also configured to accommodate transit).

1.3. EASTERN CORRIDOR LAND USE VISION PLAN

During the MIS process, consideration of existing and future land use was identified as a critical issue to the residents and communities of the Eastern Corridor. It was determined, therefore, that one of the key needs for the Eastern Corridor was the effective implementation of a transportation improvement plan that was developed around and responded to a desired land use scenario - as



opposed to a scenario where land use plans conformed to or evolved out of a transportation improvement project. This land use philosophy was identified as one of the four main MIS goals and has been an integral part of the overall Eastern Corridor development process.

A comprehensive land use vision plan for the Eastern Corridor was initiated in 2001 under the guidance of the Hamilton County Regional Planning Commission. This planning effort was funded by local dollars and guided by a vision group composed of representatives from 15 political jurisdictions in the Eastern Corridor from Hamilton and Clermont Counties, stakeholders, and individual citizens.

For the land use study, the Eastern Corridor was divided into six focus areas covering approximately 70 square miles. Numerous meetings and workshops were held in these focus areas, and input from these meetings, along with other land use, economic and community information, was evaluated to identify a consensus land use vision plan for the Eastern Corridor.

During the course of this planning effort, the conceptual transportation recommendations developed during the MIS phase of the project were used as guideposts, but were not incorporated as specific recommendations or required actions of the final land use plan. Instead, the land use and growth projections identified in the vision plan were integrated into the Eastern Corridor transportation planning process to identify appropriate fit and effectiveness of proposed transportation solutions, as further discussed in Chapters 3 and 5 of this DEIS.

The Eastern Corridor Land Use Vision Plan (ECLUVP; Meisner and Associates, May 2002) was endorsed by the land use vision group on April 4, 2002 and the final report was completed in May 2002. Overall, the plan incorporates economic development, green space preservation and quality-of-life issues identified from existing community plans and new information gathered from focus area groups. The adopted ECLUVP consists of a future land use map, a listing of fourteen land use issues considered of highest priority for the entire Eastern Corridor, and a listing of individual land use issues identified for the six focus areas.

Following its completion, the ECLUVP was adopted by the Hamilton County Regional Planning Commission and is in the process of being adopted by local political jurisdictions, including: City of Cincinnati, Village of Indian Hill, City of Norwood, City of Silverton, City of Madeira, Village of Fairfax, Village of Mariemont, Village of Newtown, Village of Terrace Park, Anderson Township and Columbia Township in Hamilton County and Batavia Township, Union Township and the City of Milford in Clermont County.

Overall, the results, recommendations and output of the land use vision plan provided baseline information considered during transportation alternatives development and impact evaluation conducted for the Eastern Corridor Tier 1 work. Existing and future land use maps generated as part of ECLUVP are presented in Figures 1.3 and 1.4, respectively.

1.4. EASTERN CORRIDOR ECONOMIC ANALYSIS

An Eastern Corridor Vision Plan Economic Analysis (Economics Research Associates, January 17, 2002) was prepared in conjunction with work being performed for the Eastern Corridor land use vision plan. This study evaluated the combined effects of the planning elements being developed for the land use vision plan with the transportation modes included in the Eastern Corridor MIS Recommended Plan to determine overall expected economic impacts compared to a no-action or



little-action scenario (that is, no land use vision plan and no transportation improvements).

Economic impacts in this analysis were estimated from anticipated changes in market-driven development activity due to MIS recommended public investments. Activity measures included economic impacts driven by changes in market pressures for development and the jobs and wages associated with that development - as opposed to transportation-oriented studies that address commute times, worker efficiency and other factors. Specifically, economic impacts for the Eastern Corridor area were estimated from the net change in estimated real estate market demand, calculated in terms of the number of jobs and residents accommodated within the Eastern Corridor.

Overall, the economic analysis showed that, by the end of ten years, the Eastern Corridor would gain 10,200 residents over what it would without the land use vision plan and MIS recommended transportation improvements, and gain 24,500 additional residents by the end of 20 years. Similarly, after ten years, the Eastern Corridor is expected to gain 4,900 more jobs than a no-action scenario, growing to 8,100 jobs by the end of 20 years. The study also showed that annual wages for these jobs are expected to be \$190 million higher after ten years and \$314 million higher after 20 years compared to a no-action scenario.

1.5. MULTI-MODAL FRAMEWORK AND TIERED EIS STRATEGY

1.5.1. Multi-Modal Transportation Improvements

As described previously, the Eastern Corridor project focuses on the evaluation of four transportation modes identified in the MIS Recommended Plan as a starting point for the development of alternatives: TSM improvements, new and expanded bus transit service, new rail transit service and highway capacity improvements.

Initial planning work conducted during the MIS phase of the project and development of the Eastern Corridor land use vision plan confirmed that this multi-modal strategy is required to adequately address current and future transportation problems in the Eastern Corridor. Subsequently, the Eastern Corridor preliminary engineering/environmental impact phase of the project, referred to as the Tier 1 work phase and the subject of this DEIS, is based around this multi-modal framework.

The Tier 1 phase of the Eastern Corridor study is also based on recognition that the transportation investments in the project area need to be land use driven, planned around a desirable and supportable future land use vision, and recognizing that individual transportation projects in different modal categories (bus, rail, highway, bike, pedestrian) need to be coordinated and implemented to work in conjunction with each other. Overall, this strategy allows transportation issues of concern in the Eastern Corridor to be addressed in a fully planned context, and ensures in the long-term that only the needed capacity is built, regardless of mode, and that the needed capacity is provided in the appropriate time frame.

1.5.2. Tiered NEPA Process

Tiering is an approach for completing the National Environmental Policy Act (NEPA) process in stages so that information matches up with decision-making in a more efficient and effective



manner. Tiering can benefit the decision-making process in complex or large actions. For many applications, including the Eastern Corridor, a Tier 1 stage involves the preparation of an environmental impact statement (EIS) that evaluates a broad study area, set of modes, and/or potential corridors associated with a major federal action that triggers the NEPA process. In general, Tier 1 addresses big picture planning issues such as purpose and need, build versus no-build, mode preference, development of conceptual alternatives, and identification of feasible alternatives. A primary goal of a Tier 1 EIS is to provide enough information - including some level of preliminary engineering, inventory of key environmental resources and constraints, first-cut preliminary impact assessment, and preliminary performance and cost analyses - to allow for decision-making regarding the alternatives being considered. Tier 1 ends with a Record of Decision (ROD) that identifies a set of feasible alternatives to be carried through into a Tier 2 stage.

Tier 2 involves the preparation of separate NEPA documents for the various projects carried through from the first tier. These documents may be EIS's, environmental assessments or categorical exclusions, depending on project complexity and degree or intensity of expected impact. The environmental documents prepared for Tier 2 projects will typically involve more detailed alternative alignment development, more detailed environmental field studies and evaluation, detailed environmental impact assessment, and identification of mitigation measures and environmental commitments in order to sufficiently address and complete the NEPA process on a specific project-by-project basis. All environmental documents prepared during Tier 2, however, will ultimately refer back to the purpose and need, corridor evaluation/selection process and other background information presented in the project's Tier 1 EIS and ROD.

Regulatory Authority for Tiering

The use of tiering is authorized under NEPA regulations issued by the Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) Part 1500 and under regulations issued jointly by the Federal Highway Administration (FHWA) and the Federal Transit Authority (FTA), 23 CFR Part 771.

Tiering is also addressed in guidance documents issued by both these agencies, including guidance issued in 1981, 1983 and 1988 by the CEQ, as well as tiering guidance outlined in a memorandum issued by FHWA dated June 18, 2001.

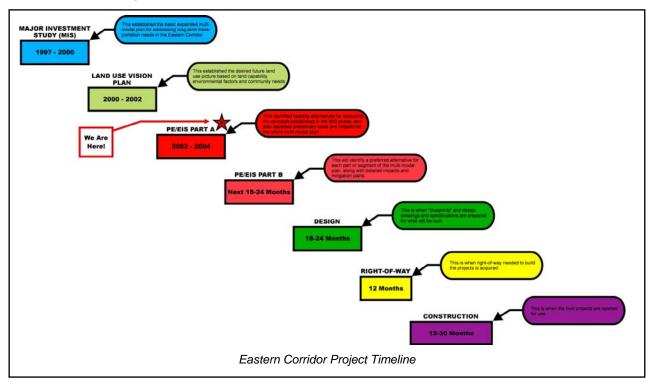
Summary of Tiered Approach for the Eastern Corridor

FHWA guidance (FHWA memo dated June 18, 2001) refers to tiering as "an option available to organize analysis and decision-making in complex circumstances in a way that takes into account the different geographic scope and timing for different decisions", and "because tiering is an option available to address complex situations, we [FHWA] have deliberately stayed away from prescriptive guidelines on how to apply tiering, so that each tiered process can be custom designed to the specific situation."

The Eastern Corridor project is a long-term, multi-modal plan that addresses transportation problems affecting a number of communities in the eastern portion of the greater Cincinnati area. This project is determined to warrant a tiered NEPA approach due to the complexity involved in the coordination of multi-modal improvements, prioritization of projects, and the different construction timing expected for the needed transportation investments identified from the project MIS.



A tiered process customized for the Eastern Corridor, depicted on the project timeline below, was developed with guidance and scoping input from FHWA, FTA and resource agencies. Specifically, Tier 1 work provides the basis for making informed decisions on identifying feasible multi-modal alternatives, which are to be carried through into Tier 2 for more detailed engineering and environmental study.



Specific tasks associated with each tier are described below:

<u>Tier 1</u> of the Eastern Corridor study, which is the subject of this DEIS document, focuses on the description of project purpose and need, the identification of feasible alternatives and detailed study corridors, collection of environmental field data, and initial performance and benefit-cost work. Key tasks conducted in Tier 1 included preliminary environmental and land use studies, travel demand modeling, comprehensive public and agency involvement efforts, alternatives development and evaluation, initial engineering work for modal alternatives, and first-cut (preliminary) impact assessment and benefit/cost analyses.

Overall, Tier 1 work for the Eastern Corridor as presented in this DEIS consisted of the description of purpose and need for transportation improvements in the Eastern Corridor (Chapter 2), development and sorting of conceptual modal alternatives and feasible multi-modal alternatives (Chapter 3), the identification of key environmental resources occurring in the area based on a combination of secondary source information and field studies (Chapter 4), a preliminary assessment of expected impacts for the feasible multi-modal alternatives and fit with identified land use vision goals (Chapter 5), a summary of public and agency involvement efforts (Chapter 6) and an overview of implementation considerations (Chapter 7). Information presented in this DEIS will ultimately become the Tier 1 EIS for the project (following agency and public review) and a request for a Record of Decision will be made regarding feasible multi-modal alternatives to be carried through into Tier 2. The goal of Tier 1 work is not an either/or determination among modes



or alternatives within a mode. It is rather an effort intended to identify how the various modal investments, in a multi-modal framework consistent with the recommendations of the MIS, may be best implemented in consideration of many factors, including engineering, environmental, financial, public input, land use and community development issues.

<u>Tier 2</u> work for the Eastern Corridor will be a completion of the NEPA process by the preparation of individual environmental documents for each of the projects carried through from Tier 1. These Tier 2 NEPA documents will refer to the project purpose and need and other background information presented in the Tier 1 EIS for the Eastern Corridor, but will incorporate more detailed alignment development, environmental field assessment, impact evaluation and mitigation plan development on a project-by-project basis. Prioritization and timing of Tier 2 projects will be identified at the end of Tier 1 work, and presented in the final Tier 1 EIS document.

Resource Agency Meetings on Tiered Approach for the Project

A number of coordination meetings with state and federal regulatory agencies have been conducted to obtain agency comments, expectations and concerns regarding project scope and development. These meetings are listed and briefly summarized in Chapter 6 of this DEIS. Early meetings and coordination conducted for the project dealing specifically with the tiered NEPA approach included the following:

<u>Initial Coordination Meeting:</u> An initial project coordination meeting with state and federal regulatory agencies was held on January 17, 2002 and included representatives from the Federal Highway Administration (FHWA), the Ohio Department of Transportation (ODOT), the Ohio Department of Natural Resources (ODNR), the Ohio Environmental Protection Agency (OEPA), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Environmental Protection Agency (USEPA). Project history, work program and status information was provided, and a discussion of study process and expectations was conducted, resulting in across-the-board support for a tiered EIS approach for the Eastern Corridor.

<u>Lead Agency in NEPA Process</u>: A second coordination meeting with resource agencies was held on April 12, 2002 and included representatives from the Federal Transit Authority (FTA), FHWA, USEPA and ODOT. The tiered EIS approach was again confirmed at this meeting and an agreement was made that FHWA would serve as the lead agency in the NEPA process, with cooperating agencies to include FTA, the U.S. Army Corps of Engineers (USCOE) and the National Park Service (NPS).

<u>Notice of Intent:</u> The FHWA published a Notice of Intent (NOI) in the Federal Register on May 21, 2002 announcing that a Tiered Environmental Impact Statement would be prepared for proposed multi-modal transportation projects in the Eastern Corridor. The NOI specified the project area as covering approximately 200 square miles, extending from the Cincinnati Business District in Hamilton County, east to the communities of Milford, Batavia and Amelia in Clermont County, and south into northern Kentucky along I-275 and I-471. This defined project area generally corresponds to the study area evaluated during the MIS phase of the Eastern Corridor project.



Coordination for Tier 1 Environmental Work Plans

A meeting was held on August 2, 2002 to discuss and develop appropriate work plans for key environmental studies - ecological, cultural resources and environmental analysis work - to be conducted during Tier 1 of the Eastern Corridor project. Resource agencies in attendance included representatives from ODOT, FHWA, OEPA and the Ohio Historic Preservation Office (OHPO). Environmental work plans, including general strategy by discipline, scope of field studies, method of documentation and agency review, were developed on August 12, 2002, following incorporation of input obtained at this meeting. Work plans conducted for Tier 1, including refinements to the original plans developed during this initial coordination (August 2002) are included in Appendix A.

Results from the Eastern Corridor Tier 1 studies are documented in the: Ecological Resources Inventory Report (Balke American, February 2003), Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives (Gray and Pape, Inc., December 2002), Results of Hazardous Materials Environmental Study, Corridor Inventory and File Review of Priority Sites, Eastern Corridor PE/EIS (H.C. Nutting Company, December 2002) and Addendum to Part A Environmental Studies (Balke American, June 2003). Results from these studies are included in the information presented in Chapter 4 (Affected Environment) of this DEIS and were used in determining initial project impacts, as presented in Chapter 5.

1.6. TECHNICAL AND DECISION-MAKING TOOLS USED IN PROJECT DEVELOPMENT

1.6.1. Geographic Information System (GIS)

GIS is a computerized system of hardware, software and data used to map, record and analyze information. In general, GIS data is stored in the form of layers comprised of features that are similar in nature (streams, for example) and containing specific information about those features (for example, stream name, location, length, etc). GIS layers can be displayed to show physical location of features, and different GIS layers can then be superimposed to show the relationship between different types of features.

GIS digital base mapping was specifically prepared for the Eastern Corridor project, melding framework databases from the Hamilton County and Clermont County systems. Base map data sets included parcel information, contours, hydrography, railroad and road centerline, study area boundaries, county boundaries and county aerial images. Throughout project development, GIS databases were obtained or prepared for all secondary source environmental information, field collected environmental data and modal alternatives. This comprehensive Eastern Corridor GIS database was then used in the development of environmental inventory mapping for the project, in the analysis of environmental data, in the development of conceptual and feasible modal alternatives, and in the preliminary environmental impact evaluation of these alternatives.

1.6.2. Travel Demand Modeling

Travel demand forecasting conducted for the project used the OKI/Miami Valley Regional Planning



Commission Regional Travel Demand Model (RTDM) Version 6.0, which was updated for the Eastern Corridor study to include: a) recent enhancements made to the model for work associated with the I-75 Corridor study, which is also underway in the OKI region, so that all studies and decisions in the region were sharing the same data and evaluation framework, and b) as part of sensitivity and trend assessment, incorporation of specific future land use information developed for the Eastern Corridor, as presented in the Eastern Corridor Land Use Vision Plan (ECLUVP; Meisner and Associates, May 2002).

In general, RTDM uses a computerized, mathematical process to assess the interaction of many travel variables to forecast future travel demand in an area, and how that demand would likely be shared among different transportation modes - such as ride alone, ride sharing and public transit use. The model considers travel time and cost as primary indicators of transportation efficiency and is an important tool for predicting future travel needs and understanding the effects and benefits of improvement plans.

A multi-step process of RTDM is being used in the development and assessment of alternatives spanning Tiers 1 and 2 of the Eastern Corridor study. In general, the Tier 1 RTDM work included updating the model with the most recent socioeconomic, land use, travel and regional model information, and using the model to evaluate the effectiveness of various mode elements and alternative multi-modal scenarios in the development of feasible alternatives. Tier 2 RTDM work will focus primarily on alternatives refinement and impact assessment, and outputs relative to final performance and financial assessments. The RTDM work conducted during Tier 1 studies utilized a 2030 horizon year. Results from Tier 1 RTDM modeling are presented in Chapter 7.1 of this DEIS.

More details on the changes to the RTDM since the completion of the MIS work are presented in the following paragraphs.

Recent Regional Model Update

A regional travel demand model is not fixed. As new research becomes available or new survey data is collected, travel demand models are updated to better represent travel behavior and the observed travel pattern in the region.

The Regional Travel Demand Model (RDTM) used in this study differs from the one used in the previously completed Eastern Corridor MIS. The model currently in use was developed and calibrated as part of the North-South Transportation Initiative (NSTI), a Major Investment Study of Interstate 75 from northern Kentucky to Dayton, Ohio, conducted by the Ohio-Kentucky-Indiana Regional Council of Governments in concert with the Miami Valley Regional Planning Commission (MVRPC), the Dayton area metropolitan planning organization. Intermediary versions of the current RTDM were developed in the process of establishing the current model version used in both the I-75 MIS (NSTI) and Eastern Corridor Tier 1 work. OKI hosted peer review sessions to confirm and refine the direction of the model update work.

The major differences between the new model (identified as Version 6.0) and the model used in the previous Eastern Corridor MIS include the following:

• <u>OKI and MVRPC Regions Combined</u> – The travel demand models for the Ohio-Kentucky-Indiana Regional Council of Governments and the Miami Valley Regional Planning Commission (OKI and



MVRPC respectively) were consolidated into a single model to better represent the entire "super-region" and current urbanization and travel patterns. Specifically, the new model extends the OKI model to the combined OKI/MVRPC super region. The combined region includes Hamilton, Clermont, Warren, Butler, Montgomery, Greene and Miami counties in Ohio, as well as Boone, Kenton and Campbell in Kentucky and Dearborn in Indiana.

- <u>Trip Rates</u> The trip rates per household were updated based on a 3000- household travel survey conducted for OKI in October and November 1995.
- <u>Trip Distribution</u> In the older model, the "friction factors" that reflect the implicit costs of traveling between a pair of analysis zones (such as travel time, distance, costs, etc.) were based on the highway mode only. In the new model, all transportation modes, including transit modes, are reflected in the friction factors (in other words, new transit options affect the trip distribution results).
- <u>Mode Choice Model</u> A new mode choice model was incorporated into the new model and calibrated. In the new model, a choice is first made between auto and transit. Under the transit side, the first level choice is between local bus, express bus, and (if available) light rail and commuter rail. The second level choice is between walk access, park-and-ride access and kiss-and-ride access to each transit mode. The older model had a reversed transit choices (access first and transit mode second) and considered local versus premium transit only.
- <u>New Truck Trip Tables</u> The new model includes two sets of truck trip tables, one for the base year and one for the future year. The base year truck trip table was developed using a synthetic matrix estimation procedure that reflected likely truck trip productions and attractions and resulted in truck volumes that were consistent with observed truck counts. Future truck trip tables were developed using procedures that took into account growth in employment and households as well as expected changes in industrial output.
- <u>Change in Future Year</u> While the future planning horizon and travel forecast year in the older model and the Eastern Corridor MIS was 2020, the future year for the current model and this study is 2030. A new set of socio-economic data reflecting updated forecasts for future conditions was developed for the entire region for the 2030 planning horizon year, and is part the current Version 6.0 model.
- <u>Feedback Loop</u> The OKI RTDM uses a well-described and commonly applied four-step process to assess travel demand and resultant patterns:
 - Step 1 Determine how many trips will be made (trip generation)
 - Step 2 Determine which destinations will be selected by people living in specific areas (trip distribution)
 - Step 3 Determine how will travel will be divided between driving alone, ridesharing and public transit (mode choice)
 - Step 4 Determine how many vehicles or people will want to use specific roadways or transit services (trip assignment)

The current model now incorporates additional features that more robustly account for possible dynamics within the traditional four-step process. In the current model, after a first cycle through the four-step process, highway travel times are then recalculated to take into account the likely effect of congestion, and a feedback loop starting at the trip distribution step is initiated. The process is reiterated until convergence on a single set of values is reached. This process, in effect, assesses the tendency of people to drive to new and possibly more distant destinations if there is a favorable travel time condition (i.e., people may drive further if it is quicker or less congested). The older model had a single feedback loop restarting at the mode choice module.



1.6.3. Benefit/Cost Analyses

An evaluation of the costs and expected benefits of the multi-modal transportation plan components evaluated during Tier 1 is being conducted for the project under separate cover from the NEPA evaluation. This benefit/cost work is a coordinated effort, with a regional perspective, that addresses all transportation modes and incorporates basic travel efficiency measures as well as community measures.

The benefit/cost work utilizes output obtained from RTDM modeling conducted at the end of Tier 1. It includes probability-based risk analyses and consideration of the mobility benefits for transitdependent populations, congestion management benefits for highway users, and economic development benefits (quality-of-life economic and construction impacts). Additional benefit/cost work, to be conducted during Tier 2, will evaluate the jurisdictional benefit of the project for the purpose of establishing the benefit relationship for funding partners and providing framework for multi-jurisdictional participation in implementing the proposed multi-modal transportation plan for the Eastern Corridor.

1.6.4. Public Involvement

The Eastern Corridor study utilized a comprehensive public involvement program that was established early in the planning process and was integrated with all phases of project development. The public involvement program was specifically designed and conducted to: a) effectively engage and inform a variety of public entities, including project stakeholders, local media, environmental justice communities and the general population living and working in the Eastern Corridor, and b) be consistent with NEPA requirements for public involvement.

Details of the Eastern Corridor public involvement program are specifically outlined in Chapter 6 of this DEIS. Overall, key components of the program included: the holding of public meetings and community workshops, the development and maintenance of multiple public feedback channels including a project website, project office, project email, telephone hotline and on-line library, the development and maintenance of effective media relations, the development of marketing tools such as billboard and newspaper ads and public service announcements, and the development of a corporate citizenship program.

1.7. GENERAL STUDY AREA CHARACTERISTICS

1.7.1. Political and Planning Jurisdictions

The Eastern Corridor project occurs within the jurisdiction of two counties (Hamilton and Clermont), one metropolitan planning organization (OKI), one transit authority (SORTA/Metro) and one state transportation agency (ODOT). In addition, several cities, villages and townships are located within or immediately adjacent to the boundaries of the detailed study area, including: the City of Cincinnati, Fairfax, Indian Hill, Mariemont, Newtown, Terrace Park, Norwood, Anderson Township and Columbia Township in Hamilton County, and Amelia, Batavia, Milford, Batavia Township, Miami Township, Pierce Township, Stonelick Township and Union Township in Clermont County (see Figures 1 and 2).

Hamilton County, Clermont County, OKI, SORTA/Metro, ODOT and the City of Cincinnati are the



supporting partners in the Eastern Corridor study. The Ohio-Kentucky-Indiana Regional Council of Governments administers the region's long range and short range transportation plans.

1.7.2. Population and Employment

Population in the 165-square mile Eastern Corridor study area was about 221,000 persons in 1995, a majority of which resided in Hamilton County. Corridor population is expected to increase by about 7% to approximately 236,000 persons by the year 2030.

Major employment centers in the Eastern Corridor include: commercialized areas along Beechmont Avenue in the west portion of study area and in the vicinity of Eastgate Mall at the east end of study area, industrial areas in Newtown at the center of study area, and the rapidly developing commercial and office park areas on SR 32 east of I-275, in the Batavia area, and in parts of Cincinnati, Fairfax and Milford. Approximately 103,000 people were employed in the Eastern Corridor study area in 1995, and that total is expected to grow by about 19% to 122,000 by the year 2030. Population and employment in the Eastern Corridor is further described in Chapter 4.2 of this DEIS.

1.7.3. Environmental Conditions

The Eastern Corridor contains a mix of urban/suburban development, including residential, commercial and industrial areas, and scattered natural environmental features. Variable topography, high quality streams, groundwater resources, and developed communities all contribute to the aesthetic and environmentally important context of this part of the Cincinnati metropolitan area.

Environmentally sensitive resources occurring in the Eastern Corridor study area requiring special consideration and protection during project development are described in detail in Chapter 4 of this DEIS. Important environmental features/considerations include: the Little Miami River and other surface streams, wetlands, aquifer resources, plant and wildlife resources, threatened and endangered species habitat, cultural historic and archaeological resources, air quality and noise.

1.7.4. Existing Transportation Infrastructure

Highway Network

The existing transportation infrastructure in the Eastern Corridor is predominantly highway based, and consists of a combination of interstate systems, federal routes, state routes, county roads, municipal streets and township roads. This highway-based system was stablished in the 1960's through the early 1980's, and has not been substantially upgraded since then. The existing highway network in the Eastern Corridor is shown on Figure 1.5.

Two interstate highways serve the area, including I-71/I-471 along the west side in Hamilton County, and I-275 along the east side in Clermont County. Access to the Cincinnati Business District and surrounding communities in Hamilton County and portions of northern Kentucky is provided by I-71, while interstate access to the US 50 corridor to Milford, the SR 32 corridor to Eastgate, and the SR 125/Beechmont corridor is provided by I-275 in Clermont County. SR 32, SR 125, and US 50 comprise the major east-west arteries connecting I-275 with I-71/I-471



and the Cincinnati Business District. Other major highway arterials in the Eastern Corridor study area include Clough Pike, Five Mile Road and Red Bank Road.

Six river crossings currently serve travel within and through the Eastern Corridor study area. These include four bridges over the Little Miami River - the US 50 bridge at Milford, the Newtown Road bridge at US 50, the Beechmont Levee bridge at the junction of SR 32 and SR 125, and the US 52 bridge near Lunken Airport - and two over the Ohio River, including the I-471 bridge in downtown Cincinnati and the I-275 bridge east of I-471.

Transit System

<u>Bus Transit</u>: Fixed route bus transit service in the Eastern Corridor, shown on Figure 1.6, is currently provided by SORTA/Metro. The area is currently served by four park-and-ride facilities and eighteen bus routes, including service along Wooster Pike and Columbia Parkway (US 50), Beechmont Avenue (SR 125), Eastern Avenue (US 52) and I-275/I-471, most of which connect to the Cincinnati Business District. No Metro bus transit service, however, is currently available in much of the central part of the Eastern Corridor, including SR 32, Newtown Road and the majority of Clough Pike. Except for service along Beechmont Avenue to the Amelia area, there is no Metro service in the Eastern Corridor east of I-275.

Also occurring in the area is the Clermont Transportation Connection, which is a demandresponsive bus transit system, not operating on regular routes. Contract service to the local mental health/retardation board in Clermont County is conducted by this private service.

<u>Rail Transit:</u> There is currently no rail transit in the Eastern Corridor or greater Cincinnati metropolitan area.

Railroad System

Two railroad freight lines occur in the Eastern Corridor, including the Norfolk Southern (NS) railroad and the Cincinnati Terminal Railway line (CTER), as shown on Figure 1.7 and described below:

<u>Norfolk Southern</u> - The Norfolk Southern (NS) main line, also known as the Wasson Line, is the major east-west route in the study area, extending from Fairfax where it crosses the CTER trackage, through Mariemont, across the Little Miami River, through Newtown and generally east towards Milford and through Batavia. At this time, NS uses the line within the Eastern Corridor for certain through train operations. Overall, this segment of railroad is part of the NS Clare to Vera (Portsmouth) line, totaling 96 miles. At Portsmouth, the NS line connects to mainlines to West Virginia and the Tidewater area of Virginia, and north to the Great Lakes.

An additional NS line, referred to as the Old Main Line, connects to the main NS route near the Little Miami River bridge crossing. This line extends west to the Montgomery Road/Dana Avenue area near I-71, just west of the Eastern Corridor. This line generally parallels Wasson Avenue and is used only for industrial service without through train traffic.

Another NS line continues east, north of the Little Miami River, from a railroad junction in Mariemont. This line is less than one mile in length and serves as a switching lead for a distribution facility. From this point, an abandoned rail line extends parallel to US 50 to Milford,



onto Xenia, which was part of the Pennsylvania Railroad. This line has been publicly acquired and is used as a hiking and bike path north of Terrace Park (Little Miami River Scenic Trail).

<u>Cincinnati Terminal Railway</u> - The CTER line, also known as the Oasis line, begins near the Cincinnati Central Business District, extends east, paralleling the Ohio River, Eastern Avenue (US 52) and Columbia Parkway (US 50), then turns north near Lunken Airport and continues generally northwest before leaving the Eastern Corridor in Norwood. SORTA/Metro owns the real estate for this rail line, but the active main track is owned by the Indiana and Ohio Railway System (I&O), which operates trains on the route. SORTA/Metro owns a second set of unused tracks parallel to the active I&O track along this rail corridor, providing a double track capacity within the rail right-of-way. The CTER railroad connects with the NS line in Evendale. In general, primary traffic on the CTER line is the continuation of the NS line, providing freight service to local industries in the area.

Lunken Airfield

Lunken Airfield is a general aviation airport owned and operated by the City of Cincinnati, located between Kellogg and Beechmont Avenues, about five miles from downtown Cincinnati. Lunken was formerly the commercial airport for the Cincinnati area, but has been replaced by the Cincinnati-Northern Kentucky International Airport (CVG) located in Covington, Kentucky. Lunken Airfield currently provides general aviation, private charter airline, and corporate air services, houses about 60 businesses at the airport and supports nearly 2,000 regional jobs.

Bike Facilities

Segments of several roadways in the Eastern Corridor serve as on-road bicycle facilities in having shared lanes, wide outside lanes, bike lanes and paved shoulders. In addition, two designated bike facilities occur in the area (see Figure 1.8), as described below:

Little Miami Scenic Trail - The Little Miami River State Park and Scenic Trail is a paved trail corridor that follows an abandoned railroad right-of-way along the Little Miami River valley through four counties in southwest Ohio, extending from Milford in Clermont County north for about 50 miles to near Spring Valley in Greene County, Ohio. This park/trail facility, operated by the Ohio Department of Natural Resources, provides biking, cross-country skiing, rollerblading, backpacking and horseback riding opportunities, as well as canoeing access to the Little Miami River. The Little Miami River Scenic Trail continues north from Spring Valley for an additional 22 miles to Springfield in Clark County. The northern section of the scenic trail from Spring Valley to Springfield is not a state park, but is operated by Green County Parks and Recreation.

The proposed project does not encroach on the current boundaries of the Little Miami River State Park or the Little Miami River Scenic Trail, which begins in Milford about 10 miles north of the proposed project river crossing location. There are local plans, however, by the Hamilton County Park District, Anderson Parks and the City of Cincinnati, to extend the Scenic Trail from Milford south to Avoca Park, through the Hamilton County Park District Golf Center in Newtown, through Clear Creek Park in Anderson Township, eventually connecting to existing bike trails in the Lunken Airport vicinity. A portion of this trail extension in the Newtown area - along Newtown Road with a new bike trail bridge over the Little Miami River - is currently under construction. Portions of the planned Little Miami River Scenic Trail extension, which are included in the 2001 Version of the 1993 OKI Regional Bike Plan, cross through the proposed project detailed study area, and are included in the Eastern Corridor multi-modal plan (see Chapter 3).



<u>Lunken Airport Bike Path</u> - This asphalt-paved bike path is owned by the City of Cincinnati and extends around Lunken Airport and nearby adjacent parks. Plans are underway to extend the path north and east, including crossing the Little Miami River and Beechmont Avenue (SR 125). The railroad right-of-way west of Lunken towards downtown Cincinnati has been identified for a future bike path, with possible connection to future transit facilities along the rail line. There is also proposal to construct the Ohio River Bike Trail, which would connect the Lunken Airport Bike Path with New Richmond, outside the Eastern Corridor.

1.8. COORDINATION OF LOCAL PLANNING EFFORTS

The Eastern Corridor project occurs within the jurisdiction of two counties, a metropolitan planning organization, a transit authority, a state transportation agency, and numerous local city, village and township jurisdictions. Supporting partners for the Tier 1 phase of the project include Hamilton County, Clermont County, OKI, SORTA/Metro, ODOT, and the City of Cincinnati.

Currently, under the home-rule policy that exists in Ohio, jurisdictions in the Eastern Corridor area create and implement individual development strategies and land use plans within their own political/municipal boundaries, often with little to no coordination with adjacent communities and jurisdictions. This governing policy at times results in difficulty in producing a larger scale, regional plan that takes into account greater land use, transportation and development issues that are common to the different jurisdictions within the area and that link them together. Subsequently, there is a need within the Eastern Corridor to create a common ground between jurisdictions with respect to these large-scale planning issues in order to effectively address existing and future transportation, social and economic concerns in the area.

The Eastern Corridor study, therefore, is an extensive and unique cooperative effort at the local level for planning and implementing an effective transportation solution for the entire multijurisdictional project area. This cooperative planning effort began at the Eastern Corridor MIS phase of the project, continued through the land use vision work, and is being carried forward into the current Tier 1 work program.

As such, local jurisdictional and implementation group issues of concern regarding land use, development, and transportation infrastructure in the Eastern Corridor were identified during the MIS and land use vision processes. These local concerns are now being considered during the Tier 1 phase in guiding transportation planning efforts, developing and evaluating multi-modal alternatives, and for identifying workable alternatives and strategies for eventual implementation within the Eastern Corridor, along with environmental, engineering, performance, financial and other project considerations. Key local concerns for the Eastern Corridor identified during early project development are further described below.



1.8.1. Concerns by Geographic Area in the Eastern Corridor

<u>Identification of Geographic Areas:</u> During development of the Eastern Corridor land use vision plan, input obtained from public workshops held within six geographic focus areas was used to identify individual priority land use considerations for each of the focus areas. This information was ultimately used to develop a comprehensive future land use plan for the entire Eastern Corridor.

A primary effort was made during the Eastern Corridor Tier 1 phase to coordinate with work previously conducted for the Eastern Corridor land use vision plan, and to fit with the findings and goals of that vision plan. In other words, feasible alternatives for the project were developed with the goal of creating a multi-modal solution for the Eastern Corridor that supported, to the extent practicable, the priority plans and goals that were identified and adopted by specific focus areas through the land use vision process.

As a result, Tier 1 work for the Eastern Corridor, including alternatives development (Chapter 3) and impact evaluation (Chapter 5), was conducted not only at the transportation mode level, but at a geographic area level as well. Specifically, feasible alternatives developed for the Eastern Corridor were grouped together by six geographic areas within the study boundaries that generally corresponded to the focus areas and/or combinations of portions of the focus areas used during the land use vision work. This grouping of alternatives for Tier 1 took into account logical termini and operational considerations regarding how the different components of a proposed multi-modal transportation plan within an area worked together to address a particular transportation need or local and/or regional capacity issue.

The six geographic areas used in the Eastern Corridor Tier 1 work, overlain onto the original land use vision focus areas are depicted on Figure 1.9, and summarized in Table 1.1 below:

Eastern Corridor Tier 1 Area	General Location	Land Use Vision Plan (LUVP) Focus Area(s)
Area #1: Wasson/Red Bank Road	I-71/Xavier south to Red Bank Road/US 50	Portions of the Wasson, Red Bank and River Plains LUVP Focus Areas
Area #2: Ohio 32/Wooster West	Red Bank/US 50 east through Newtown to Ancor/Mount Carmel Hill	Portions of the Ohio 32, River Plains and Wooster LUVP Focus Areas
Area #3: Wooster East	Ancor/Mt. Carmel Hill north to Milford	Portions of the Wooster and River Plains LUVP Focus Areas
Area #4: Eastern Avenue/Lunken	Downtown (riverfront area) east along Ohio River to Lunken Airport/US 50	Portions of the Eastern Avenue/Lunken and River Plains LUVP Focus Areas
Area #5: Eastern Avenue/Lunken and Ohio 32/Eastgate	Lunken Airport/US 50 east along Beechmont Avenue to I-275 at Eastgate	Portions of the Eastern Avenue/Lunken, Ohio 32 and River Plains LUVP Focus Areas
Area #6: Ohio 32/Eastgate	Ancor/Mt. Carmel Hill east along SR 32 to Eastgate/Batavia	Portion of the Ohio 32 Focus Area

Table 1.1. Eastern Corridor Geographic Areas Relative toLand Use Vision Plan Focus Areas

Concerns by Geographic Area: The key land use, development and transportation improvement



concerns listed below by geographic area are based on focus area action items identified during the land use vision process, along with recommendations from the Eastern Corridor MIS, local input, and preliminary project studies conducted in the early stages of the Tier 1 work program.

Area #1: Wasson/Red Bank Road

- Improve capacity and consolidate/manage access points along Red Bank Road to establish a controlled access arterial roadway on Red Bank from I-71 to Wooster Pike
- Improve capacity at Duck Creek and Red Bank Road
- Improve access at Red Bank Road and Madison Road
- Improve access (new interchange) at US 50/Red Bank Road/Wooster Pike
- Improve connectivity within, to and from the area
- Encourage office and industrial land uses, and limit retail development in the Red Bank corridor
- Create streetscape and gateway improvements
- Preserve existing parks and greenspace, and create new parks and greenspace for underserved areas
- Create bike trail connections
- Revitalize the Madisonville Neighborhood Business District near Whetsel Avenue and Madison Road
- Revitalize the Evanston Neighborhood Business District east of Xavier University, near Montgomery Road and Dana Avenue
- Revitalize the Fairfax Neighborhood Business District
- Create pedestrian-friendly areas
- Reduce flood hazards and moderate urban storm runoff

Area #2: Ohio 32/Wooster West

- Consolidate and manage access points to establish relocated SR 32 as a controlled access arterial roadway west of I-275, with a shared roadway/transit crossing over the Little Miami River
- Improve connectivity
- Reduce flood hazards and moderate stormwater runoff
- Preserve land in the river plains for agriculture or open space, and re-establish forested streamside corridors along the Little Miami River to preserve and enhance water quality
- Develop the Ancor and northeast Newtown area with a mix of office, industrial and recreation (infill development)
- Revitalize the Newtown Neighborhood Business District
- Create pedestrian-friendly areas
- Preserve existing parks and greenspace, and create new parks and greenspace for underserved areas

Area #3: Wooster East

- Consolidate and manage access points to establish relocated SR 32 as a controlled access arterial roadway west of *I*-275
- Improve connectivity
- Create pedestrian-friendly areas
- Create infill development
- Preserve existing parks and open space, and create new parks and open space for underserved areas
- Preserve hillsides, the Little Miami River's edge and visual quality along US 50
- Create bike trail connections
- Create streetscape and gateway improvements along key corridors
- Reduce congestion
- Redevelop Columbia Township along Wooster Pike east of Mariemont with a mix of housing and neighborhood retail



Area #4: Eastern Avenue/Lunken

- Create pedestrian-friendly areas
- Reduce congestion
- Preserve existing parks and open space, and create new parks and open space for underserved areas
- Improve connectivity
- Redevelop the Columbia Tusculum Neighborhood Business District as a mixed use pedestrian friendly development
- Support creation of diverse neighborhoods with equal housing opportunities
- Create bike trail connections
- Support creation of a K-12 school and community center along Kellogg Avenue near Stanley or Delta Avenue
- Minimize negative impacts of connectivity improvements and assure environmental and aesthetic sensitivity
- Preserve hillsides and visual quality of US 52 (Eastern Avenue) along the Ohio River
- Encourage light industry/office development near Lunken Airport

Area #5: Eastern Avenue/Lunken and Ohio 32/Eastgate

- Revitalize the Anderson Township Town Center at the former Beechmont Mall site
- Provide more frequent bus service and hub development along SR 125 and US 50
- Preserve existing parks and open space, and create new parks and open space for underserved areas
- Improve north-south connectivity
- Create bike trail connections
- Minimize negative impacts of connectivity improvements and assure environmental and aesthetic sensitivity
- Preserve hillsides and visual quality of US 52 (Eastern Avenue) along the Ohio River
- Reduce flood hazards and moderate stormwater runoff

Area #6: Ohio 32/Eastgate

- Improve safety and congestion along I-275 and SR 32
- Meet ODOT macro-corridor goals for SR 32
- Preserve/enhance access to the Eastgate Mall area
- Provide coordinated framework for possible future bus and rail investments
- Provide better trip type and mode partitioning among vehicular trips in the area
- Assign more local trips to the local network to reduce demand on I-275 and SR 32
- Create pedestrian and transit friendly mixed-use development in appropriate locations in Union Township
- Plan development along Aicholtz Road between I-275 and Bach-Buxton Road with a mixed of primarily
 office and industrial uses (to the east of I-275)
- Improve connectivity
- Reduce flood hazards and moderate urban storm runoff
- Preserve parks and greenspace, and create new parks for underserved areas



1.8.2. Concerns and Expectations by Implementation Group Member

Key land use, development and transportation improvement concerns and expectations for the Eastern Corridor identified by each of the implementation partners are listed below. As noted above, these factors were jointly considered during the Tier 1 phase in guiding transportation planning efforts, developing and evaluating multi-modal alternatives, and for identifying workable alternatives and strategies for eventual implementation within the Eastern Corridor, along with environmental, engineering, performance, financial and other project considerations.

City of Cincinnati

- Improve Red Bank Road as part of the proposed SR 32 project
- SR 32 is not to be established as an interstate highway
- Relocate and reduce traffic on existing SR 561
- Evaluate future traffic issues for extended Red Bank SR 32 corridor (including side roads and intersections)
- Reduce congestion and travel times; improve air quality
- Improve access to jobs for city residents and suburbanites
- Evaluate potential for new bus service
- Evaluate Oasis line for possible bus park and ride lots and rail stations
- Preserve future transit corridors
- Incorporate city bike trail initiatives
- Design pedestrian amenities per city policies
- Design Little Miami River crossing to be environmentally sensitive and multi-modal (including rail and bike/pedestrian as well as highway/bus)
- Reduce urban sprawl
- Maximize economic development and value of the Red Bank corridor
- Mitigate impacts to the Little Miami River
- Consider urban design and aesthetics
- Involve city communities and stakeholders

Clermont County

- Establish a consolidated plan for improvements in and around the Eastgate area
- Support the county's land use vision plan and related transportation plans for the SR 32 corridor
- Consider rail freight impacts to the central and eastern parts of the county
- Consider potential bus and rail transit components in assessing needs, alternatives and physical layout in the Eastgate area
- Maintain good access to Eastgate Mall and surrounding economic development area

Hamilton County

- Provide opportunity for economic investment in eastern Hamilton County by establishing new and appropriate transportation capacity and connectivity
- Support the Eastern Corridor land use vision plan
- Integrate thoroughfare and other infrastructure plans
- Coordinate with other projects and investments



Ohio Department of Transportation

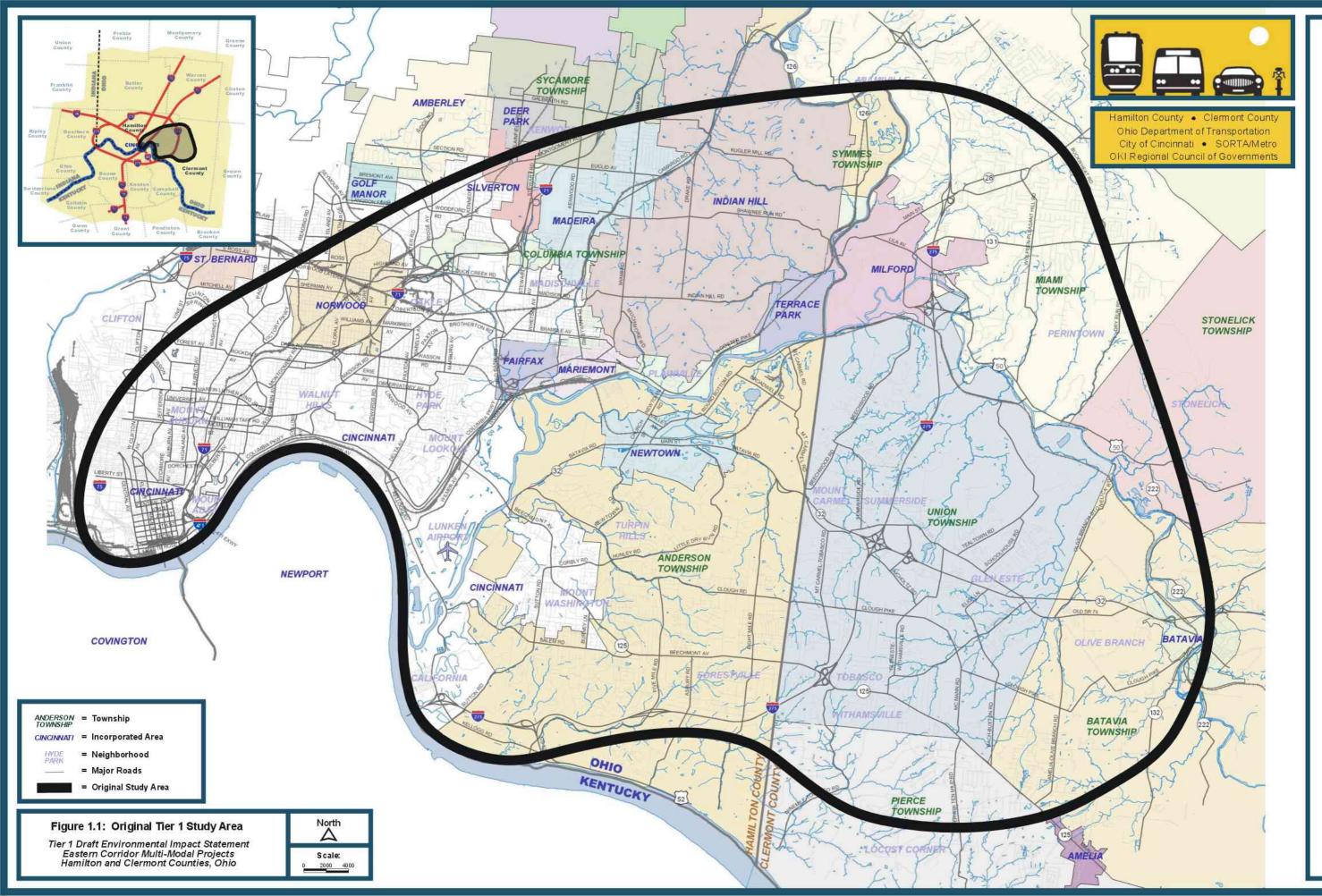
- Address, as a priority, critical highway capacity and safety needs in the Eastgate area, including the I-275/SR 32 interchange
- Implement a solution for highway capacity and connectivity needs in the SR 32/Red Bank corridor
- Plan and develop highway capacity investments with full consideration of alternative modes and multimodal opportunities
- Develop state and federal highway system investments to meet state and federal policies
- Implement Access Ohio

Ohio-Kentucky-Indiana Regional Council of Governments

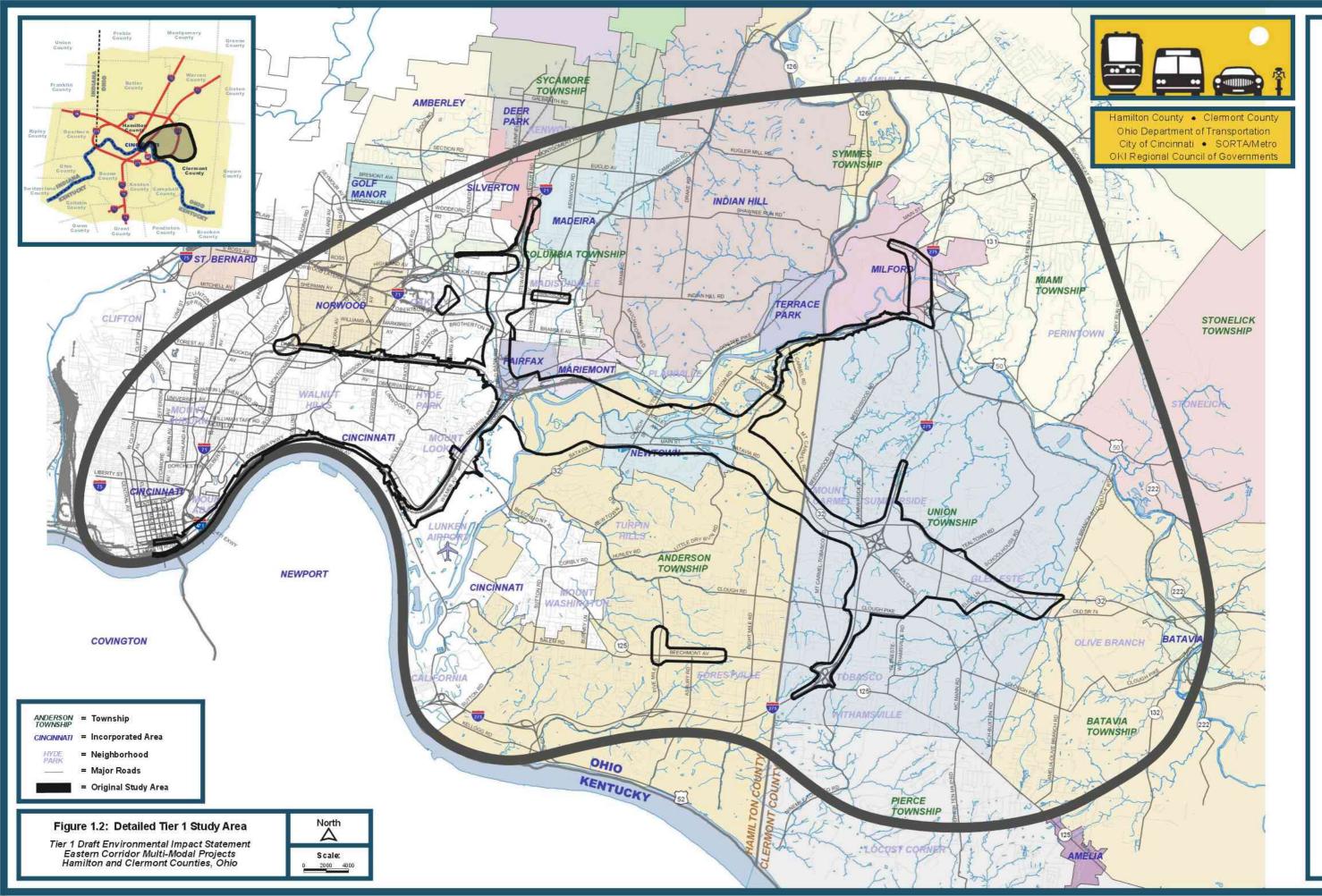
- Be consistent with adopted Long Range Plan and policies, including evolving regional land use components
- Provide a strategy that meets air quality conformity and financial constraint requirements

SORTA/Metro

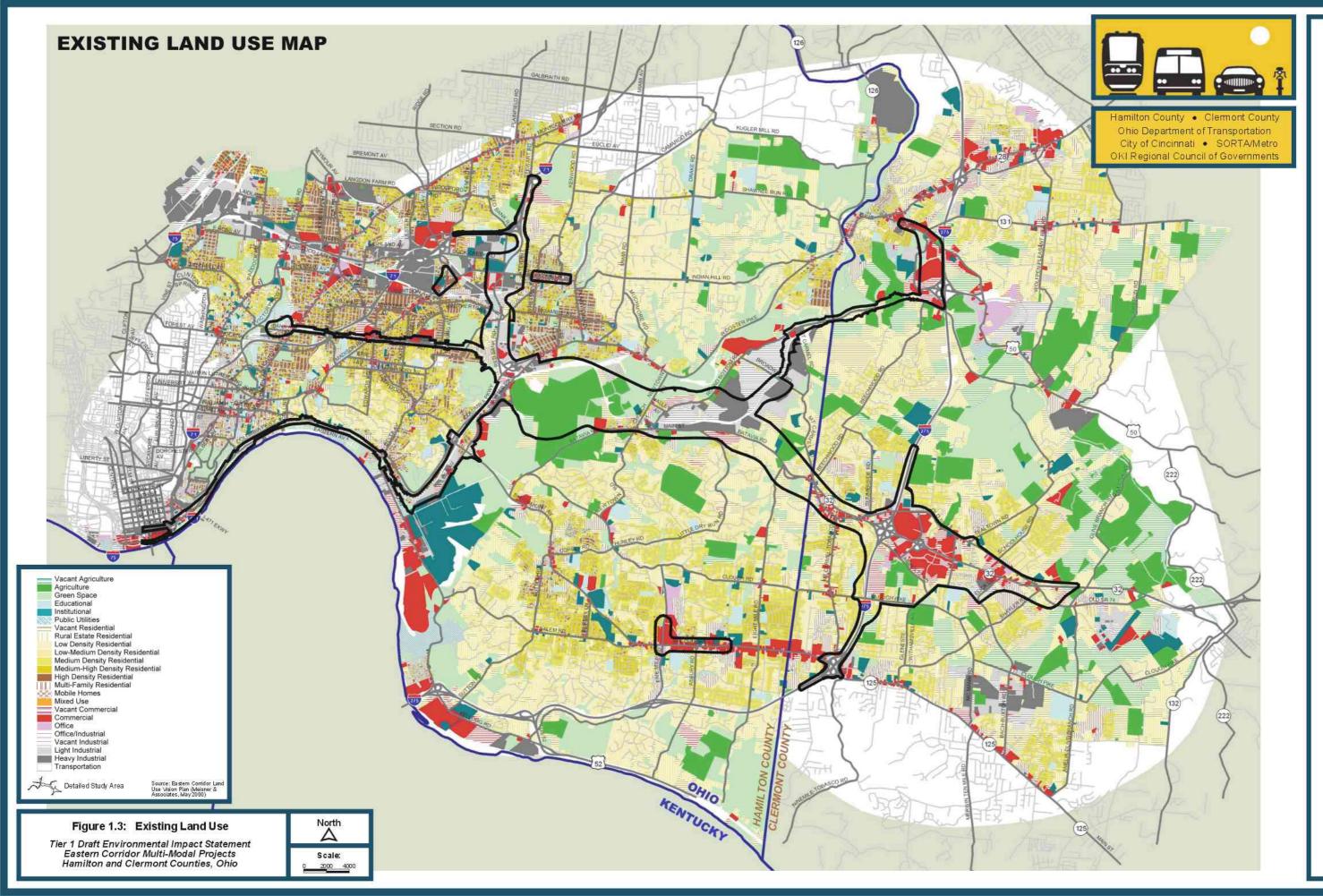
- Incorporate and expand on the strategic framework for transit service established in the MetroMoves planning effort
- Consider new bus transit hubs and crosstown bus service as well as new rail transit service
- Coordinate with the I-71 New Starts rail transit project, and assess potential for increased ridership or other cost/performance benefits that may result from expanded rail transit linkage between the I-71 and Eastern corridors



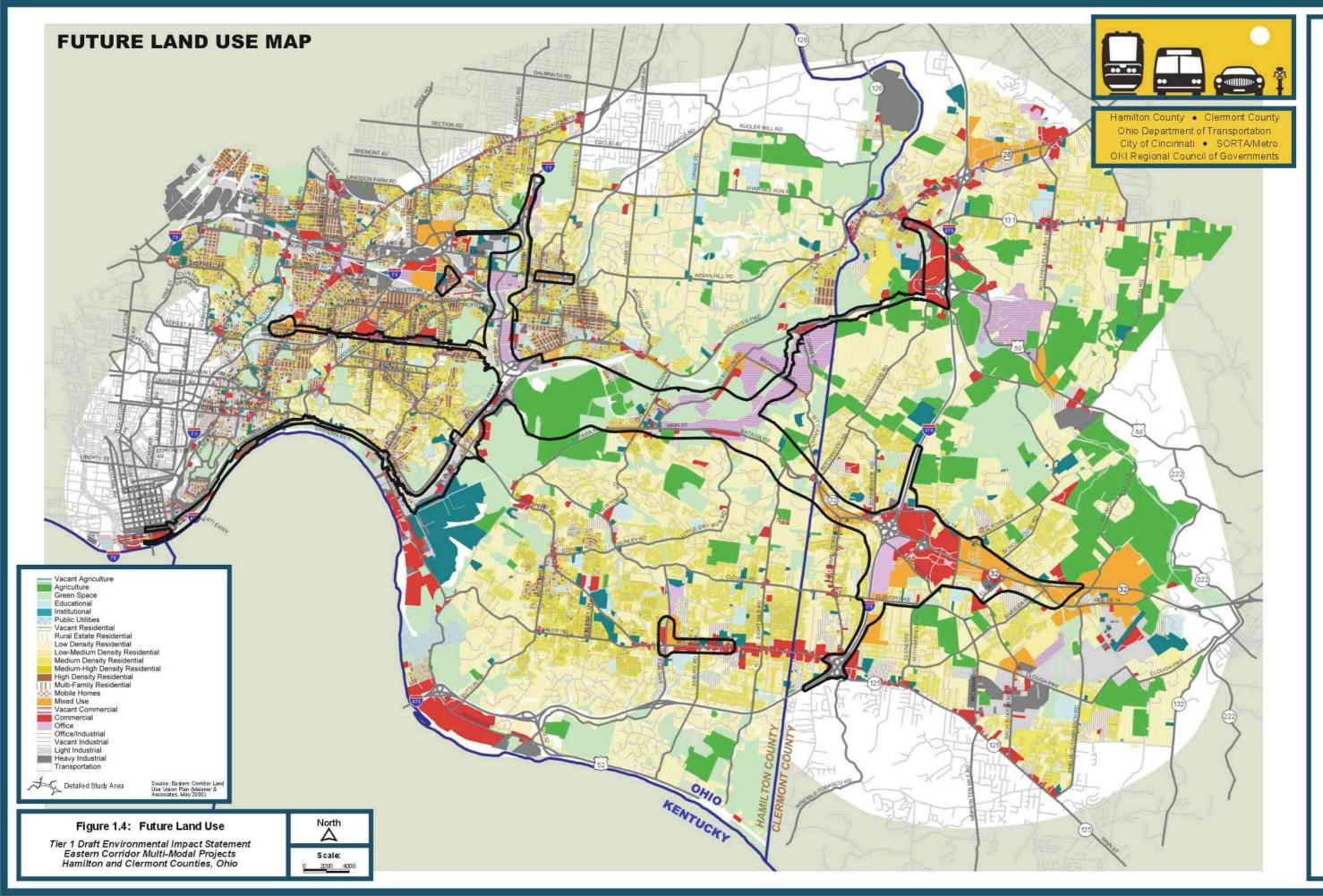
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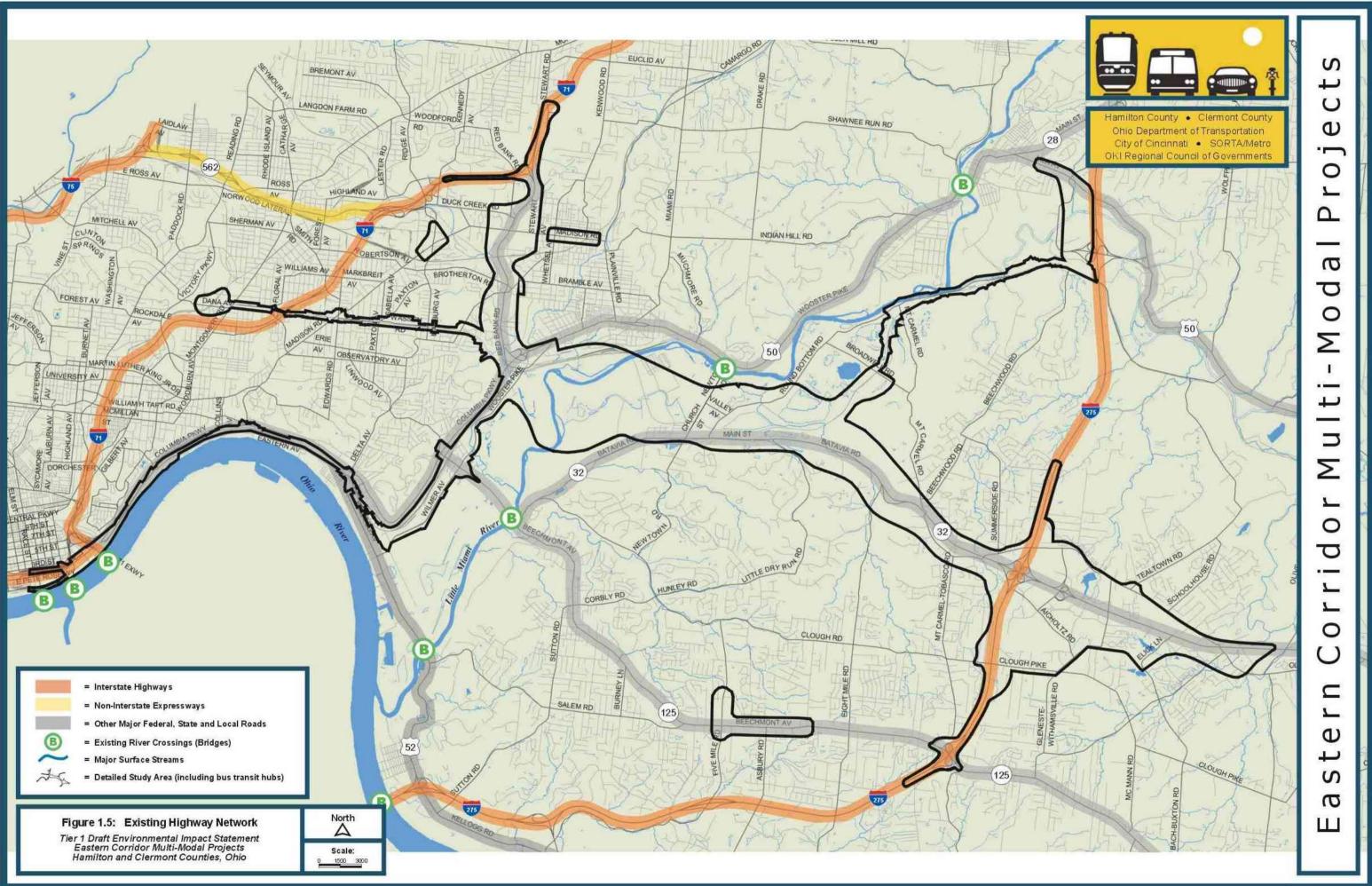
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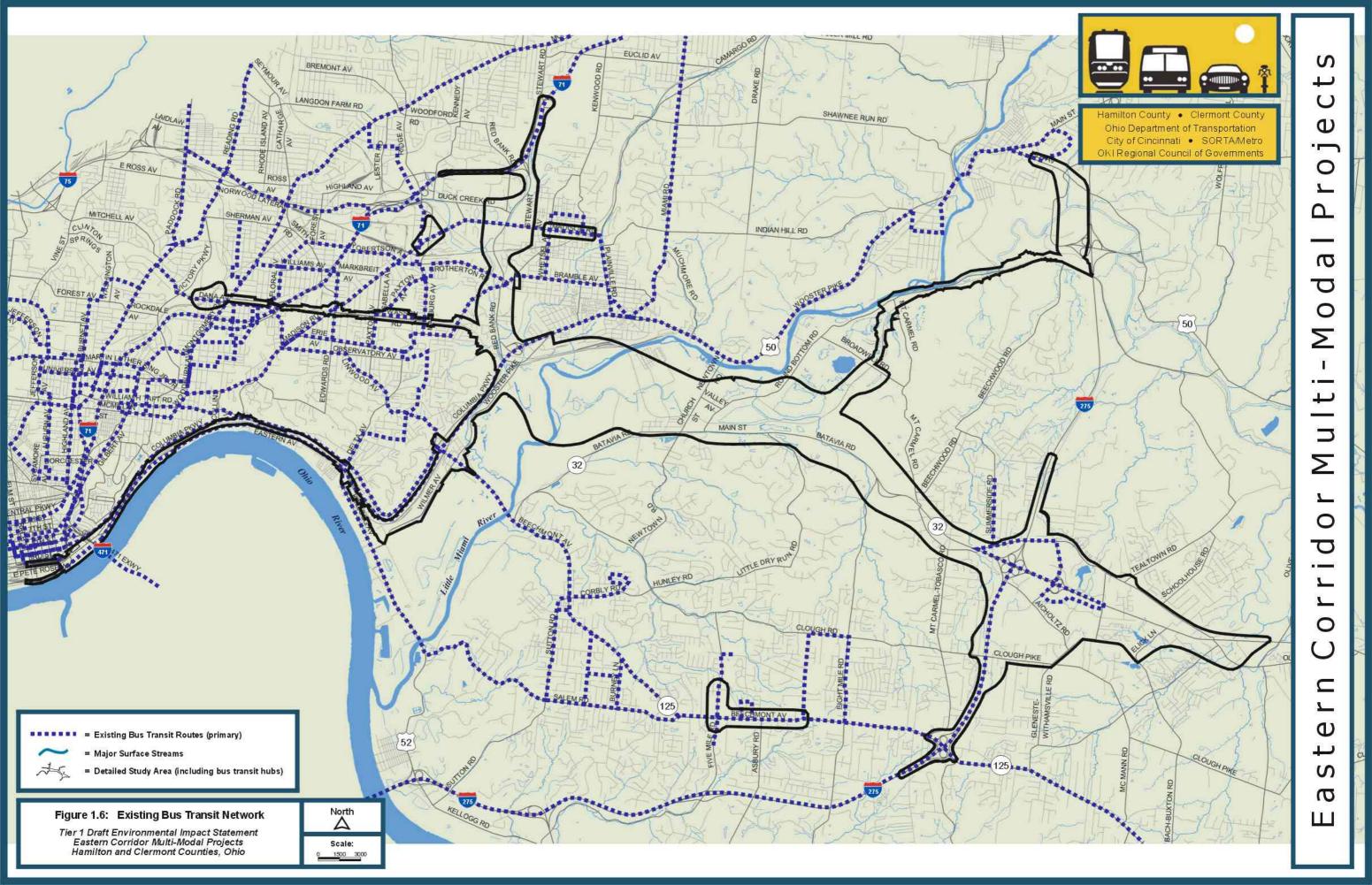


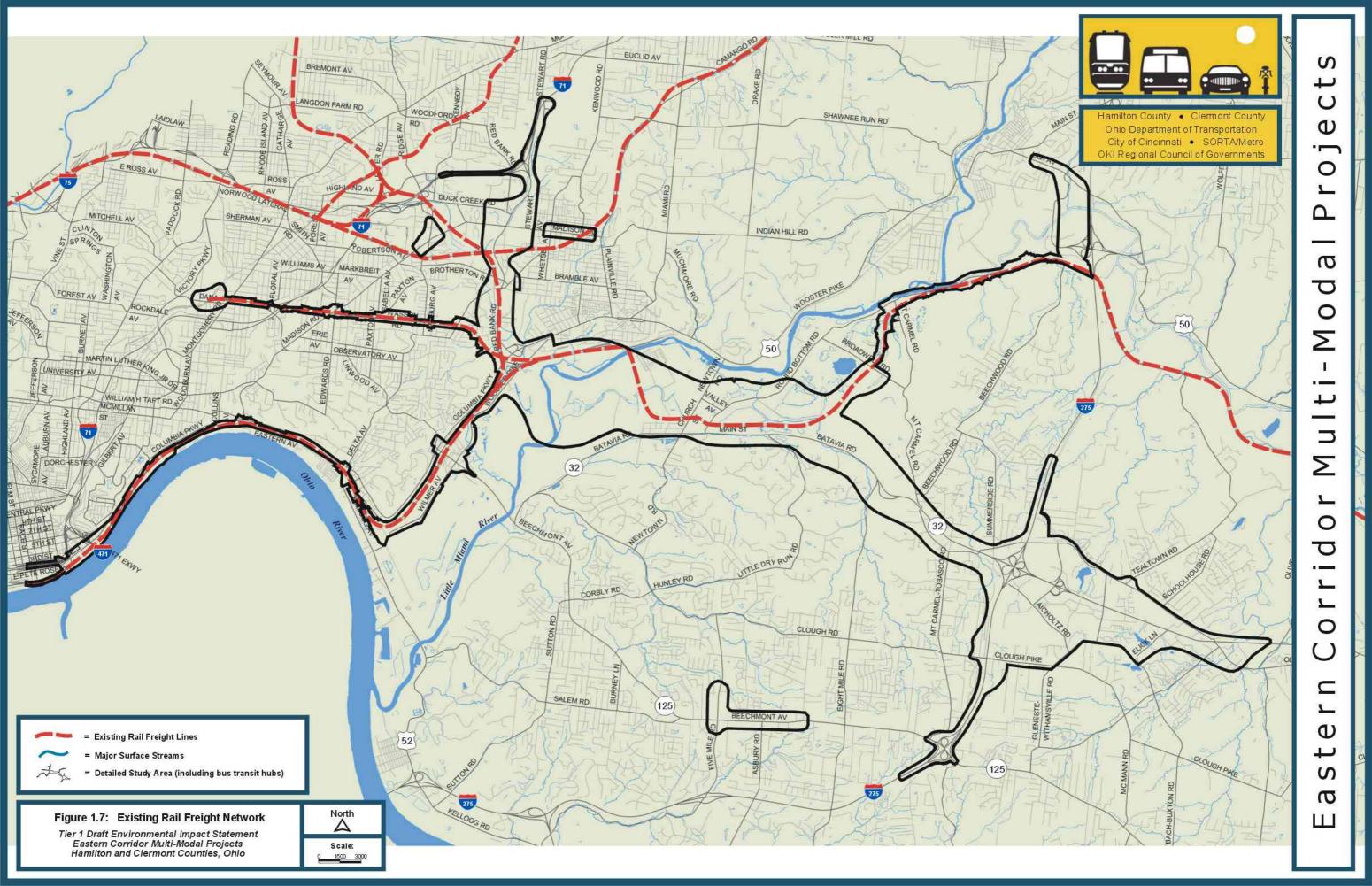
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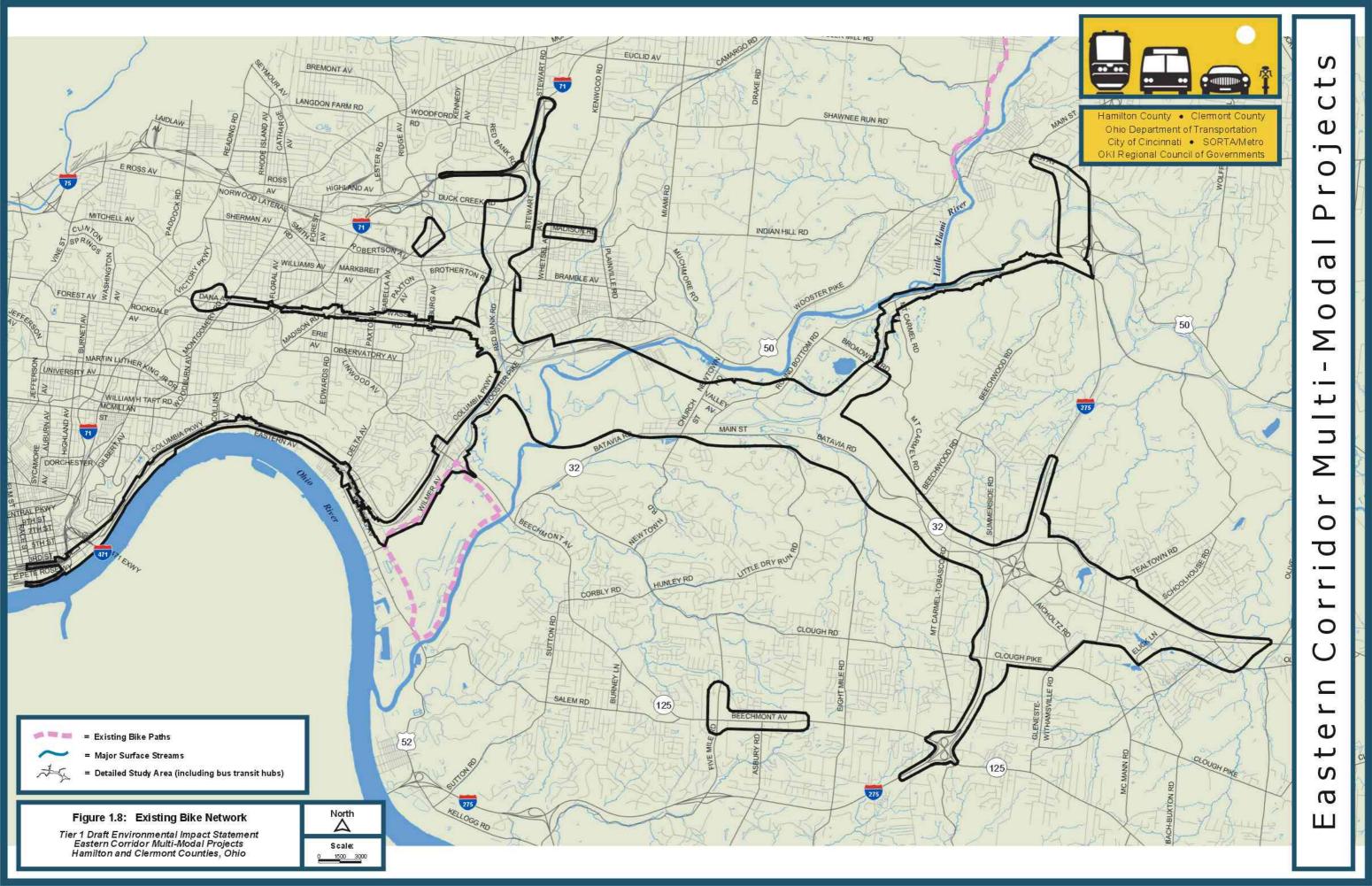


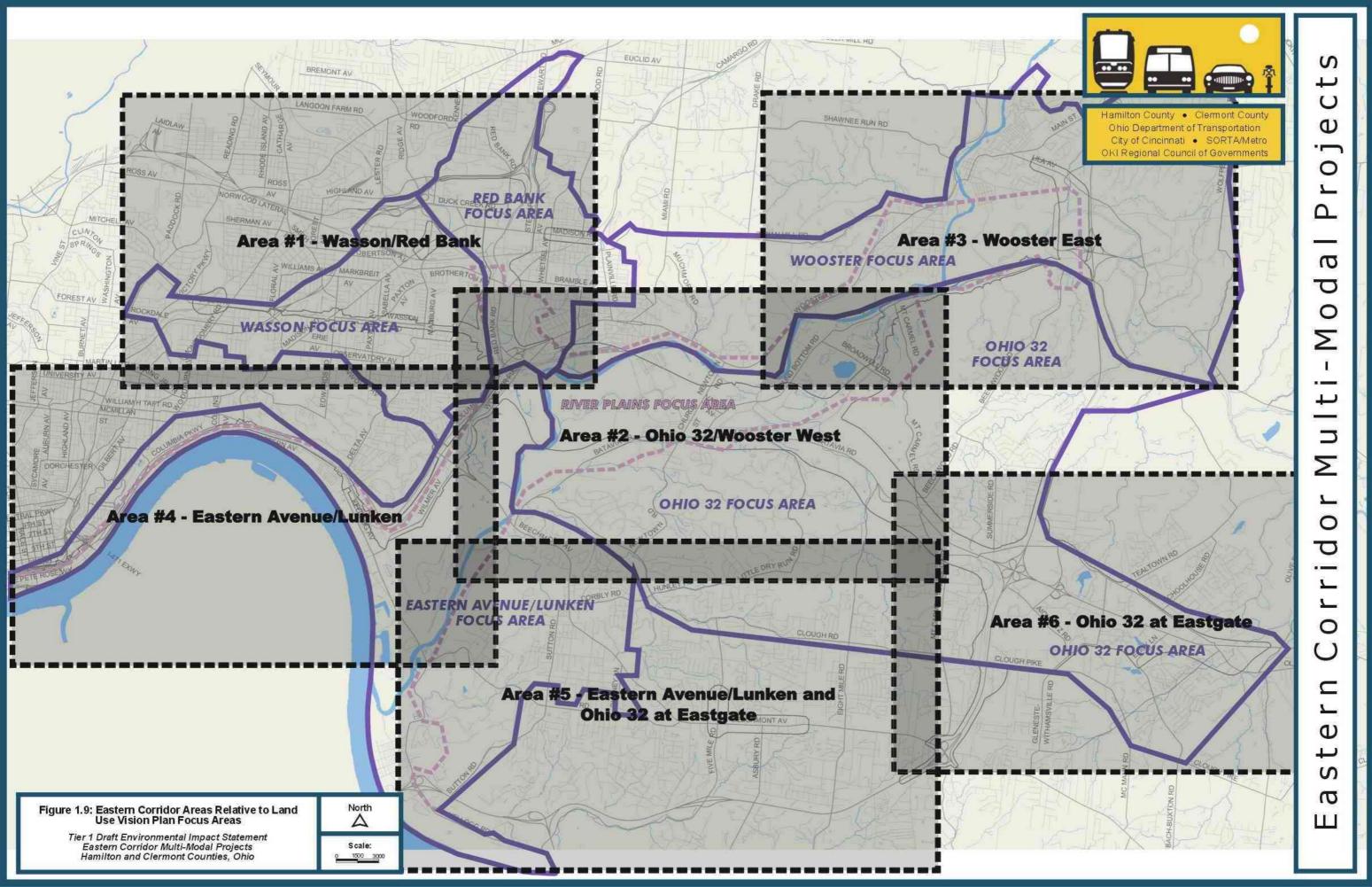
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Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

CHAPTER 2 TRANSPORTATION PURPOSE AND NEED



CHAPTER 2 TRANSPORTATION PURPOSE AND NEED

This chapter of the DEIS establishes the project purpose and need, specifically as it relates to identified transportation problems in the Eastern Corridor, social and economic growth and development in the area, and fit of the project with other state and local transportation plans.

Chapter 2 Organization

Section 2.1 presents a Summary Purpose and Need Statement for the Eastern Corridor.

Section 2.2 describes the key transportation problems and needs identified in the Eastern Corridor related to limited available transportation options, travel demand, capacity and congestion, travel delays, safety, connectivity, and population and economic growth.

Section 2.3 summarizes purpose and need elements by transportation mode, including highway, bus and rail transit, and transportation system management (TSM),

Section 2.4 describes the project as it relates to fit with state, regional and local planning efforts in the Eastern Corridor.

2.1. SUMMARY PURPOSE AND NEED STATEMENT

<u>Purpose and Need:</u> The purpose of the Eastern Corridor project is to implement a multi-modal transportation program consistent with the adopted long range plan for the region, addressing priority needs and furthering four project goals established in the Major Investment Study phase.

The need for transportation improvements in the area revolves around: a) the existing inadequate transportation network and infrastructure in the Eastern Corridor area, characterized by insufficient capacity, safety issues, and limited availability of alternative transportation options to effectively serve both current and future travel demand, b) inadequate linkage and mobility to the region's key transportation corridors and to developing social and economic centers, and c) expected future economic expansion and population growth in the project area. These basic transportation needs are further described in Chapter 2.2.

<u>Project Goals:</u> The Eastern Corridor Major Investment Study identified four goals for the project that have been carried forward into this Tier 1 work phase, including:

- Develop and implement a comprehensive, multi-modal solution for improving mobility and alleviating congestion and other transportation problems existing and expected to worsen within the Eastern Corridor area,
- Develop a transportation solution that fits with future land use in the area as identified in the Eastern Corridor Land Use Vision Plan (Meisner and Associates, May 2002),



- Develop a transportation solution that supports and provides sustenance to the regional economy, and
- Develop a transportation solution that is consistent with larger environmental goals for the Eastern Corridor region, including minimization of impacts to neighborhoods, greenspace, water quality, streams, hillsides, aesthetics, habitat, historic and archaeological features, minimization of noise impacts, minimization of hazardous materials risk, and conformity with air quality.

These project goals were considered in the Tier 1 work program for guiding detailed planning efforts, developing and evaluating multi-modal alternatives, and for identifying feasible alternatives and strategies for eventual implementation within the Eastern Corridor.

2.2. TRANSPORTATION NEEDS IN THE EASTERN CORRIDOR

2.2.1. Travel Demand

Regional travel demand modeling (RTDM) was conducted for the project using the OKI/Miami Valley Regional Planning Commission Regional Travel Demand Model Version 6.0. Modeling results to date are described below.

Existing and Projected Traffic: Many key roads in the existing Eastern Corridor roadway network have current traffic volumes in excess of capacity, resulting in below-standard Level of Service (LOS) and safety problems. RTDM results indicate that No Build average daily traffic volumes on interstates I-71, I-275 and I-471, and many of the main roadways in the area will increase over current conditions by the planning Year 2030, as summarized in Table 2.1.

Key Location	AI			
	Existing / 1995	No Build / 2030	Percent Change	
I-71				
W of Red Bank Road	97,000	123,800	28%	
E of Red Bank Road	122,600	151,300	23%	
Red Bank Road				
S of Madison Road	22,100	22,100	0%	
N of Madison Road	32,100	31,600	-2%	
N of US 50	18,000	18,400	2%	
Existing SR 32				
W of Newtown Road	12,200	16,700	37%	
E of Newtown Road	13,400	16,200	21%	
W of Gleneste Road	48,200	71,400	48%	
Newtown Road				
N of existing SR 32	3,700	6,700	81%	
S of existing SR 32	4,900	6,000	22%	

Table 2.1. Projected Changes in Average Daily Traffic (ADT) At Key Locations ^[1]



Key Location	A	ADT			
	Existing / 1995	No Build / 2030	Percent Change		
Beechmont Avenue (SR 125)					
W of SR 32 levee	49,700	55,000	11%		
US 50					
W of Newtown Road	30,300	26,200	-14%		
E of Newtown Road	13,800	12,000	-13%		
E of Torrence Parkway	24,900	44,300	78%		
I-471					
On Ohio River bridge	88,800	102,600	16%		
I-275					
S of US 50	62,500	92,300	48%		
N of SR 125	63,800	88,800	39%		
On Ohio River bridge	74,700	109,700	47%		
SR 561 (Linwood Avenue)					
N of Delta Avenue	20,000	22,700	14%		
S of Delta Avenue	31,700	36,100	14%		

Table 2.1. Projected Changes in Average Daily Traffic (ADT) At Key Locations ^[1]

⁽¹⁾ Source: OKI Regional Travel Demand Model preliminary output; 2030 No Build consists of the Year 2030 Existing + Committed (E + C) network of facilities and service, i.e., the existing roadway and transit network, plus committed regional and state improvements.

Existing and future average daily traffic for existing roads in the Eastern Corridor are depicted on Figures 2.1a and 2.1b, respectively. In addition, truck traffic is expected to increase by 30 to 90 percent on major roads in the Eastern Corridor by the Year 2030, as shown in Figure 2.2.

Existing Commute Patterns: Job-related commuting patterns in the OKI Metropolitan Region, based on U.S. Census data, indicate that the second largest commute in the Cincinnati metropolitan area is from Clermont County in the Eastern Corridor to jobs located in Hamilton County and downtown Cincinnati, as shown in Figure 2.3. Existing travel patterns in the Eastern Corridor, based on 1995 origin-destination survey results reported in the Eastern Corridor MIS, showed that: a) there is significant travel in the Eastern Corridor in both the north-south and eastwest directions, and b) about 50 percent of trips in the Eastern Corridor during peak periods were local, with both origin and destination within the corridor, while the other 50 percent of trips were external, with either the origin or destination within the Eastern Corridor. These travel patterns result in a crossing configuration, in which traffic through the Eastern Corridor is in conflict with heavy local travel within the corridor.

<u>Future Travel:</u> Projected 2030 travel demand, depicted as a percentage and general direction of all trips beginning or ending in the Eastern Corridor area regardless of mode or route, is shown on Figure 2.4. In general, internal, local travel is expected to comprise the greatest percentage - about 36 percent - of total trips beginning or ending in the Eastern Corridor by the Year 2030, with trips into Hamilton County and downtown Cincinnati expected to comprise the second greatest percentage - about 33 percent - of total travel in and through the area. Overall, more than one million trips will begin or end every day in the Eastern Corridor area by the Year 2030. This distribution, as shown on Figure 2.4, does not include trips that begin and end outside the corridor,



but that travel through the corridor. The overall projections reported as traffic volumes or transit ridership do, however, account for these external trips.

<u>Transit Use:</u> Less than 1 percent of travel is currently made by transit in the Eastern Corridor, with more than 99 percent made by car or truck, as depicted on Figure 2.5. This small share of transit use contributes to the overall capacity and congestion problems in the area, and increased transit use would serve to address peak travel demand in the area more effectively.

2.2.2. Capacity and Congestion

<u>Level of Service:</u> Level of Service (LOS) is a qualitative measure of traffic conditions taking into account the effect of a number of factors such as traffic volumes (including trucks), speed (design and actual), travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience and operating costs. The LOS rating is based on a scale ranging from "A" for free-flowing traffic (best travel conditions) to "F" which indicates highly congested conditions, with an LOS of "C" being the generally accepted standard.

Many of the key highways in the Eastern Corridor (such as the section of Red Bank Road shown to the right) currently have high traffic volumes and are operating at or below acceptable levels of service. LOS analyses conducted for the Year 2020 planning horizon (reported in the Eastern Corridor MIS) indicate that much of the key roadway network in the Eastern Corridor will be operating at a LOS below C under a No Build scenario, with many segments operating at a LOS of E or F.



Roadway conditions along portions of Red Bank Road in the Eastern Corridor

Road segments in the Eastern corridor with expected LOS's of E or F (below acceptable standard) under a Year 2020 No Build scenario are graphically depicted on Figure 2.6 and listed in Table 2.2.

Table 2.2. Year 2020 No BuildBelow-Standard Level of Service (LOS) Segments ^[1]
Highway Segment with LOS of E or F (Below-Standard)
SR 32: SR 125 (Beechmont Avenue) to of north Clough Pike
SR 32: Newtown Road to east project terminus
SR 125 (Beechmont Avenue): US 50 to Burney Lane
SR 125 (Beechmont Avenue): Salem Road to west of Eight Mile
SR 125: I-275 to Bach-Buxton Road
Newtown Road: US 50 to SR 32
Red Bank Road: I-71 to US 50
US 50 (Columbia Parkway): I-71 (downtown Cinc.) to Delta Avenue
US 50 (Columbia Parkway/Wooster Pike): SR 125 to Newtown Rd
US 50 (Wooster Pike): LMR bridge (Milford) to Main Street



Table 2.2. Year 2020 No BuildBelow-Standard Level of Service (LOS) Segments ^[1]

I-275: SR 28 (Milford) to SR 32

I-275: US 52 (Kellogg Road) to Five Mile Road

Clough Pike: East and west of Five Mile Road

Clough Pike: East and west of Eight Mile Road

Cough Pike: Mt. Carmel-Tobasco Road to I-275

^[1] Source: Eastern Corridor Major Investment Study (April 2000) and OKI Regional Travel Demand Model (RDTM) preliminary output; preliminary RDTM output confirms that the LOS data presented in Table 2.2 will be similar or worse by 2030.

<u>Congestion</u>: Since many of direct arterial routes through the Eastern Corridor area have limited capacity, most trips through the corridor (including trips to the Cincinnati Central Business District) are increasingly being carried by the two interstate highways in the area, including I-275 and I-471. As a result, these interstates are reaching or exceeding capacity and experiencing congestion during peak hours.



Congested conditions along I-275 and I-471 in turn result in a predictable trickle-down effect on local routes within the Eastern Corridor, including SR 125, SR 32, US 50 and Clough Pike. Currently, portions of these key roads exhibit stop-and-go or bumper-to-bumper conditions during peak travel periods, such as SR 32 as shown in the photo to the left. In general, these routes are expected to be operating at below acceptable Levels of Service. As traffic volumes continue to increase as projected, i.e., by the 2030 planning horizon year, LOS conditions will

continue to worsen. Overall, the duration of congestion, the severity of congestion and the extent of congestion are all increasing in the Eastern Corridor.

Key constraints within the Eastern Corridor that contribute to the congestion problem include ineffective routing and connectivity for current travel patterns, existing commercial and residential development along existing key routes in the study area, and the limited existing river crossings in the area.

In general, most of the main routes in the area either are not oriented toward efficient travel (general direction or connections), or are constrained in capacity and effectiveness. For example, although there is a need to expand existing SR 32 to multi-lane capacity, existing community development constrains highway widening within the Village of Newtown, where numerous homes and businesses would be expected to be affected. Similarly, the Village of Mariemont is built up around US 50 in a boulevard-type setting that effectively prohibits significant widening of the existing roadway.



Congestion and traffic bottlenecks occur at existing bridges over the Little Miami River, including the Beechmont Levee bridge, which carries traffic from both SR 32 and SR 125, and the Newtown

Road bridge. The Newtown Road bridge, shown in the photo to the right, is a two-lane, near capacity structure. It serves various travel sheds, including areas east of Newtown along SR 32 to locations via US 50 in and north of Mariemont.

The two existing Ohio River bridges at I-471 and I-275 provide important links between downtown Cincinnati and the Eastern Corridor. However, the circumferential travel pattern and time required to use these structures from points at the core of the Eastern Corridor do not substantially alleviate the congestion situation in the area or provide a long-term solution. The resultant long travel

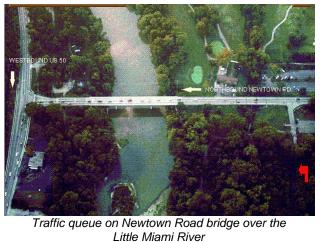


Photo: OKI Eastern Corridor Inventory of Recurring Congestion (Fall 1995)

routes that dominate the eastern part of the Cincinnati metropolitan area contribute to increases in Vehicle Miles Traveled (VMT) and related actions such as increased fuel consumption, travel time and emissions.

2.2.3. Travel Times/Delays

Shown on Figure 2.7 are the current approximate limits of a 45-minute driving commute to downtown Cincinnati during peak hours. This information shows that, despite Clermont County's relatively close location to downtown Cincinnati, it generally takes longer to travel to western Clermont County (through the Eastern Corridor) than many parts of Butler and Warren counties or several counties in northern Kentucky.

Existing and projected No Build travel performance for the Eastern Corridor area and the overall OKI region (including the Eastern Corridor) from Regional Travel Demand Modeling results are presented in Table 2.3.

	0			
	Eastern Co	rridor	OKI Region	
	1995	2030	1995	2030
Person Trips	463,283	507,995	5,400,523	6,668,683
Car Person Trips	451,582	496,642	5,331,545	6,597,573
Transit Trips	11,701	11,353	65,267	71,110
Transit Share	2.5%	2.2%	1.2%	1.1%
Vehicle Hours of Travel	166,543	310,211	1,017,691	1,776,566
Change from 1995 Base (VHT)		86%		74%
Vehicle Hours of Delay	21,706	132,904	143,571	507,265
Change from 1995 Base (VHD)		512%		253%
Vehicle Miles of Travel	6,494,357	8,110,810	38,742,002	57,150,298

 Table 2.3. RTDM Existing and Projected No Build Travel Performance ^[1]



	Eastern C	orridor	OKI Regio	on
	1995	2030	1995	2030
Change from 1995 Base (VMT)		25%		47%

Table 2.3. RTDM Existing and Projected No Build Travel Performance [1]

Overall, time spent in existing and future expected traffic delays are expected to increase by over 500 percent within the Eastern Corridor and 250 percent in the OKI region by the Year 2030 planning horizon. This reduces the productivity of both individuals and business, decreases work time, and increases delivery time for goods and services. Additionally, traffic delays increase operating and maintenance costs for automobiles, trucks and heavy equipment (increased fuel costs, repair costs from start-and-stop driving). Furthermore, employment opportunities, particularly for low-income families in the Eastern Corridor, are lessened as affordable and practical transportation to potential jobs outside the immediate area are reduced.

2.2.4. Safety Issues

As described above, traffic volumes on key roadways in the Eastern Corridor study area are

expected to increase in the future (see Table 2.1) and Levels of Service are expected to worsen (see Table 2.2). In addition to these capacity and congestion problems, many of the existing arterials within the study area exhibit physical and geometric deficiencies, which have a detrimental effect on safety. These deficiencies include inadequate intersections, steep grades and poor sight distances, narrow pavement widths, restricted turning radii, poor alignment, restrictive topography, narrow shoulder and steep ditches, substandard



interchange geometry, pedestrian conflicts, access conflicts and at-grade rail crossings. The results of these deficiencies, combined with increasing traffic volumes and congestion, has been a decline in transportation safety in the study area.

An analysis of traffic accident data for the project is presented in the *Eastern Corridor Traffic Accident Data Summary Report* (Bake American, June 2002). This analysis evaluated traffic accident data provided by the Ohio Department of Public Safety for the portions of Hamilton and Clermont Counties occurring in the Eastern Corridor for the years 1998, 1999 and 2000.

Overall, accident information indicates that the existing roadway network in the Eastern Corridor cannot safely handle existing traffic demand. Ultimately, as expected population and economic expansion adds additional demand to the roadway network (see Chapter 2.2.7), travel safety is expected to further deteriorate in the area. Key accident information for the Eastern Corridor is summarized below.



<u>Roadway Accidents:</u> Table 2.4 presents a breakdown of accident data for nine major roadways in the Eastern Corridor, and Figure 2.8 depicts a graphical representation of this accident data by roadway segment.

	1998 - 2000 Accidents						
Roadway	Property	Injury	Fatality	No Report	Total	Accident Rate ^[2]	Statewide Ave. Rate for Similar Facilities
US 50 (Downtown Cinc. to E Project Term.)	1018	375	6	4	1403	0.6 to 8.5	1.78 to 1.92
SR 32 (S of US 50 to E Batavia Corp. Limits)	1008	527	1	1	1537	0.5 to 7.4	0.87 to 1.63
I-275 (Wards Corner Rd to Co. Line) *	787	274	3	0	1064	0.5 to 3.1	0.59
Clough Pike (SR 32 to SR 132)	497	275	2	0	774	3.3 to 7.9	2.41
Round Bottom Rd (SR 32 to US 50)	85	45	0	0	130	3.2 to 9.4	3.20
Red Bank Rd (I-71 to US 50)	187	78	0	0	265	1.4 to 3.1	1.92
Newtown Rd (US 50 to Clough Pike)	82	31	0	0	113	1.1 to 3.5	2.41
Valley Ave (Newtown Rd to Round Bottom Rd)	8	4	0	0	12	n/a	1.43
Old SR 74 (Co. Line to Old SR 74 Term.)	317	173	2	1	493	5.1	1.43
Total:	3989	1782	14	6	5791		

Table 2.4. Accident Data by Major Roadway in the Eastern Corridor ^[1]

^[1] Source: Ohio Department of Public Safety, 1998 – 2000

^[2] crashes/M vehicle-miles; roadway segments with higher than statewide average accident rates are shaded green on Figure 2.8

* indicates that this roadway section has been recently improved

A total of 5,791 accidents occurred within the Eastern Corridor over the three-year period from 1998 to 2000, 3,989 of which involved property damage only, 1,782 of which involved personal injury and 14 of which involved fatalities. This equates to an average of 5.3 accidents in the Eastern Corridor every day for three years, not including the many other roads in the area that were not part of the nine main roads evaluated.

Overall, 84 percent of the roadway segments evaluated in the Eastern Corridor exceeded the statewide accident average for the study period, based on comparison to the same types of facilities throughout the state. Of the total number of accidents occurring in the area, over half

occurred on US 50 and SR 32 and almost 20 percent occurred on I-275. About 80 percent of total accidents occurred Monday through Friday, about 42 percent occurred during the morning and afternoon rush hours, and about 67 percent involved two vehicles only. Of the total 5,971 accidents on these major roadways, going straight (3583 accidents), turning left (583 accidents) and stopped-in-traffic (364 accidents) were the top three pre-accident actions reported (Ohio Department of Public Safety, 1998-2000).



Intersection Accidents: Approximately one third of all

accidents occurring in the Eastern Corridor area between 1998 and 2000 were at intersections or interchanges. Twenty-eight locations, as summarized in the table below and depicted on Figure 2.9, accounted for over half of these intersection accidents. Of the total accidents occurring at



these 28 locations, intersections along SR 32 accounted for more than 33 percent of the total, intersections along US 50 and Clough Pike accounted for 14 percent each of the total, and 13 percent of the total occurred at Red Bank Road intersections. The highest three year total number of accidents occurred at the intersection of SR 32 and Eastgate Boulevard, with the SR 125 interchange at I-275 ranking second.

		1998 - 2000 Accidents				
Rank	Roadway	Property	Injury	Fatality	Total	
1	SR32 and Eastgate Boulevard	59	37	0	96	
2	I-275 and SR125 Interchange *	64	24	0	88	
3	SR32 and Gleneste-Withamsville Road	43	42	0	85	
4	I-275 and SR28 Interchange *	53	22	0	75	
5	SR32 and Elick Lane	32	30	0	62	
6	Clough Pike and Wolfangle Road	40	21	0	61	
7	Red Bank Road and Madison Road	41	13	0	54	
8	US50 and Delta Avenue	31	15	0	46	
9	I-275 and SR32 Interchange	34	6	0	40	
10	US50 and Walton Creek	23	15	1	39	
11	Clough Pike and Five Mile Road	20	12	0	32	
12	Red Bank Road and Duck Creek Road	26	4	0	30	
13	Old SR74 and Amelia-Olive Branch Road	16	9	0	25	
13	Red Bank Road and Brotherton Road	18	7	0	25	
14	I-71 and Red Bank Road Interchange	12	8	0	20	
14	SR32 and Eight Mile Road	12	8	0	20	
14	SR32 and Newberry Drive *	9	11	0	20	
15	US50 and Stanley Avenue	13	6	0	19	
15	US50 and Hoge Street	17	2	0	19	
16	Clough Pike and Gleneste-Withamsville Road	10	8	0	18	
16	SR32 and Bells Lake	12	6	0	18	
17	SR32 and Round Bottom Road	11	6	0	17	
18	Clough Pike and Eight Mile Road	9	7	0	16	
19	Clough Pike and Wuebold Lane	7	8	0	15	
19	I-275 and US50 Bypass Interchange *	10	5	0	15	
19	Old SR74 and Eastgate Boulevard	7	8	0	15	
19	SR32 and Mount Carmel Tobasco Road	9	6	0	15	
19	US50 and Wolfpen Road	7	8	0	15	
	Total:	645	354	1	1000	
* indicate	es that this intersection has been recently improved					

<u>Current Trends in Accident Data:</u> Since completion of the June 2002 traffic accident study, the most recent available traffic accident data (years 2001 and 2002) for the nine major roadways presented in the Eastern Corridor Traffic Accident Data Summary Report (Bake American, June 2002) were analyzed. This level of effort allowed for comparison with accident data from the



previous years 1998 through 2000, and identifies trends that might be evident over the five-year period from 1998 through 2002. The following table is a summary of the total number of accidents on each of the nine major roadways for the five-year period from 1998 through 2002.

	Accidents Per Year					
Roadway	1998	1999	2000	2001	2002	Total
US 50 (Downtown Cincinnati to E Project Terminus)	486	470	447	556	502	2461
SR 32 (S of US 50 to E Batavia Corporation Limits)	539	508	490	582	612	2731
Old SR 74 (Clermont Co Line to Old SR 74 Terminus)	181	128	184	212	238	943
I-275 (All Clermont Co to MP 73 in S Hamilton Co)	477	506	454	504	584	2525
Newtown Road (US 50 to Clough Pike)	46	35	32	37	47	197
Clough Pike (SR 32 to SR 132)	265	240	269	266	246	1286
Round Bottom Road (SR 32 to US 50)	41	36	53	69	38	237
Valley Avenue (Newtown Road to Round Bottom Road)	6	3	3	5	0	17
Red Bank Road (I-71 to US 50)	100	93	72	97	83	445
Total Accidents Per Year All Roadways Combined:	4139	4018	4004	4329	4352	

Table 2.6. Current Trends in Accident Data (1998 – 2002)

Over the five-year period from 1998 to 2002, five of the nine major roadways studied had an increase in number of accidents. Overall, the largest five-year increase in accident numbers occurred on Old SR 74 (six percent increase), followed by I-275 (a four percent increase) and SR 32 (a three percent increase). In 2001, US 50 had a considerable spike in the number of accidents compared to the other years studied, particularly compared to 1998 through 2000. Similarly, I-275 experienced considerably more accidents in 2002 compared to other years studied. The highest single-year accident total occurred on SR 32 in 2002 with 612 accidents reported. Accidents involving fatalities occurred most frequently on US 50 and I-275. Four fatal accidents were reported in 1999 and again in 2001 on US 50. Four fatal accidents were also reported on I-275 in 2001. Newtown Road, Valley Avenue, and Red Bank Road are the only three roads of the nine major roadways studied that have not experienced any fatalities over the five-year period (1998 through 2002).

2.2.5. Limited Transportation Options

The existing transportation infrastructure in the Eastern Corridor is predominantly highway based. This existing highway network was primarily established between the 1960's and the 1980's, and no major capacity improvements have been undertaken since. Many roads in the area are currently congested and provide a low Level of Service and compromised safety. In addition, bottlenecks occur at existing bridge crossings over the Little Miami River for travel to/from Cincinnati and most of Hamilton County to eastern points in the study area within Clermont County. While the two existing Ohio River bridges at I-471 and I-275 help alleviate these bottlenecks to some extent, the long travel routes and time required to utilize these structures from points at the core of the Eastern Corridor does not substantially alleviate the problematic situation.

Furthermore, although existing bus transit routes occur in the vicinity, there are notable locations within the Eastern Corridor that currently have no bus service. No rail transit transportation option is available in the study area, and bikeway corridors are currently limited in availability and connectivity, and cannot provide a functional transportation option for commuters.



The end result of the existing inadequate highway network in the Eastern Corridor, combined with the lack of alternative transportation options, is a notable decline in transportation mobility and efficiency, and decreased accessibility to regional, state and national destinations.

2.2.6. System Linkage and Regional Connectivity

Transportation improvements are needed in the Eastern Corridor to provide better linkage between

the area's economic centers and developing residential areas. One of the primary ways of improving linkage and connectivity is by improving connections to the interstate system. The Eastern Corridor area of Clermont County is currently the only Cincinnati suburb area that is not directly connected by interstate highway to the employment and economic core of Cincinnati and Hamilton County. Subsequently, the commuter traffic west towards Cincinnati and the reverse commuter traffic east towards Clermont County, as well as the transport of goods and services between the Cincinnati/Hamilton County and Clermont County areas, are forced to use the substandard local roadway network or to use



caused by truck traffic Photo: OKI Eastern Corridor Inventory of Recurring Congestion (Fall 1995)

local road connections to limited interstate access points along I-275. Since alternative transportation options are not readily available in the area, the result is a breakdown in the existing local road and highway system linkage, regional connectivity and the effective movement of goods and services both locally and regionally (as shown in the photo above).

2.2.7. Population and Economic Growth and Development

<u>Economic and Workforce Development:</u> Population and employment growth trends occurring in the Eastern Corridor are shown on Figure 2.10. In general, population in the area is expected to increase from about 221,000 persons in 1995 to about 236,000 persons by the year 2030 (an estimated 7 percent increase). Employment in the area is also expected to increase, from an estimated 103,000 persons employed in 1995 to about 122,000 employed in the area by the year 2030 (a 19 percent increase).

Major economic centers occur throughout the Eastern Corridor, as depicted on Figure 2.11, and include (listed from west to east): the Cincinnati Central Business District, the University of Cincinnati area and adjacent hospitals, Xavier University, Lunken Airport, the communities of Norwood, Oakley, Madisonville, Hyde Park, Mariemont, Fairfax and Newtown, the Ancor industrial area, Anderson Township, Milford and the Eastgate area. Major employment centers in the Eastern Corridor are also shown on Figure 2.11 and include the commercialized areas along Beechmont Avenue (west portion of study area), the industrial areas in Newtown (center of study area), the rapidly developing commercial/office park areas on SR 32 east of Eastgate Mall and I-275, the Batavia area (east end of study area), and large areas in parts of Cincinnati, Fairfax and Milford. A cooperative program between Clermont County and the City of Cincinnati is currently



targeted at training and connecting persons seeking jobs with unfulfilled jobs occurring in established economic centers in the area, as shown on Figure 2.12. Many of these unfulfilled jobs occur in western Clermont County.

Transportation improvements, particularly the development of multi-modal options, are needed in the Eastern Corridor area to support workforce development and provide more effective regional connection of jobs and people, especially for the non-driving public. Transportation improvements are also needed to better link economic centers in the Eastern Corridor for more efficient movement of goods and services within and through the area.

<u>Urban Revitalization</u>: The revitalization of Ohio's urban areas to comply with Governor Taft's recent Urban Revitalization Initiative (April 2000) is needed in the City of Cincinnati. Transportation improvements in the Eastern Corridor, especially effective multi-modal investments, are expected to result in increased demand for inner-city and older suburb housing, as well as create new demand for housing linked to transportation enhancements, and will, therefore, effectively enhance the Cincinnati urban core and support Governor Taft's policy agenda.

In addition, numerous innerbelt brownfield areas have been identified in the Eastern Corridor, as shown on Figure 2.13. These areas are targeted for redevelopment by many groups and local governments. One site in the Eastern Corridor, the former Ford transmission plant along Red Bank Road in Fairfax, has recently obtained a grant from the Clean Ohio Revitalization Fund for cleanup and redevelopment. Transportation improvements/investments are needed to optimize this redevelopment effort and maximize overall regional benefits, related to both the local economy (jobs and job-related investments) and environmental preservation (greenspaces and farmland).

2.2.8. Freight and Movement of Goods and Services

The eastern sector of the Cincinnati metropolitan area is an important pathway for movement of goods and services. Within the Eastern Corridor, the primary land-based freight pathways all involve rubber-tired vehicles (trucks as opposes to trains) on these routes:

- State Route 32
- State Route 125
- US Route 50
- US Route 52
- Interstate Routes 275 and 471

These routes, in total, describe the only significant available major pathways for the regional, intrastate and interstate movement of goods and services in the eastern sector of the OKI region. Relative to freight movement and related economic activities, lack of good routes and connections in the eastern sector is cause for inefficient routing, ineffective penetration of urban commerce areas, increased pressure on other congested high-volume routes, and diminished linkage to larger markets and economies. These shortcomings affect not only the City of Cincinnati, Hamilton and Clermont counties and the OKI region, but also the state of Ohio, which relies in part on effective and efficient interstate trade relative to goods and services to achieve real economic gains.

The available freight and commerce routes in the Eastern Corridor are lacking in ability to support the larger economic goals of the region and the state.



With a high degree of commercial and office development, most goods and services movement on SR 125 has to do with retail functions, expedited deliveries and convenience services. Through movement of freight is not a major component of the goods and services network in this part of the Eastern Corridor.

US 50 has limited freight and goods and services function that is hindered by capacity, routing and geometric limitations. Critical parts of US 50 within the Eastern Corridor are posted against heavy trucks, or are physically configured within jurisdictions to prohibit or severely limit freight movement.

US 52, with connections to older industrial activities along the Ohio River eastward to Portsmouth and beyond, has some limited value in the movement of goods and services, particularly inboard of the I-275 outerbelt. In this segment, most of which is within the City of Cincinnati, US 52 is routed along Kellogg and Eastern avenues and provides an important direct route for trucks wishing to access the downtown business district from the east. Wilmer Avenue and Wooster Road are important connecting secondary links that allow trucks from US 52 to work northward toward the Red Bank Road corridor, and destinations within the north-central City of Cincinnati economic development sectors, such as Oakley and Madisonville.

Interstates 275 and 471 both carry significant goods and services traffic, not just from the eastern portion of the OKI region, but from all points, linking the region to the state and national economy. For many destinations within the urban area of the OKI region, the available interstate routes do not provide good, efficient access consistent with state, regional or local economic development goals.

In the Eastern Corridor, the most important roadway element relative to movement of goods and services between the OKI region and eastern markets is SR 32. SR 32 is part of the national Appalachian Development Highway System (ADHS) network, which connects all of the multi-state Appalachian Region to important eastern seaboard export markets. The ADHS funding is targeted at support of economic development and commerce. Freight volumes on the Ohio portion of the ADHS are significant.

Compared to other major Ohio roadways elements in the OKI Region, SR 32 in the Eastern Corridor carries proportionately significant volumes of commodities via heavy truck (based on 1998 Reebie Associates data; ODOT/FHWA, 2002):

Route	Commodity Movement as Total Heavy Truck Volume (daily range)
SR 32	1,501 to 5,000
IR 275	1,501 to 5,000
IR 74	5,001 to 10,000
IR 75	5,001 to 10,000
IR 71	15,001 to 30,000

Based on these data, from a commodities volume standpoint (all types and all destinations, whether local or national), SR 32 and I-275 are in the same range of importance in the OKI region, one tier below the major interstates I-75 and I-74. By far the most important commodities volume route in the region is I-71. It is likely that commodities volumes seen on I-71 and I-275 are, in part, an outcome of routing and connectivity deficiencies in the Eastern Corridor.



In addition to basic commodity volume, actual freight tonnage that is linked to the global economy, usually represented as interstate or international movement, exports or equivalents, is also an important measure (ODOT/FHWA, 2002):

Route	Linkage to Global Economy as Total Through Truck Tons (daily range)
I-75	2,000,001 to 10,000,000
SR 32	10,000,001 to 20,000,000
I-275	10,000,001 to 20,000,000
I-74	20,000,001 to 50,000,000
I-71	20,000,001 to 50,000,000

Ability to accommodate efficient and effective movement of freight and goods and services in the Eastern Corridor, in support of regional and state commerce and economic development goals, is an important part of the project purpose and need.

2.3. PURPOSE AND NEED ELEMENTS BY MODE

2.3.1. Highway

Many of the major roadways in the Eastern Corridor currently have high traffic volumes and are operating at or below acceptable Levels of Service. For the Eastern Corridor, specific purpose and need elements for addressing key transportation problems in the area related to highway improvements include the following:

- Better meet travel demand
- Provide more efficient travel patterns and destination linkages
- Augment capacity and provide congestion relief
- Reduce travel time and delays
- Improve motorist safety
- Improve movement of freight, goods and services
- Improve regional connectivity
- Configure to link to and support the Eastern Corridor land use vision plan
- Configure to support and facilitate bus, rail and TSM investments
- Implement state and regional long range plans

2.3.2. Transit (Bus and Rail)

Associated with the existing transportation infrastructure, highway capacity and congestion problems occurring in the Eastern Corridor is the limited availability of alternative transportation options, including bus and rail transit. At this time, a large part of the Eastern Corridor study area is not served by bus and no rail transit exists.

The Eastern Corridor project addresses this void by including new and expanded bus transit routes



and new rail service, interlinking these transit improvements with other proposed transportation modes, including highway and TSM. This proposed strategy of coordinating different multi-modal components is expected to provide an effective, efficient and viable transportation network for the Eastern Corridor.

Specific reasons for including and implementing transit as part of the new Eastern Corridor transportation network include the following:

- Increase accessibility by reaching areas not currently being served The Eastern Corridor study area contains communities and employment centers that are not served (or are under-served) by transit either internally or through linkages to the broader region. There is a need for people in these areas to reach jobs, goods (e.g., shopping) and services (e.g., health care). Improved and expanded bus service and new rail transit in the area will help meet the needs of the un-served and under-served by adding and/or improving north-south and east-west connections, increasing the frequency of circulation through service areas, adding transit hubs and park-and-ride facilities and using smaller transit (bus) vehicles to serve narrow streets in high density neighborhoods.
- Connect people with jobs As noted previously in Chapter 2, most key roads in the Eastern Corridor area, including the interstates, currently exhibit stop-and-go conditions (bumper-to-bumper) during peak travel periods (mostly corresponding to job commute periods) and operate or are expected to be operating at below-acceptable Levels of Service in the near future. Overall, the duration of congestion, the severity of congestion and the extent of congestion are all increasing in the Eastern Corridor.

Increased availability of transit in the study area, configured as better connection of residential areas with job centers by bus and rail, is needed to provide an efficient option for commuters during peak commute periods in the busiest travel corridors. Overall, transit is an essential link for city residents to suburban jobs, as well as the more traditional goal of linking suburban residents to city jobs.

- Serve the transit-dependent (or transportation-disadvantaged) Potential transit-dependent groups occurring in the Eastern Corridor include senior citizens, the disabled, students, young people and the economically disadvantaged. Description and location of these populations within the study area is presented in Chapter 4. Overall, greater availability of bus and rail transit in the area is needed by these groups to provide access to jobs, services and goods in a manner that can be more cost-effective compared to the purchase, operation and maintenance of an automobile.
- Improve overall transportation A key need for the Eastern Corridor area is to develop and implement a
 multi-modal approach for improving transportation conditions in the area, with the goal of interlinking
 transit improvements (bus and rail) with other proposed transportation modes, including highway and
 TSM, and providing more transportation options. This strategy of linking together and coordinating
 different multi-modal components is needed to provide an effective, efficient and overall improved
 transportation network for the Eastern Corridor.

Bus Transit

As described in Chapter 1 and shown on Figure 1.6, bus service is currently provided in the Eastern Corridor by SORTA/Metro through 18 existing bus routes and four park-and-ride facilities. However, no bus service currently exists to much of the central part of the study area, including Batavia Road (SR 32), Newtown Road, the majority of Clough Pike and portions of US 50 and I-275. Additionally, there is essentially no bus service in the area east of I-275.

Currently, SORTA/Metro is addressing bus transit needs in the overall region, and has developed MetroMoves, a 20 year transit plan outlining recommendations for improvements and



enhancements to its existing regional bus transit operations, including improvements within the Eastern Corridor study area. The Eastern Corridor Multi-Modal Projects study has been developed in coordination with this effort by SORTA/Metro in order to support and compliment the goals and recommendations included in the recently completed MetroMoves plan.

In addition to the four transit needs noted above, specific purpose and need elements for addressing key transportation problems in the area related to improved bus transit include the following:

- Stage service investments to fit with demand and resources
- Provide important capacity addition beyond reasonable limits of the highway system
- Improve regional connectivity
- Configure expanded bus to link to and support the Eastern Corridor land use vision plan
- Configure expanded bus to support and facilitate rail, highway and TSM investments
- Implement regional long range plans (OKI, MetroMoves)

Rail Transit

No rail transit is currently available in the Eastern Corridor study area or general project vicinity. The I-71 corridor study, which is also underway in the OKI region just west of the Eastern Corridor, is planned for light rail and currently in the preliminary engineering/environmental impact assessment phase. Implementation of rail transit in the Eastern Corridor provides opportunity to effectively interface with this proposed I-71 light rail transit route. In addition, the implementation of rail transit in the Eastern Corridor provides opportunity to interface with the Banks/Riverfront intermodal parking project - located along the riverfront in downtown Cincinnati - which has recently been awarded construction funding by the State of Ohio Transportation Review Advisory Council.

Rail transit in the Eastern Corridor would provide an alternative to the automobile for job commutes and other types of trips. It would also offer a means by which corridor residents are more connected to the Cincinnati Business District and central area businesses, health care, education, arts, cultural, sports and entertainment opportunities. Additionally, in that a rail transit line could potentially involve the extensive use of existing right-of-way corridors, impact on the natural and man-made environment would be reduced and the land use/transportation relationship could be maximized.

In addition to the four transit needs noted above, specific purpose and need elements for addressing key transportation problems in the area related to rail transit include the following:

- Connect people with recreational destinations (e.g., downtown Cincinnati) and other regional attractions for non-car travel
- Provide visible, high profile link to the Cincinnati Central Business District from outlying areas
- Improve regional connectivity
- Configure rail transit to link and support the Eastern Corridor land use vision plan
- Configure rail transit to support and facilitate bus, highway and TSM investments
- Implement regional long range plans (OKI, MetroMoves)



2.3.3. Transportation System Management (TSM)

In addition to capacity and congestion problems, many of the existing roads in the Eastern Corridor exhibit physical and geometric deficiencies such as inadequate intersections, steep grades and poor sight distances, narrow pavement widths, restricted turning radii, poor alignment, restrictive topography, narrow shoulder and steep ditches, substandard interchange geometry, pedestrian conflicts, access conflicts and at-grade rail crossings.

The TSM strategy for the Eastern Corridor is aimed at enhancing the efficiency, capacity and service quality of the existing transportation network using low capital measures consisting of operational strategies such as improved signal timing, minor existing roadway corridor improvements, intersection improvements, as well as use of transportation demand management (TDM) strategies. For the Eastern Corridor, specific TSM purpose and need elements include the following:

- *Fit with Land Use* The land use vision plan developed for the Eastern Corridor was conducted and serves to coordinate multi-modal access and mobility improvements throughout the corridor, with an emphasis on neighborhood connectivity and community fit for all areas within the corridor. TSM improvements need to respond to specific land use objectives and action items identified in the land use vision plan.
- Augment Other Travel Modes TSM improvements within the Eastern Corridor need to augment and support other components of the multi-modal transportation plan recommended by the Eastern Corridor MIS, including bus, bike, rail and/or proposed highway improvements.
- Demand Shift or Reduction TSM improvements within the Eastern Corridor include measures that provide demand shift or reduction within the Eastern Corridor through Travel Demand Management (TDM) strategies such as ride share programs (park-and-ride, car/van pools,) trip length reductions, promotion of High Occupancy Vehicle (HOV) travel, and/or facilitation of proximate destinations.
- System Level Improvements TSM improvements within the Eastern Corridor need to provide measurable travel benefits on a regional or system-level scale, such as operational improvements, travel time reductions, connectivity provisions between modes of travel, and/or incident response time improvements.
- Safety TSM improvements within the Eastern Corridor need to include provision for reducing the risk or
 potential for accidents, including components such as access management to reduce points of conflict,
 increased lighting and signs for pedestrian/bike movement, pedestrian and bike friendly corridor and
 intersection improvements through use of bike lanes, sidewalks and defined crossing movements, and/or
 roadway geometric improvements such as center turn lanes additions, shoulder widening, horizontal
 curve improvements and sight distance improvements.

TSM measures that were included in the MIS Recommended Plan consisted of: intersection improvements, improved signal timing for several arterial corridors, more frequent bus service, new park-and-ride facilities, development of new bike trail/multi-purpose facilities and Advanced Regional Traffic Interactive Management and Information System (ARTIMIS) expansion. The list of specific TSM projects evaluated for the Eastern Corridor was obtained with input from local jurisdictions occurring within the study area, as further described in Chapter 3 of this DEIS.



2.4. RELATIONSHIP TO STATE AND LOCAL TRANSPORTATION PLANS

2.4.1. State Transportation Plans

The State of Ohio's Long Range Multi-Modal Transportation Plan, titled *Access Ohio*, establishes the mission, goals, policies and actions for guiding ODOT's efforts to develop an efficient, intermodal transportation network for Ohio through the year 2020. One of the key components of *Access Ohio* is the identification of major transportation corridors with statewide significance and importance to the state's economic vitality, referred to as Macro-Corridors. In *Access Ohio*, I-275 and SR 32 in the Eastern Corridor study area are both identified as Macro-Corridor highways. Overall, the Eastern Corridor project is consistent with initiatives identified in *Access Ohio* in that: a) the project is based on a multi-modal transportation improvement framework, as identified from the MIS Recommended Plan, and b) key components of the project include improvements to both I-275 and SR 32, which are identified macro-corridors.

The Eastern Corridor SR 32 improvement in Clermont County is listed as a Tier II priority project by Ohio's Transportation Review Advisory Council (TRAC), and the I-275/SR 32 interchange upgrade in Clermont County, which is included in the Eastern Corridor project, is listed as a Tier I priority project for 2010 construction (listings as of December 9, 2003 for State Fiscal Years 2005-2010). Tier I indicates a project has been selected for construction within the designated fiscal years, and Tier II status indicates that the project is funded for some level of continued development.

2.4.2. Regional Transportation Plans

The MIS Recommended Plan for the Eastern Corridor, described in Chapter 1, has been adopted in OKI's 2030 Regional Transportation Plan (the most recent regional long range transportation plan; adopted September 2001) and is included in its short range FY 2004-2007 Transportation Improvement Program (TIP).

Bus expansion and rail transit components of the Eastern Corridor project were coordinated with the MetroMoves Regional Transit Plan (June 2002). The MetroMoves plan, developed by SORTA, is a 30-year transit development plan for serving the greater Cincinnati metropolitan area, including Hamilton, Butler, Warren and Clermont Counties, Ohio and northern Kentucky. The MetroMoves plan incorporates the Regional Rail Plan, which was developed by SORTA, OKI, the Transit Authority of Kentucky (TANK) and Hamilton County. Overall, the MetroMoves plan focuses on expanding the current, primarily city-based transit system, to one that more effectively serves the entire Hamilton County and greater Cincinnati metropolitan area. Key objectives of the MetroMoves plan are to tailor the bus system to the needs of individual communities and to provide efficient connection to the planned regional rail network. In general, this is to be accomplished by development of a hub-oriented bus system, with transit hubs placed across the county and linked by new cross-town and other direct routes to key destinations.

State Route 32 is part of the national Appalachian Development Highway System (ADHS) network, which connects the multi-state Appalachian Region to important eastern seaboard export markets. The ADHS was established in 1965 by the Appalachian Development Act, and is targeted at support of economic development and commerce.



2.4.3. Federal Transit Authority (FTA) New Starts Program

The FTA New Starts Program is the federal government's primary means of supporting local fixedguideway transit projects. Fixed guideway projects seeking New Starts funding must emerge from a locally driven multi-modal planning process, and eligible projects include any fixed-guideway system which utilizes and occupies a separate right-of-way or rail line for the exclusive use of mass transportation (such as commuter rail, rapid rail, light rail, automated guideway transit, people movers, or exclusive facilities for buses or other high occupancy vehicles).

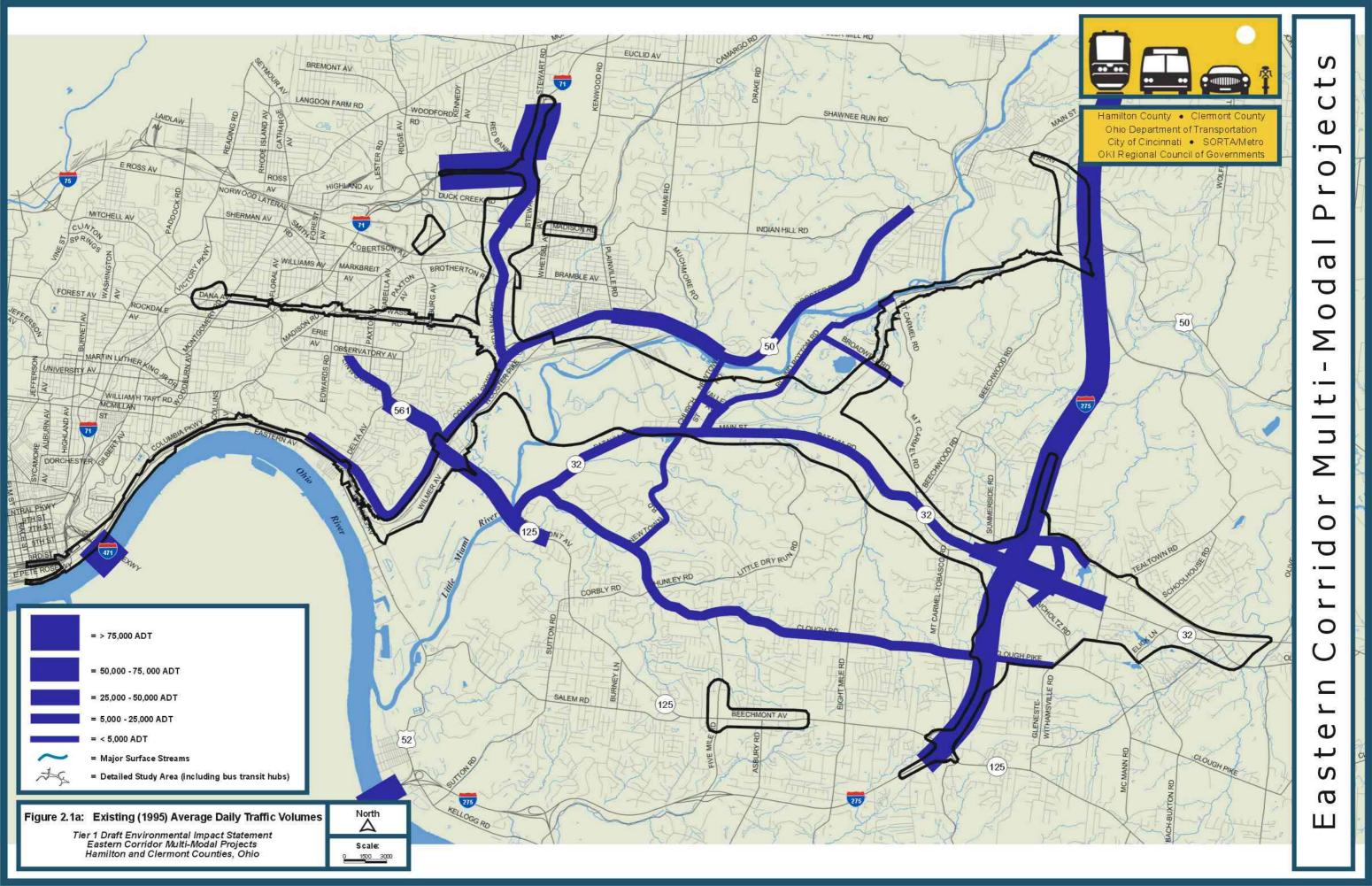
The Ohio Department of Transportation, SORTA/Metro, OKI, City of Cincinnati, and Hamilton and Clermont Counties jointly requested that the FTA add the Eastern Corridor rail transit options to the recognized New Starts framework for the Cincinnati metropolitan area, and that FTA would review the Tier 1 NEPA document as a cooperating agency. Also requested was FTA support of funding under New Starts allocations or other appropriations to assist in the conducting of special studies for addressing rail transit physical and operational issues in the Cincinnati riverfront area. The FTA is currently reviewing New Starts status for the Eastern Corridor.

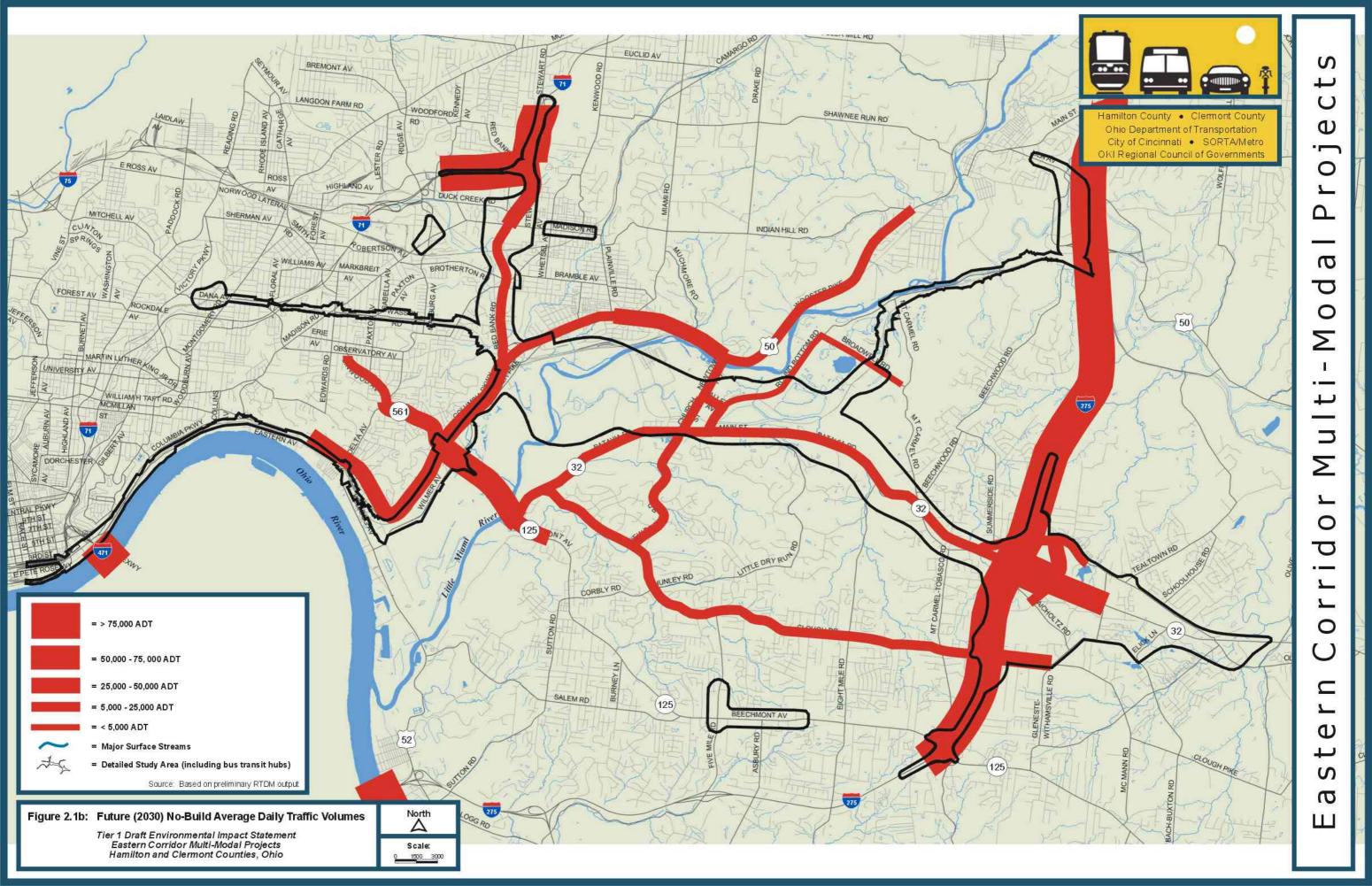
2.4.4. Local Plans

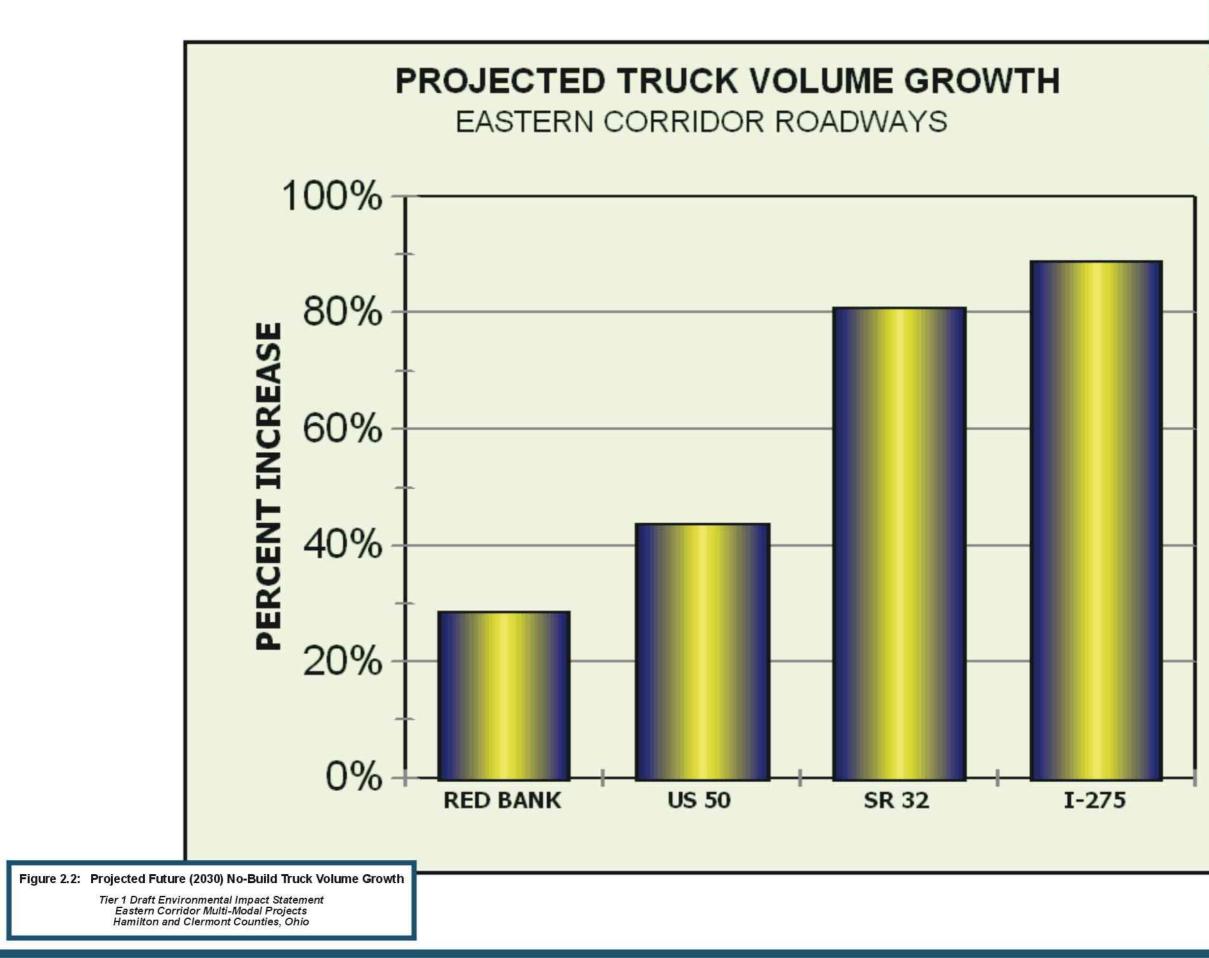
The Eastern Corridor transportation improvements are consistent with and are incorporated in the adopted thoroughfare plans for Clermont and Hamilton counties. The various project segments and actions are being coordinated with land use, development, preservation and transportation plans within the individual jurisdictions within the Eastern Corridor in Clermont and Hamilton counties.

Other local transportation plans and studies listing the Eastern Corridor project, or identifying need for one or more of the components of the Eastern Corridor MIS Recommended Plan include: the SR 32 Corridor Thoroughfare Plan and Access Clermont, which is Clermont County's Long Range Plan.

In addition, the Eastern Corridor Land Use Vision Plan developed for the project (Meisner and Associates, May 2002) has been adopted by the Hamilton County Regional Planning Commission and is in the process of being adopted by each of the political jurisdictions occurring in the Eastern Corridor area.





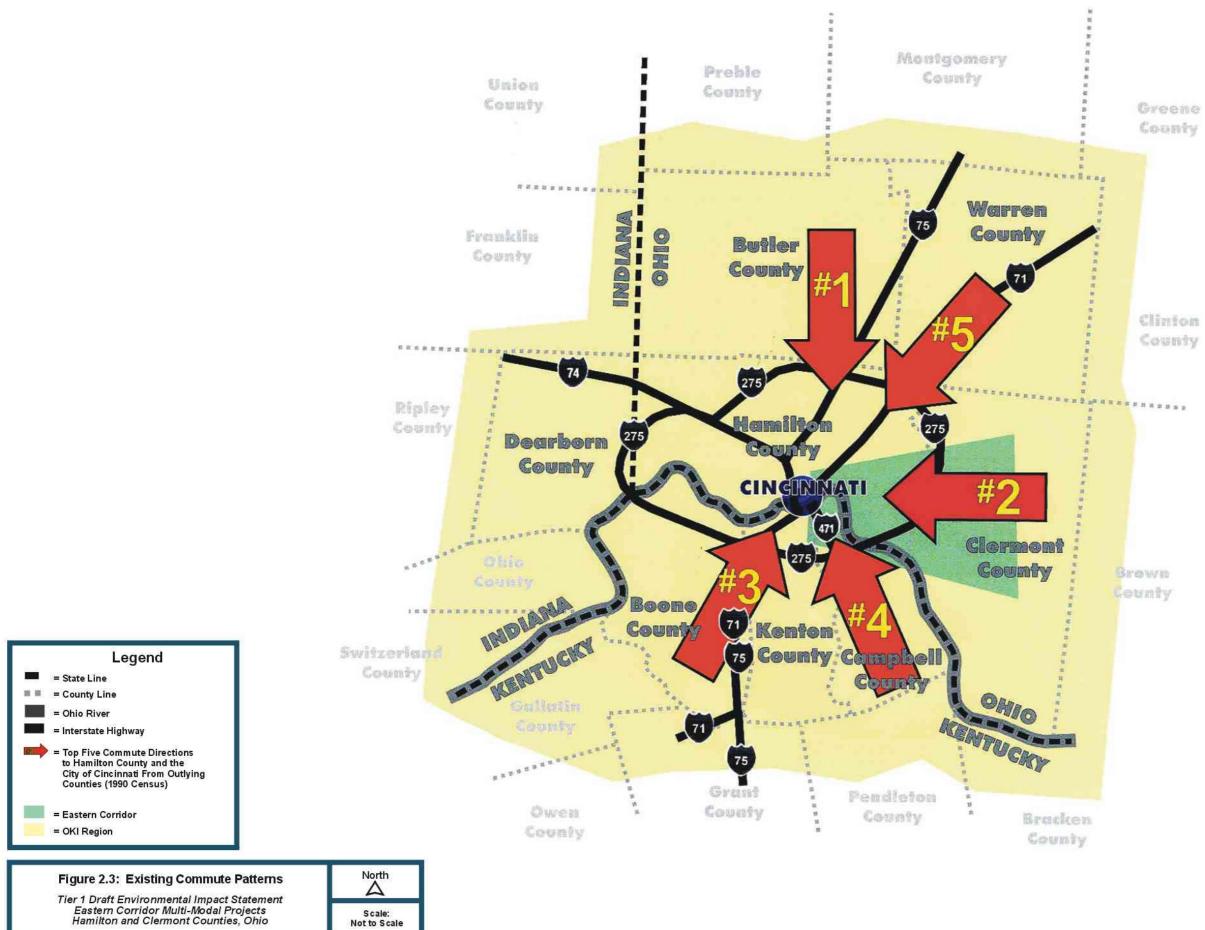




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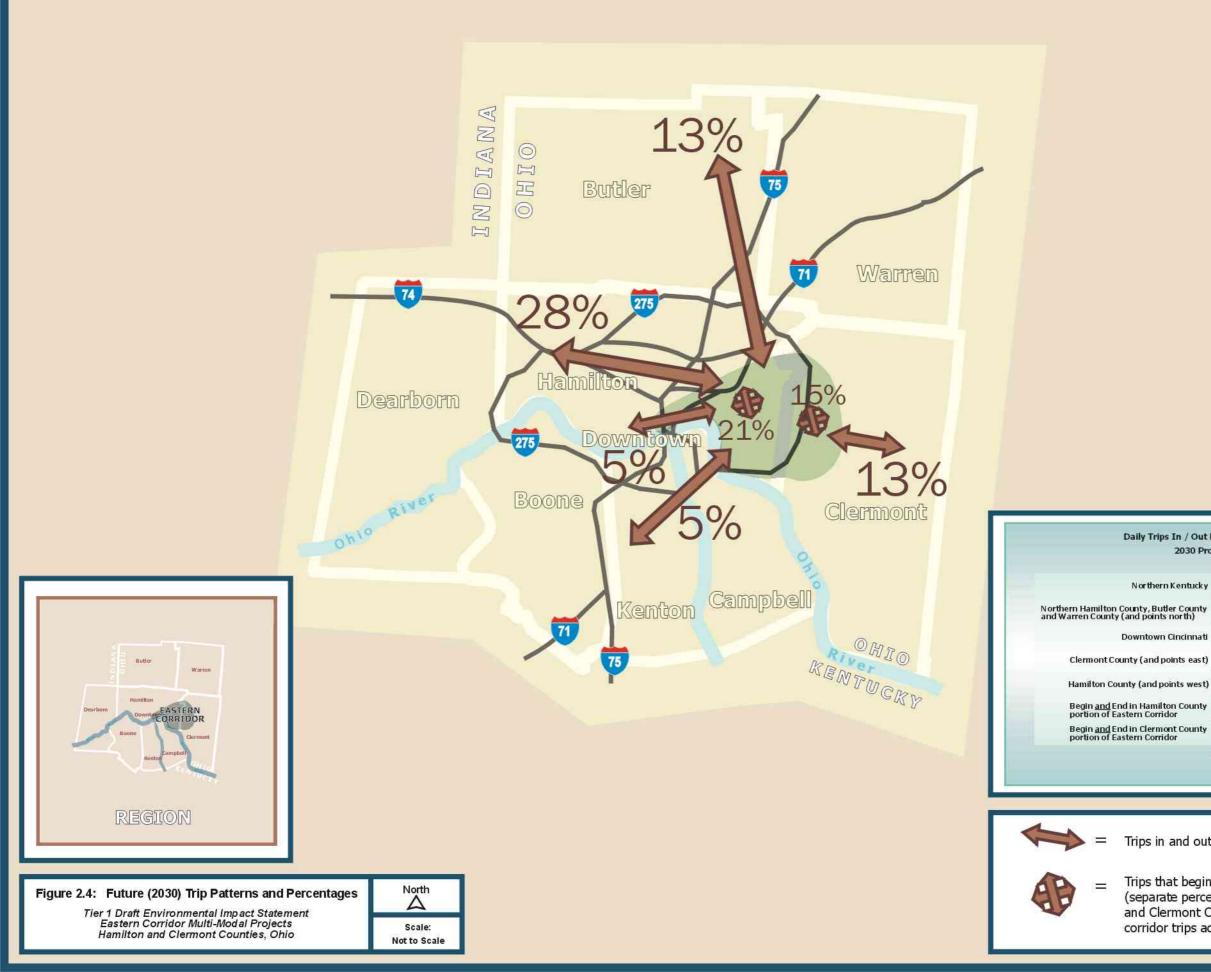
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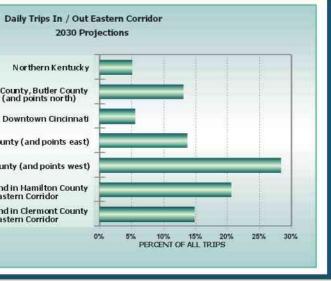


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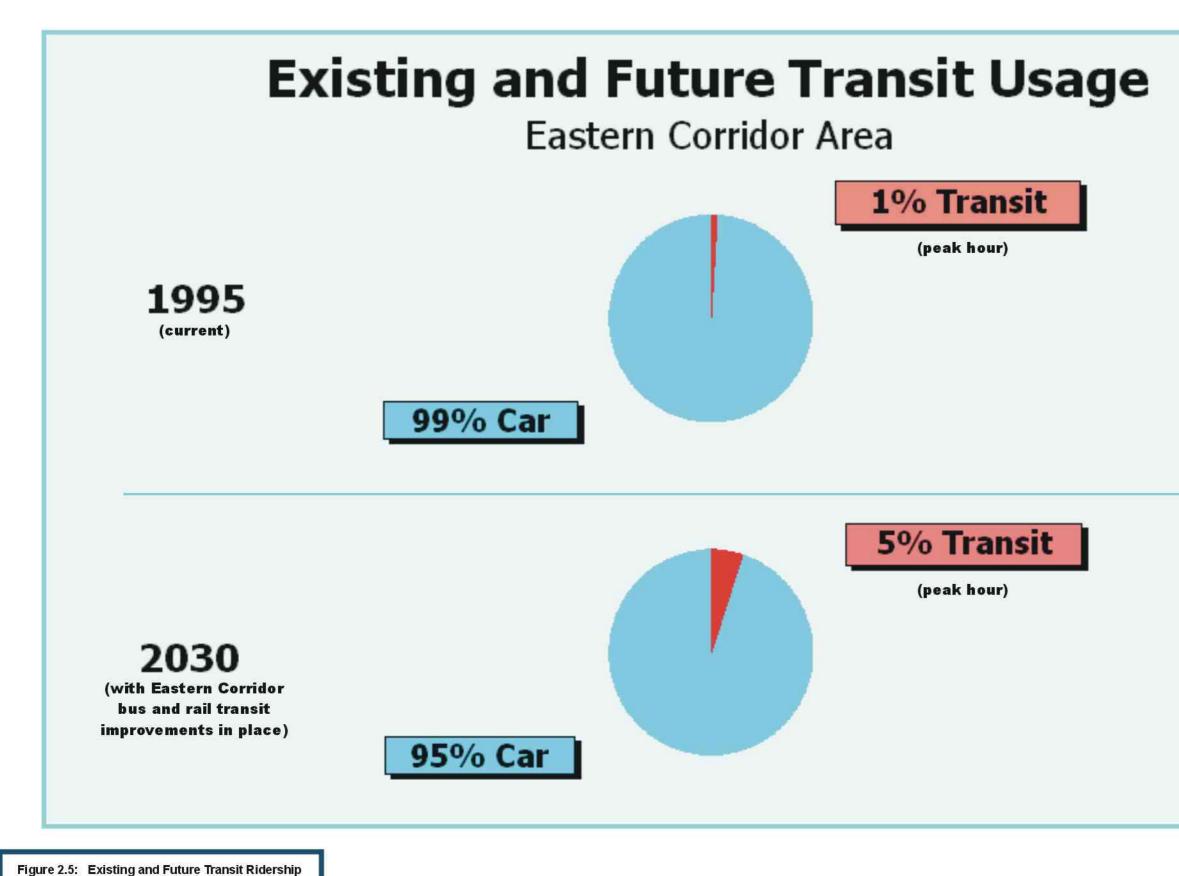
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Trips in and out of the Eastern Corridor Area

Trips that begin <u>and</u> end in the Eastern Corridor Area (separate percentages are shown for Hamilton County and Clermont County portions; together internal (local) corridor trips account for 36% of all trips)

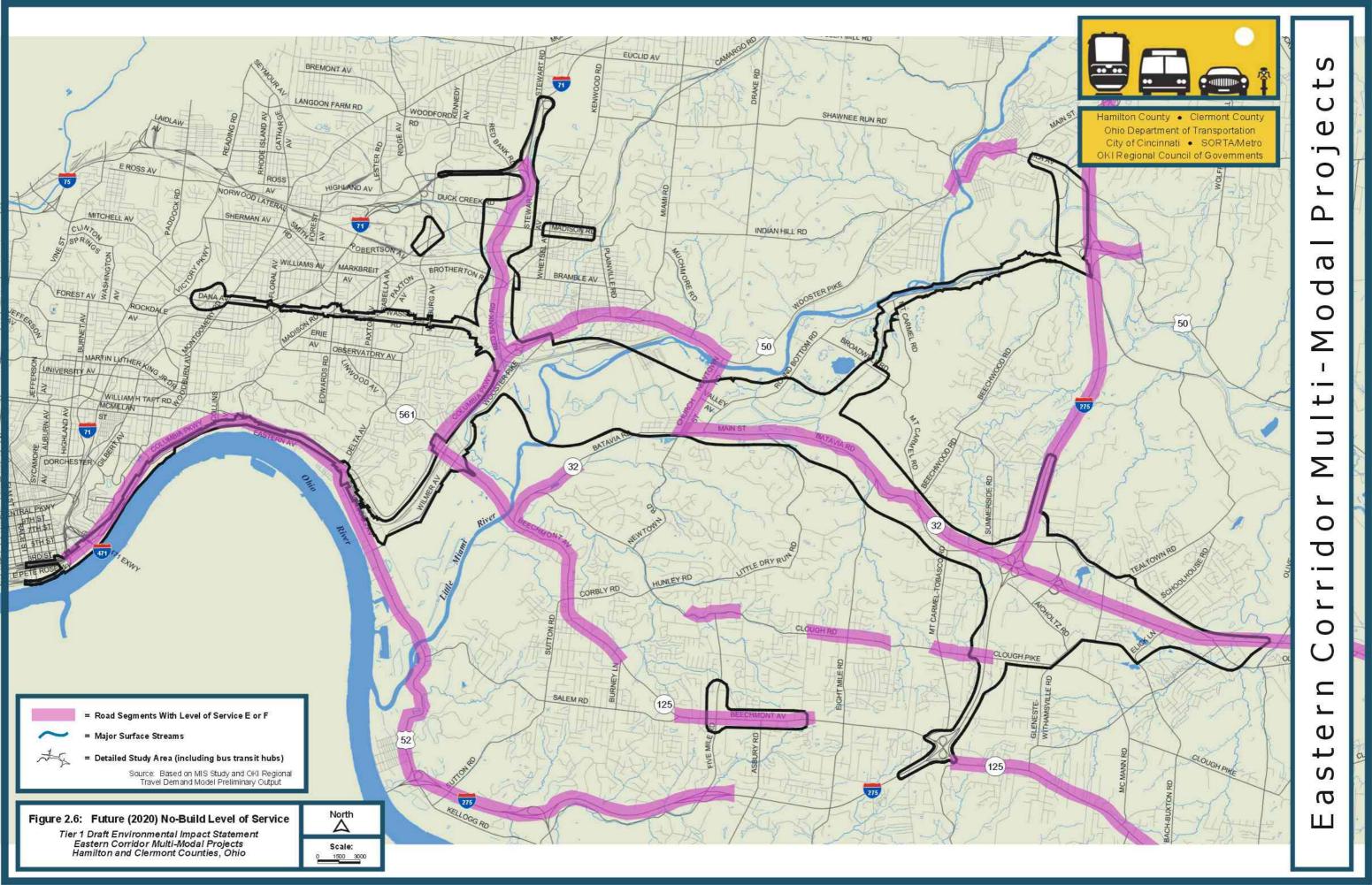
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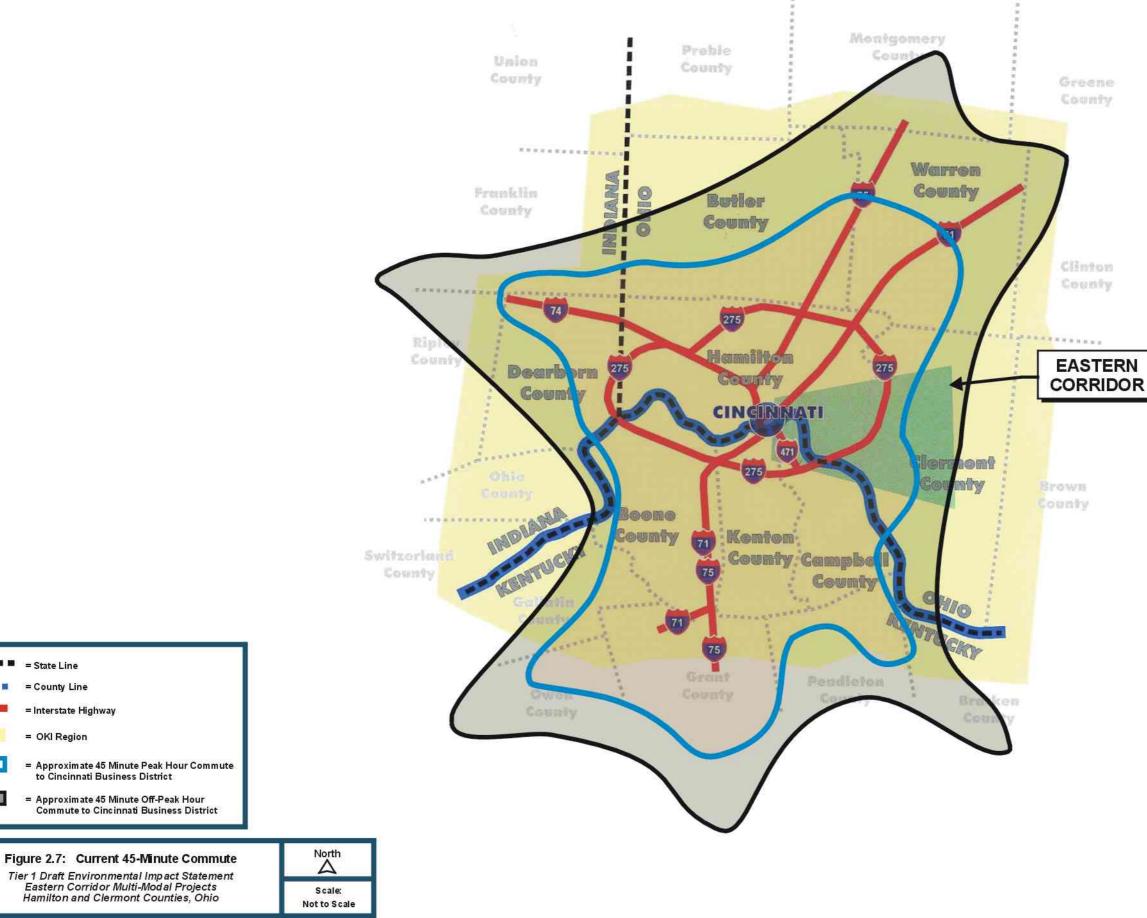


Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio



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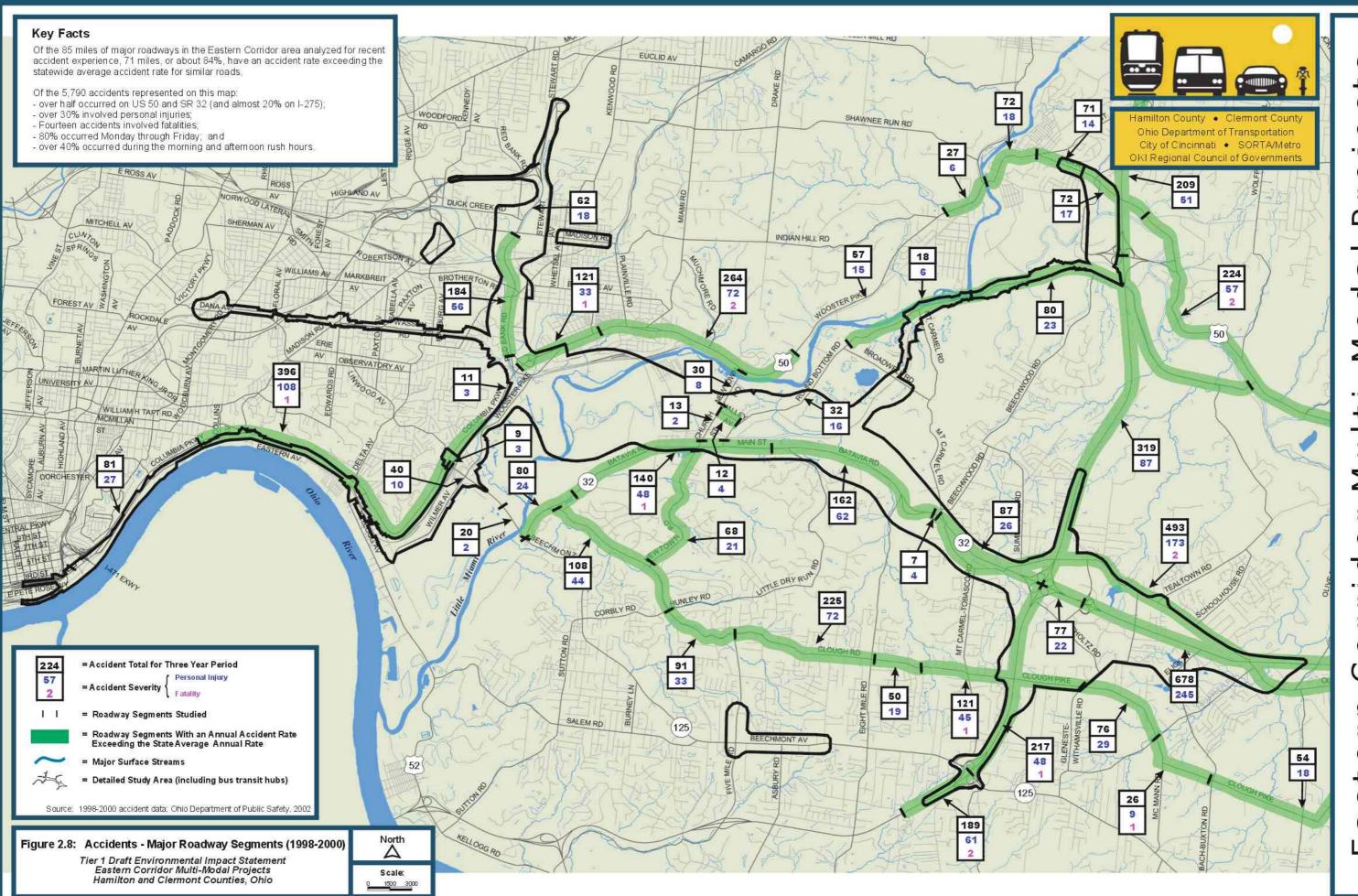
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= OKI Region

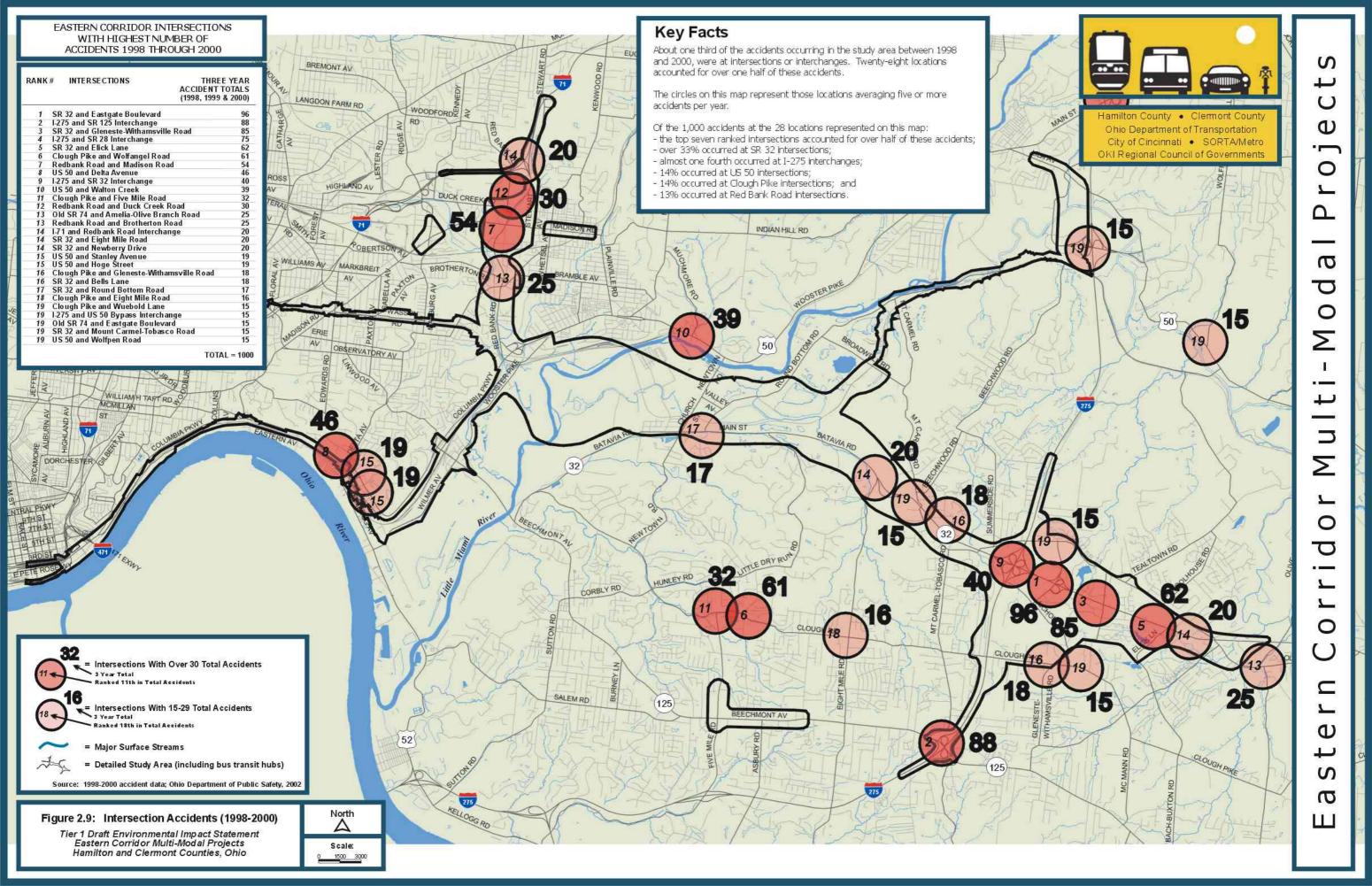


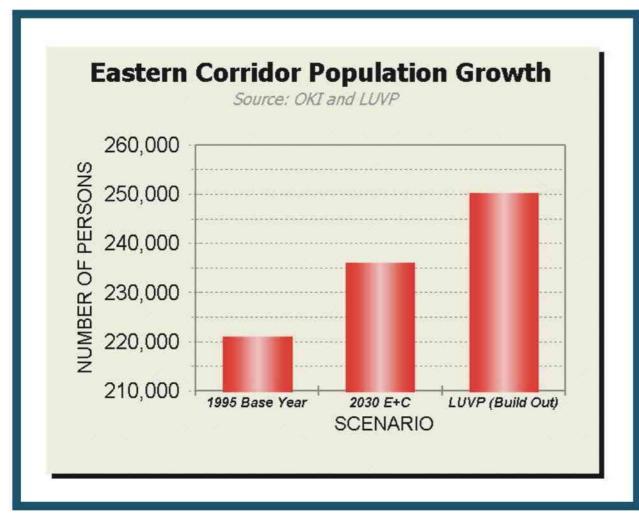
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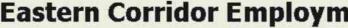
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These charts show projected population and employment growth in the Eastern Corridor area under two sets of conditions compared (using 1995 as the base year):

- a) 2030 as the projected year (coinciding with the Regional Travel Demand Model projected year), and
- b) an unspecified future year representing the full "Build Out" condition following the Land Use Vision Plan scenario.



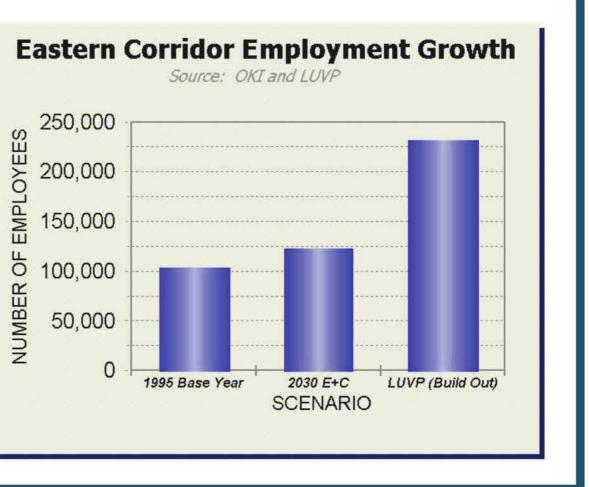


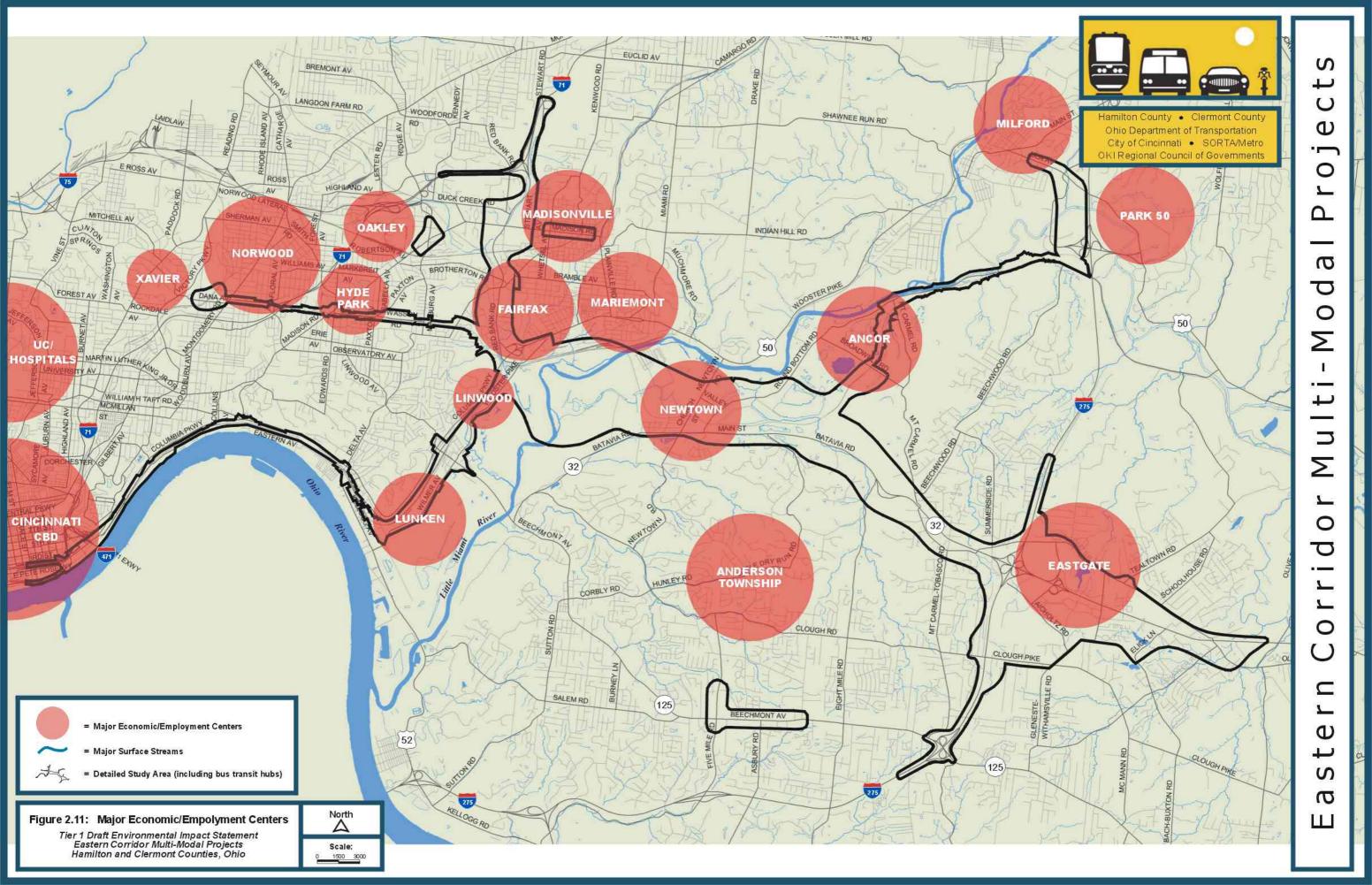
Figure 2.10: Population and Employment Growth Trends

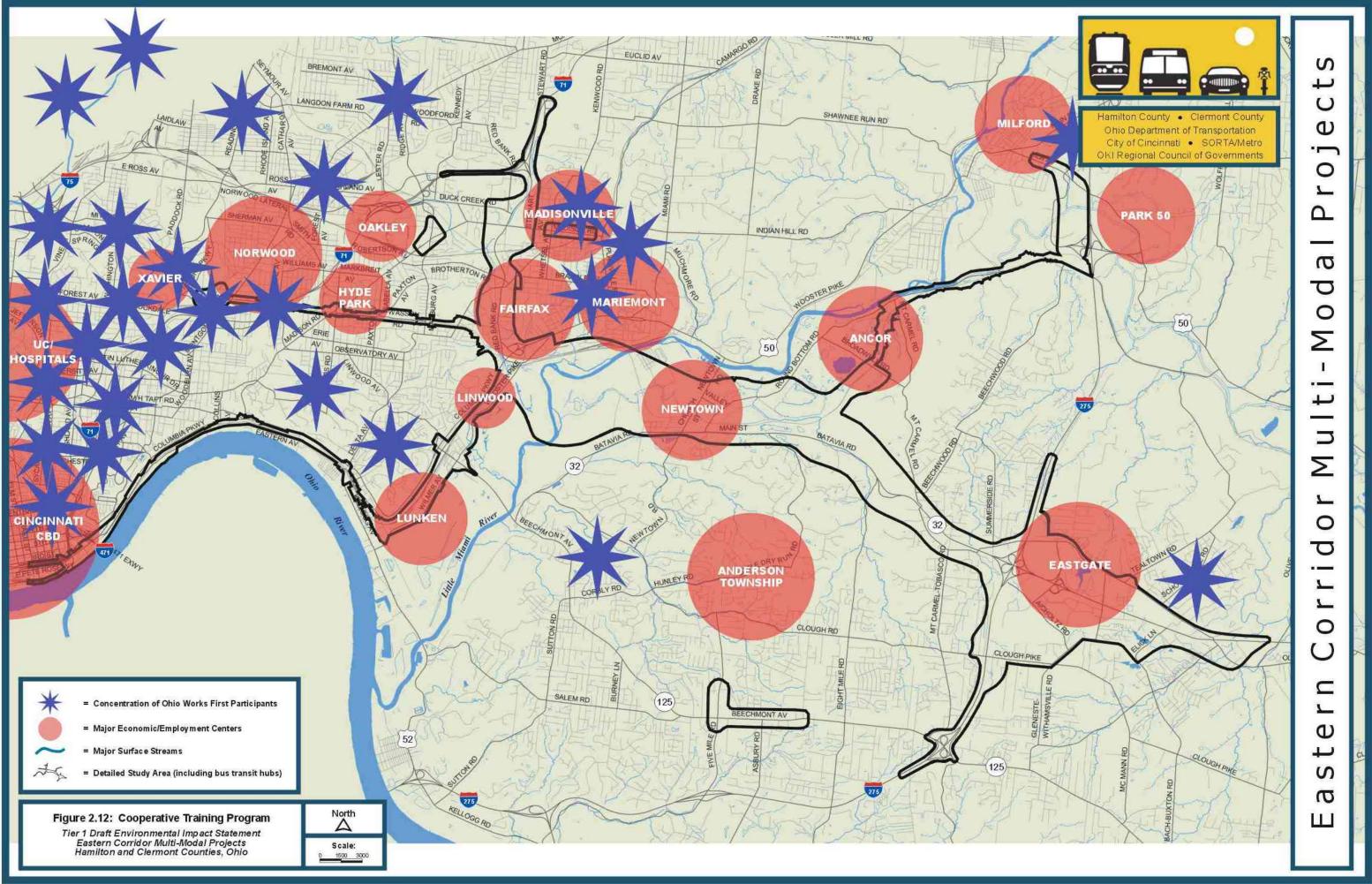
Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

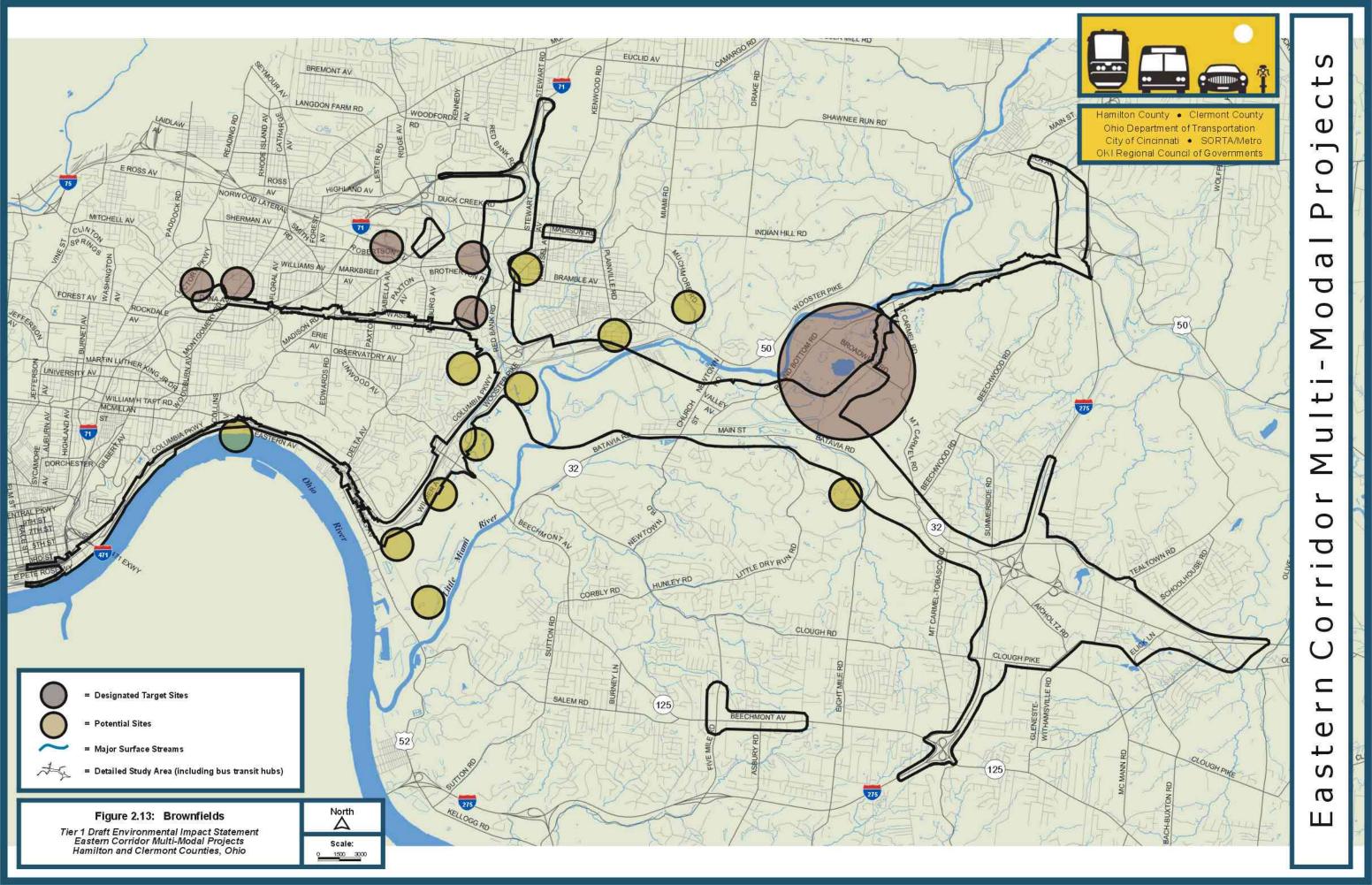


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Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

CHAPTER 3 ALTERNATIVES



CHAPTER 3 ALTERNATIVES

This chapter describes the Eastern Corridor multi-modal alternatives framework and feasible alternatives that have been developed for Tier 1. The alternatives framework presented in this chapter provides a baseline for the evaluation of preliminary environmental impacts, as detailed in Chapter 5.

Chapter 3 Organization

Section 3.1 is an overview of the process by which the project is being conducted, specifically the multi-modal and tiered NEPA approach.

Section 3.2 summarizes early project alternatives considered and dismissed during the Eastern Corridor Major Investment Study (MIS), as an overview of the broad range of transportation options that have been evaluated for the Eastern Corridor.

Section 3.3 summarizes the development of conceptual alternatives by mode. These alternatives, developed early in the Tier 1 work program based on MIS recommendations and shown at the first round of public meetings for the project, were used to identify the study area needed for detailed environmental field work to be conducted during Tier 1 and feasible alternatives development.

Section 3.4 summarizes the development and description of feasible alternatives evaluated during Tier 1. This portion of the chapter is divided into two sections:

- Chapter 3.4.1 description of feasible alternatives by mode, and
- Chapter 3.4.2 description of multi-modal feasible alternatives by area

Feasible alternatives are presented in two ways: by mode and by geographic area in the Eastern Corridor. The description of modal alternatives (Chapter 3.4.1) includes the various TSM, bus transit, rail transit, highway and bikeway alternatives under consideration for the Eastern Corridor as a whole. The proposed project, however, is not a single-mode plan, but a multi-modal transportation solution in which the various modes are being planned and developed together for eventual implementation. The Eastern Corridor land use vision work identified land use priorities for six geographic regions within the Eastern Corridor. This land use plan, along with the Eastern Corridor MIS, provided the framework for Tier 1 alternatives development. As such, feasible modal alternatives developed for Tier 1 are grouped are together in a multi-modal framework for six geographic areas (feasible multi-modal alternatives by area; Chapter 3.4.2), corresponding to the focus areas used in the land use vision process. This grouping generally accounts for logical termini and operational considerations, and how different components of the proposed multi-modal transportation plan within an area work together to address a particular transportation need or local and/or regional capacity issue.



Section 3.5 is a description of the No Build Alternative for the Eastern Corridor. The No Build, or "do nothing" alternative is used as the baseline for the assessment of feasible alternatives and preliminary environmental impacts.

3.1. PROCESS OVERVIEW

3.1.1. Major Investment Study Basis for Multi-Modal Strategy

The Eastern Corridor MIS, completed by OKI in 2000 and incorporated into the long range regional transportation plan, established the basic framework for needed transportation investments in the Eastern Corridor. Overall, the MIS determined that a multi-modal strategy was required to adequately address current and future transportation problems and travel demand in the Eastern Corridor area, and presented this multi-modal strategy in the MIS Recommended Plan.

The MIS Recommended Plan, therefore, identified the various transportation modes and concepts for the Eastern Corridor Tier 1 work program. Overall, the main objective of Tier 1 work is to further develop and assess the MIS recommendations and, in compliance with FHWA/FTA and NEPA regulations and guidelines, identify a set of feasible alternatives for further development and eventual implementation within the Eastern Corridor.

State and federal resource, regulatory and transportation agencies are in agreement with the Eastern Corridor multi-modal project approach and with the use of a tiered NEPA process, as described below.

3.1.2. Tiered Approach

The Eastern Corridor study is being conducted in two parts, corresponding to a two-tiered NEPA process. Overall, Tier 1 work consists of the preparation of a Tier 1 Environmental Impact Statement (EIS) which presents information on transportation need, key environmental resources in the area, the development of conceptual modal alternatives, a preliminary assessment of expected impacts for feasible alternatives, and the identification of a set of feasible alternatives to be carried through into more detailed study in Tier 2. Tier 2 work will involve more detailed engineering and environmental analyses, and final NEPA documentation for the feasible alternatives identified in Tier 1. In general, Tier 2 NEPA documents will refer to the purpose and need and other background information presented in the Tier 1 EIS, but will incorporate more detailed alignment development, environmental field assessment, impact evaluation and mitigation plan development on a project-by-project basis in order to complete the NEPA process.

3.1.3. Documentation of Alternatives Development

Detailed documentation of the development and evaluation of the universe of alternatives considered from the beginning of the project, including alternatives dismissed early on and those carried through to the Eastern Corridor Tier 1 work program, is presented in the Eastern Corridor MIS (OKI, April 2000), and summarized in Chapter 3.2 of this DEIS. The development of conceptual alternatives and the identification of feasible multi-modal



alternatives for the project in Tier 1 has occurred in conjunction with public involvement and oversight from project advisory groups, and is documented in DEIS Chapters 3.3 and 3.4.

Three rounds of public meetings, held in May-June 2002, May 2003 and January-February 2004, and a broad range of other public involvement opportunities have been conducted during the Eastern Corridor Tier 1 work phase. A wide range of valuable input was gathered from these public involvement activities, and project development to date has reflected this input. At the most recent round of meetings held in January-February 2004, the public reviewed and generally confirmed the feasible alternatives presented in this DEIS.

3.2. ALTERNATIVES CONSIDERED AND DISMISSED (PRE-TIER 1)

3.2.1. Summary of Major Investment Study (MIS) Alternatives

The Eastern Corridor MIS was an early planning study led by OKI for the purpose of identifying alternatives determined capable of meeting regional transportation needs. The MIS work was a collaborative effort involving public input and decision-making from key federal, state, and local stakeholders. The MIS work considered a broad range of information and evaluated a variety of alternatives and preliminary options for addressing current and future transportation problems in the area. Technical analyses were conducted at a scale and level of detail appropriate for the regional planning issues under consideration, and the public and stakeholders confirmed the approach and decision-making process used.

The Eastern Corridor MIS (OKI, April 2000) consisted of a five-level alternatives analysis. A universe of alternatives was initially developed, from which twelve feasible, single-strategy alternatives were selected, followed by transition to seven plans. Five mode-based plans were then identified and assessed, followed by the development of a preliminary recommended plan and eventual selection of a final Recommended Plan. Descriptions and detailed evaluation of the alternatives considered and dismissed through the MIS process are presented in the Eastern Corridor MIS document (OKI, April 2000). A summary of these alternatives, presented in Table 3.1, provides an overview of the broad range of alternatives that have been considered for the Eastern Corridor, and of the process which provided the basis for alternatives that have been developed and analyzed in the current Tier 1 phase.

Level of Evaluation	Alternatives Considered	Alternatives Dismissed
1: Universe of Alternatives	24 total: Light Rail (6 alternatives), Commuter Rail (3 alternatives), Busway (4 alternatives), Expanded Bus, Highway Improvements (4 alternatives), Ferry Service, High Occupancy Lanes (HOV; 3 alternatives), Transportation System Management (TSM), No Build	3 Light Rail alternatives, 1 Commuter Rail alternative, 1 Busway alternative, 1 Highway alternative, 2 HOV alternatives, Ferry
2: Feasible Alternatives	<u>12 total:</u> Light Rail (2 alternatives), Commuter Rail (2 alternatives), Busway (2 alternatives), Expanded Bus, Highways (3 alternatives), HOV (1 alternative), TSM	None (combined into 7 mode-based plans; see below)

Table 3.1. Overview of Alternatives Evaluated During the Eastern Corridor MIS



Level of Evaluation	Alternatives Considered	Alternatives Dismissed
	<u>7 Plans:</u> (multiple alternatives within each plan)	HOV
3: Seven Plans	Commuter Rail, Light Rail, Busway, Expanded Bus, Highway (I-275/I-471 Interstate Focus), Highway (SR 32/RedBank Road Focus [with Five Mile Connector]), HOV	Highway – SR 32/Red Bank Rd Focus with Five Mile Connector NOTE: this alternative was later added back into the final Recommended Plan, and the Five
	Non-highway based plans also included upgrade of SR 32 between I-275 and Ancor connector	Mile Connector component of this alternative was eliminated
		(Remaining Highway Plans combined into 5 mode-based plans
	<u>5 Plans:</u>	Plan B (other electrified light rail)
	Each of the 5 mode-based plans built on the existing transportation network, and included 10 committed projects, 8 common highway	Plan C busway alternatives
	improvements and various TSM improvements.	Plan E Highway alternatives: I-275 improvements from US 50 to I-71 and Wilmer Avenue/Wooster Pike
Refinement to Five Plans	Plan A: Commuter Rail (2 alternatives; diesel commuter rail Oasis line and electrified light rail Wasson line) Plan B: Light Rail (other electrified) (4	widening, plus two common highway improvements (US 50 widening from SR 131 to Perintowi and Wilmer/Beechmont/Wooster
	alternatives) Plan C: Busway (2 alternatives) Plan D: Expanded bus (9 new routes and	interchange; NOTE: this interchange improvement was late added back to final Recommended
	Mariemont Busway) Plan E: Highway Improvements (8 other improvements in addition to the 10 committed projects and 8 common improvements)	Plan)
4: Preliminary Recommended Plan	Transition to the preliminary recommended plan listed below involved deletion and refinement of some of the alternatives from the five mode-based plans, plus addition of new alternatives and TSM.	I-471/I-275 widening from Central Business District (CBD) to US 52 - replaced with relocated SR 32 Option 1 (Red Bank alignment and Five Mile Connector) and Option 2 (Beechmont alignment);
	Highway: 3 new highway improvements, 8 highway widenings and 1 new interchange; Bus/Expanded Bus: Mariemont Busway and	Relocated SR 32; Option 2 (Beechmont alignment) eventually eliminated;
	10 new/extended bus routes; Rail Transit: Oasis Line, plus preserve right- of-way along existing railroad for Wasson Line; TSM: 6 improvement components	Five Mile Connector eventually dropped from SR 32 Option 1; Newtown Bypass eliminated
5: Recommended Plan	The final Recommended Plan involved modification to several components and alternatives of the Preliminary Plan, plus addition of new alternatives/improvements for some modes.	No alternatives dropped from the Preliminary Plan, but several modified and some modal alternatives/improvements added t form the final Recommended Plan.
	<u>Highway</u> : 4 new highway capacity improvements, including Eastgate Parkway (I- 275 to SR 32), Eastgate Boulevard Extension (Clough Pike to SR 125), Ancor Connector (SR 32 to Broadwell Road) and Relocated SR 32 (Eight Mile Road [Eastgate area] to US 50	Final Recommended Plan also addressed previous (40+ year old) highway proposals considered for the Eastern Corridor area, with resolution to drop the previously proposed Five Mile Connector and

Table 3.1. Overview of Alternatives Evaluated During the Eastern Corridor MIS



Level of Evaluation	Alternatives Considered	Alternatives Dismissed
	[Red Bank area], including a new Little Miami River crossing at Red Bank Road/US 50); 7 highway widenings; 2 new/improved interchanges; 1 detailed bridge study <u>Expanded Bus</u> : Mariemont Busway, and 10 new and expanded routes <u>Rail Transit</u> : Oasis Line with 9 stations, plus preserve right-of-way along existing railroad for Wasson Line (electrified light rail) <u>TSM</u> : 6 operational improvement and transportation demand management (TDM) components, including 28 miles of bike trail expansion, ARTIMIS expansion along I-275, SR 32 and SR 125 and 14 intersection improvements and signal timing improvements along SR 32, SR 125 and Clough Pike, more frequent bus service on SR 125 and US 50 and 5 new park-n-ride facilities	decision to de-journalize the previously proposed Relocated US 50 corridor

3.2.2 MIS Alternatives Relative to Little Miami River and Ohio River Crossings

The Eastern Corridor is physically shaped in part by the Ohio and Little Miami Rivers. As such, river crossings for existing roadways in the corridor present constraints to travel. Furthermore, the Eastern Corridor exhibits a rich inventory of natural and cultural features including parks, historic sites, and ecological features such as woodlands and wetlands. These natural and cultural features present limitations on improving travel at river crossings and other locations within the Eastern Corridor.

Consequently, during review and refinement of the initial MIS Preliminary Recommended Plan as described in the table above, the MIS Task Force reviewed and addressed concerns related to potential new crossing(s) of the Ohio and Little Miami Rivers. This MIS review included evaluation of travel performance data, costs, public comments, position statements and subgroup discussion. The conclusion of this MIS review was a Task Force consensus to include, in the highway component of the MIS Recommended Plan, a Relocated SR 32 alternative on new alignment from Eight Mile Road in the Eastgate area to US 50 in Fairfax, and including a new Little Miami River crossing near Red Bank Road/US 50, as noted in Table 3.1 above (Row 5 – Recommended Plan). Alternatives considered and dismissed during this review process, and key decision-making factors are documented in the Eastern Corridor MIS (2020 Vision for the Eastern Corridor, April 2000), and summarized below.

Widening of I-471 and I-275 (including the I-471 bridge over the Ohio River)

As noted in Table 3.1 (Row 3 – Seven Plans), two of the initial plans evaluated in the MIS contained highway improvements: one included the widening of I-275/I-471 as its main component (Interstate Focus), while the other contained Relocated SR 32 and the Five Mile Connector as the main components (SR 32 Focus). The Task Force initially dropped the plan



focused on Relocated SR 32 due to potential environmental concerns associated with a crossing of the Little Miami River and a position statement from Anderson Township opposing the Five Mile Connector due to potential adverse impacts on the township, including greater traffic and congestion, and natural and social impacts. The I-275/I-471 widening was subsequently forwarded on for further MIS review.

Further evaluation of the I-275/I-471 widening improvements by the MIS Task Force conducted during review of the Preliminary Recommended Plan led to reconsideration of this alternative as the dominant highway component. Key issues identified from performance data included the following:

- Widening of I-275/I-471 (six to eight lanes) would add capacity, but at a high cost.
- Widening of I-275/I-471 would reduce congestion and delay within the Eastern Corridor by diverting traffic from arterials and local collectors within the Corridor to the interstates, but at the expense of added travel demand along I-275/I-471, thus loading new lanes along the interstate to near capacity (Level of Service [LOS] of E at some locations even with the new lane additions).
- LOS for the existing I-471 bridge over the Ohio River was E during peak hours in 1998, and projected to be F by 2020 for peak hours and most other periods of the day. The existing I-471 bridge cannot be widened due to arch structures, and conceptual engineering indicated the need for two additional structures over the Ohio River for added capacity.
- Performance results indicated that the diversion from arterial and collectors in Hamilton County to I-275/I-471 created an approximately 63% to 37% Ohio to Kentucky split in traffic at the I-275/I-471 interchange in Campbell County (Kentucky). The equity of this solution was questioned by the Task Force (i.e., that Kentucky would bear an undue burden in providing highway facilities to convey Ohio residents between the Eastern Corridor and the Cincinnati Central Business District), and Kentucky members of the MIS Task Force prepared a position statement stipulating that Kentucky would not support further widening of I-275/I-471 until further improvements were made in Ohio, specifically that Relocated SR 32 be included in the MIS Recommended Plan.
- Performance results showed that Relocated SR 32 would provide improved plan equity by creating a 51% to 49% split between Ohio and Kentucky traffic at the I-275/I-471 interchange. Analysis also showed that widening of the I-471 bridge would be required under either the Preliminary Recommended Plan or a modification that included Relocated SR 32 instead of the I-275/I-471 widening (mainline) improvements. Strong reaction was obtained from the public regarding the concept of widening the I-471 bridge.

Based on these considerations, the MIS Task Force determined that detailed study for the I-471 bridge widening would be included in the MIS Recommended Plan, but that the I-275/I-471 mainline improvements would be replaced by Relocated SR 32 in the Recommended Plan (without the Five Mile Connector, which was previously dropped) in that it offered the potential for significant transportation benefit within the Eastern Corridor.

Relocated SR 32 – Options 1 and 2

Although performance data showed travel benefits associated with Relocated SR 32, the MIS Task Force continued to recognize concerns regarding potential environmental impacts of a new bridge over the Little Miami River. Two options were considered during the MIS phase:



- Option 1 being the original Relocated SR 32 alternative under consideration, extending on new alignment from Red Bank Road/US 50 in Fairfax, across the Little Miami River with a new bridge, and continuing east to Eight Mile Road in the Eastgate area; and
- Option 2, extending from the existing US 50/SR 125 interchange along existing Beechmont Avenue to SR 32, following existing SR 32 to west of Newtown, then on new alignment from west of Newtown to Eight Mile Road in the Eastgate area; this option would cross the Little Miami River and floodplain on a widened existing Beechmont Levee and bridge structure as an alternative to creating a new crossing at this location.

A subgroup of the MIS Task Force was formed to review the two Relocated SR 32 options, and following evaluation, recommended that Option 1 be included in the MIS Recommended Plan, with certain provisions to mitigate adverse environmental impacts. Key factors that led to this recommendation are summarized below:

- Performance results indicated that both options provided travel benefits, but Option 1 performed more efficiently and was effective at addressing the long-term travel needs of the region.
- Option 2 would result in increased traffic volume on the existing Beechmont Levee, causing this facility to approach capacity by 2020, likely requiring further additional widening (lane addition and river crossing structure extension).
- Increased volume on the levee would require major modifications to existing interchanges at SR 32 and US 50, resulting in substantial impacts on existing residential and commercial development located at the north end of the levee in the community of Linwood. The Linwood community and residents of adjacent areas expressed concern and opposition to these impacts.
- Option 1 would reduce peak period volume on the existing Beechmont Levee, and reduce congestion in Mariemont. By comparison, Option 2 would increase peak volumes on Beechmont, increase traffic in coterminous locations (such as Mt. Lookout), and would not effectively reduce congestion in Mariemont.
- Option 1 would have greater potential for direct environmental impacts along the Little Miami River, whereas Option 2 would have greater potential for direct impacts on existing development (particularly in the community of Linwood).
 - Key concerns for Option 1 included wooded hillsides (east section), displacements (Newtown), archaeological and historical features, fit with recreational facilities and parks (golf courses, bike trails, soccer fields), aesthetics, noise (new noise source along the Little Miami River valley), and ecological features including wetlands, floodplains, and riparian communities.
 - Key concerns for Option 2 included hillsides (east section, same as Option 1), displacements (Newtown, SR 32, Linwood), fit with recreational facilities and parks (same facilities as Option 1, but added concerns at Little Miami River Park [Armleder Park] along the Beechmont Levee), aesthetics, noise (similar concerns as Option 1, but new noise at Little Miami River would be coupled with existing noise at Beechmont Levee), and ecological features including wetlands, floodplains and riparian corridors.
- Based on comparison of performance data and other information for the options, the Hamilton County Engineer's office prepared an analysis and position statement in support of Option 1, stating that this alternative would improve connectivity between Anderson Township and the rest of Hamilton County, and that Option 1 was considered to be environmentally responsible.



• The preponderance of input obtained from the public favored Option 1 over Option 2 based on performance and impacts to existing development, but expectations for careful follow-up on environmental concerns associated with Option 1 were stated.

The MIS Task Force included these general provisions for mitigating adverse environmental impacts in their recommendation of Option 1 as the solution for long-term regional travel demand needs:

- Relocated SR 32 would be a multi-lane controlled access parkway facility, and would not serve as any part of the interstate highway system.
- Traffic would be diverted to the existing interstate system through signage.
- The new alignment would follow existing rail grade where applicable.
- The new bridge over the Little Miami River would span the riparian corridor and avoid in-stream piers.
- Potential adverse impacts to the Little Miami River would be minimized by encouraging reforestation, observing floodplain regulations and/or preventing secondary development by purchasing easements, deeding property to non-profit organizations or other protective and conservation techniques (to be further developed as the project progresses).

The Eastern Corridor Task Force recommendation for Option 1, with provisions for mitigation, was confirmed by the OKI Board of Trustees and was incorporated in the regional long-term transportation plan.

3.3. CONCEPTUAL MODAL ALTERNATIVES

The Eastern Corridor MIS Recommended Plan (OKI, April 2000) identified transportation modes and concepts for addressing current and future transportation problems and travel demand in the Eastern Corridor, and was the starting point for the Eastern Corridor Tier 1 work program.

The first phase of alternatives development conducted early in Tier 1 consisted of the identification of conceptual alternatives, by mode, based on: a) transportation components identified in the MIS Recommended Plan and fit with project purpose and need, b) findings from the Eastern Corridor Land Use Vision Study, c) secondary source environmental inventory information, d) preliminary findings of initial travel demand modeling work, and e) preliminary engineering and planning considerations. Conceptual alternatives for new highway capacity, rail transit, bus transit and TSM were presented at the first round of public meetings held in May-June 2002, and were used to identify the study area needed for detailed environmental field work to be conducted during Tier 1 and feasible alternatives development. A summary of conceptual alternatives by mode is presented below.

3.3.1. Conceptual (Preliminary) Alternatives For TSM

TSM work for Tier 1 focused on building upon TSM projects contained in the Eastern Corridor MIS Recommended Plan, which included a mix of operational strategies, existing roadway



corridor improvements, as well as use of transportation demand management (TDM) strategies.

TSM development in the early stages of Tier 1 consisted of augmentation of recommendations included in the Eastern Corridor MIS. Additions to the original MIS TSM list were determined from four key input sources, including: a) review of local long range plans, including the OKI 2030 Regional Transportation Plan and the MetroMoves long range plan, to assure that components of these plans, as they relate to TSM, were accounted for, b) input from local jurisdictions including the Hamilton County Engineer, Anderson Township, Clermont County Engineer, OKI, Ohio Department of Transportation, SORTA/METRO, City of Cincinnati, City of Norwood, Villages of Fairfax, Mariemont, Newtown and Terrace Park, Columbia Township, City of Milford, Villages of Amelia and Batavia and Miami, Union, and Pierce Townships, c) review and coordination for fit with the Eastern Corridor land use vision plan, and d) evaluation of the roadway network and TSM project input by the Eastern Corridor study team.

Based on this effort, approximately 162 TSM projects were identified in the Eastern Corridor vicinity. A list and mapping of the location of these TSM projects is presented in: Eastern Corridor PE/EIS Summary Memorandum, Transportation System Management Preliminary Alternatives Update, URS Corporation, December 2002. This expanded TSM list is not likely to be implemented in its entirety for the Eastern Corridor based on costs, funding availability and relative benefits. Therefore, a screening process to identify priority TSM core projects was conducted, as further described in Chapter 3.4.1.

3.3.2. Conceptual Alternatives For Expanded Bus

Bus transit alternatives in Tier 1 were developed based on three key inputs, including: a) expanded bus service recommendations from the Eastern Corridor MIS (with the exception of the Mariemont busway, which was not adopted into OKI's TIP and therefore dismissed from further consideration in Tier 1), b) proposed bus expansion plans and program findings presented in the MetroMoves Regional Transit Plan (June 2002), and c) findings from the Eastern Corridor land use vision plan (May 2002).

Conceptual bus transit development in the early stages of Tier 1 focused on the identification of primary and secondary public transportation linkages in the Eastern Corridor for the 2030 planning horizon, and in the preliminary identification of possible expanded bus routes and bus transit hubs to serve these linkages. This information is presented in: Formulation of Preliminary Bus Transit Service Options, Eastern Corridor Multi-Modal Projects, Kimley-Horn and Associates, Inc., February 22, 2002 and Eastern Corridor Multi-Modal Projects, Development of Bus Transit Alternatives (power point presentation), Kimley-Horn and Associates, Inc, April 2002. Primary and secondary linkages identified for the Eastern Corridor are summarized in Table 3.2. Overall, the major centers of transit activity serving the Eastern Corridor emanate from two locations: 1) downtown Cincinnati, which is an economic, financial, retail, recreational and cultural center, and 2) the University of Cincinnati and surrounding medical facilities, which are important employment and activity centers in the region.



Public Transportation Linkages	Linkage Between
Primary Travel Demand Corridors	UC/Medical Complex & north Eastern Corridor Downtown Cincinnati & north Eastern Corridor UC/Medical Complex & northeast Eastern Corridor Downtown Cincinnati & northeast Eastern Corridor UC/Medical Complex & Mariemont area Downtown Cincinnati & Mariemont area UC/Medical Complex & Eastgate area Downtown Cincinnati & Eastgate area UC/Medical Complex & Anderson/Beechmont area Downtown Cincinnati & Anderson/Beechmont area
Secondary Travel Demand Corridors	Mariemont & Terrace Park/Milford/Indian Hill Mariemont & Eastgate area Eastgate area & Anderson/Beechmont area Anderson/Beechmont area & Mariemont Madisonville area & UC/Medical Complex Madisonville area & Downtown Cincinnati Mariemont & Madiera area and area to north Newtown area & Downtown Cincinnati Newtown area & UC/Medical Complex Newtown area & Eastgate area

Table 3.2. Summary of Conceptual Bus Transit Alternatives (Primary and Secondary Linkages)

Possible bus hub locations identified during conceptual bus system development included general locations in the Mariemont area, Newtown area, Madisonville area, Eastgate area, Anderson/Beechmont area and Milford/Indian Hill area. Further identification and refinement of bus hubs for the Eastern Corridor was conducted during the development of feasible alternatives (see Chapter 3.4).

3.3.3. Conceptual Alternatives For Rail Transit

Conceptual rail transit alternatives were developed early in Tier 1 for two generalized rail transit corridors, as established in the Eastern Corridor MIS Recommended Plan. These conceptual alternatives are summarized in the Table 3.3 and are described in detail in: Eastern Corridor PE/EIS Technical Memorandum, Summary of Conceptual Rail Transit Alternatives, URS, February 22, 2002 and Eastern Corridor Multi-Modal Projects, Summary of Preliminary Rail Transit Alternatives (power point presentation), URS, April 19, 2002.

Table 3.3. Summary of Conceptual Rail Transit Alternatives	
Rail Corridor	Key Components
Oasis-Norfolk Southern (Oasis Line)	<u>Termini:</u> Cincinnati CBD (Central Riverfront) to the I-275/US 50 interchange in Milford; follows existing Oasis and Norfolk Southern rail lines; total length about 16.7 miles <u>Proposed Technology:</u> Diesel Multiple Units
	<u>Alternative Alignments:</u> Main alignment following existing rail (as described above) and two alternative alignment segments - one located in Riverfront area (using existing track through Sawyer Point and Yeatman's Cove and terminating near Great American

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Rail Corridor	Key Components
	Ball Park) and one in Wilmer Avenue/Wooster Pike area to provide more direct service to Lunken Airport.
	<u>Termini:</u> Proposed I-71 Light Rail Transit (LRT) Xavier/Evanston Station to I-275/SR 32 interchange in Eastgate; follows existing Wasson rail line and proposed improved SR 32 corridor; total length about 11 miles.
Wasson- Relocated SR 32	Proposed Technology: Electrically Powered Light Rail Vehicles
(Wasson Line)	<u>Alternative Alignments:</u> Main alignment as described above and "Mariemont Spur" alternative that branches off existing NS railroad at Erie Avenue, proceeding east adjacent to Erie, over Red Bank and north leg of the Oasis line, through Fairfax and Mariemont using the former Cincinnati, Milford and Blanchester Interurban right-of-way.

Table 3.3. Summary of Conceptual Rail Transit Alternatives

In general, legs of both the Oasis Line and Wasson Line were described to be interchangeable east of the Little Miami River. In addition, connections between conceptual rail alignments east and west of the Little Miami River were dependent on potential improvements to the US 50/Red Bank Road/Wooster Pike interchange with relocated SR 32, and conceptual rail alignments paralleling SR 32 were dependent on the nature of proposed highway improvements to SR 32 and the SR 32/I-275 interchange. Adjustments to the conceptual rail alternatives for multi-modal fit were made during feasible alternatives development.

3.3.4. Conceptual Alternatives For Highway

The development of highway alternatives in Tier 1 focused on new highway capacity improvements for the Red Bank Road/SR 32 Corridor to Eastgate, as established in the MIS Recommended Plan. For development of conceptual alternatives, this corridor was divided into four segments, defined by existing road function, access points and termini, existing and future land use, local transportation needs, independent segment utility, potential multi-modal network connectivity, anticipated new highway section requirements, and new highway corridor footprint opportunities and constraints, and included the following:

- Segment I (Red Bank Corridor, I-71 to US 50),
- Segment II (US 50/Little Miami River River Crossing to Newtown Road),
- Segment III (Newtown Road to Mt. Carmel-Tobasco Road), and
- Segment IV (Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road).

Conceptual highway alternatives are summarized in the Table 3.4 and are described in detail in: Eastern Corridor PE/EIS Technical Memorandum, Summary of Conceptual Highway Alternatives, Balke American, September 2002.



Segment	Conceptual Alternatives (Corridors)
Segment I: I-71 to US 50	 Generally one conceptual corridor (unnamed) following existing Red Bank Road and including the following key components: Improved intersection or urban interchange at Madison Road and Erie Avenue
 (Red Bank Corridor) Major modifications to US 50 interchange with tie-in to V Controlled access throughout Modified access at Duck Creek Road 	
Segment II: US 50/Little Miami River Crossing to Newtown Road	 Generally five conceptual corridors (unnamed) at three general crossing locations (north, middle and south) of the Little Miami River (LMR) and river bottom; key components included: No access points along river bottom area, except for potential recreational purposes All alternatives include rail transit tie-in, with potential rail transit lines following along the new roadway alignment to maximize right-of-way efficiency and minimize number of new LMR crossings New signalized intersection at Newtown Road to be coordinated with rail transit station and access to park and rides
Segment III: Newtown Road to Mt. Carmel- Tobasco Road	 Generally five conceptual corridors (unnamed) through Newtown, mining/industrial operations and wooded hillsides above SR 32; key components included: At-grade intersection for tie-in to Round Bottom, Edwards and Little Dry Run roads At-grade intersection for tie-in of Ancor access connector to Broadwell Road area Grade-separated intersection for tie-in of Mount Carmel Road and possibly Eight Mile Road
Segment IV: Mt. Carmel- Tobasco Road to Olive Branch- Stonelick Road	 Three conceptual corridors in Eastgate area, including: Alternative A: new capacity and access focusing on SR 32 only with conventional lane configurations Alternative B: New capacity and access focusing on SR 32 only with collector/distributor configuration Alternative C: New capacity and access focusing on both SR 32 and I-275 with collector/distributor lane along I-275

Table 3.4. Summary of Conceptual Highway Alternatives

Segments II and III initially contained two additional conceptual alternatives, both extending along the south side of existing SR 32 through the Newtown area. These alternatives were dismissed from further consideration in the early stages of alternatives development due anticipated impacts (parks and public lands, woodlands, streams), conflict with future (planned) land use and development in the Newtown area, and conflict with other transportation modes (specifically rail) being considered in conjunction with new highway through this area.

3.4. FEASIBLE ALTERNATIVES DEVELOPMENT

Conceptual alternatives for new highway capacity, rail transit, bus transit and TSM were presented at the first round of public meetings held in May-June 2002, and were used to identify the study area needed for feasible alternatives development. Input from the public meetings generally confirmed the modal concepts and the study area presented.

From this point, detailed environmental studies within the study area were conducted, and preliminary feasible alternatives were developed based on: a) the footprint of the conceptual modal corridors described above, b) further preliminary engineering and design coordination



for multi-modal connections, c) impact avoidance and minimization based on results from Tier 1 environmental field studies, d) fit with land use vision goals, e) preliminary findings from traffic demand modeling work and f) public and resource agency input.

Characteristics of Tier 1 Feasible Alternatives

Feasible alternatives described in this Tier 1 DEIS are not specific alignment locations, but alternative corridors that will be further developed during Tier 2. Sufficient preliminary engineering work was conducted in Tier 1 to understand the spatial requirements of the various modal alternatives, but alignment location and configuration details have not been established. In addition, access details have not yet been developed, including intersection, interchange, bus/rail hubs and other ancillary connections. Instead, access points for all modes have been treated equally and general spatial requirements have been identified in order to establish an approximate expected footprint area. Overall, the work conducted in Tier 1 identifies the expected range of conditions, costs, and inpacts for multi-modal alternatives that will be further developed during Tier 2. Tier 2 work may result in minor revisions to the locations of the alternatives as they are presented in this Tier 1 DEIS.

At this stage in project development and for the purposes of this Tier 1 DEIS, detailed descriptions of logical termini for the various components of the multi-modal plan have not been finalized. However, the feasible alternative study corridors and mapping for the multi-modal plan included in this Tier 1 DEIS are consistent with adopted long-range plans for the region, meet logical connectivity and functional need requirements identified in those plans, and are conservatively configured so to geographically encompass a reasonable and feasible range of possible detailed terminal treatments, such as transit station layouts, ramp geometrics, and access roads. Tier 2 will establish final footprint and logical termini for all of the alternatives within the multi-modal plan.

Feasible Alternatives by Mode

Preliminary feasible alternatives were presented for review at the second round of public meetings held in May 2003. Input from the meetings generally supported the preliminary alternative alignment locations that were presented. Following these meetings, several feasible alternatives were added or modified based on public input, further preliminary engineering, environmental impact avoidance and minimization and other project considerations. Feasible alternatives by mode are described in Chapter 3.4.1.

Feasible Alternatives by Geographic Area Within the Eastern Corridor

A primary effort was made during the development of feasible alternatives to coordinate with work previously conducted for the Eastern Corridor land use vision plan, and to fit with the findings and goals of that vision plan. Feasible alternatives developed for the project, therefore, were grouped together by six geographic areas, generally corresponding to the focus areas used in the land use vision process. This grouping took into account how different components of a proposed multi-modal transportation plan within an area worked together to address a particular transportation need or local and/or regional capacity issue. Feasible multi-modal alternatives by area are described in Chapter 3.4.2. Key environmental issues and



preliminary impacts associated with feasible alternatives, as well as discussion of overall fit with goals of the Eastern Corridor land use vision plan, are further described in Chapter 5.

3.4.1. Feasible Alternatives By Mode

Transportation System Management (TSM)

Eastern Corridor TSM Framework: The initial TSM project list compiled during conceptual alternatives development was updated in December 2003 based on additional input from local jurisdictions. This included input from the Hamilton County Engineer, Anderson Township, Clermont County Engineer, OKI, Ohio Department of Transportation, SORTA/METRO, City of Cincinnati, City of Norwood, Villages of Fairfax, Mariemont, Newtown and Terrace Park, Columbia Township, City of Milford, the Villages of Amelia and Batavia and Miami, Union, and Pierce Townships. This updated list (see Appendix F) includes a total of 187 TSM framework projects located in and adjacent to the project area. This TSM framework, however, is not likely to be implemented in its entirety for the Eastern Corridor based on costs, funding availability and relative benefits. Therefore, a screening process to identify priority TSM core projects was conducted, as described below.

Eastern Corridor TSM Core Projects: TSM core projects were identified by sorting and selecting projects from the list of 187 projects included in the TSM framework. In general, the Eastern Corridor TSM projects include operational strategies such as improved signal timing, existing roadway corridor improvements, as well as use of transportation demand management (TDM) strategies. Projects were selected for the core list based on anticipated improvement to the multi-modal transportation services within the Eastern Corridor, ability to meet transportation needs such as safety and congestion, and other issues such as funding availability and project readiness.

Of the total 187 TSM projects planned for the Eastern Corridor and surrounding area, approximately 55 were identified as core projects based on evaluation by the project team. These TSM core projects are shown on Figure 3.1 and listed below. The TSM list will be updated as the project financial strategy is finalized and TSM priorities are refined in Tier 2.

Intersection/Signal Improvements (15 total)

- Edwards, Madison and Wasson Road
- Edwards, Markbreit and Williams
- 28th, Millsbrae and Robertson
- Madison and Plainville Road
- Brotherton, Erie and Murray
- Columbia Parkway at Delta/Tusculum/Stanley
- Delta Avenue at Eastern and Kellogg Intersection, replace railroad bridge
- Five Mile Road/Nimitzview
- Asbury Road and Beechmont
- Clough Pike at Shayler Road
- Clough Pike at McMann Road
- Clough Pike at Mt. Carmel Road
- Clough Pike at SR 32



- Old SR 74 at Rumpke Road
- Gleneste-Withamsville at SR 125

<u>Roadway Corridor Improvements</u> (includes projects such as roadway safety/lighting improvements, turn lane addition, and signal timing coordination) (34 total)

- Dana Avenue from I-71 to Victory Parkway
- Edwards Road north of Hyde Park Square
- Ridge Avenue from Madison to Highland
- Kennedy Connector (Duck Creek to Ridge)
- Red Bank from US 50 to Fair Lane
- Red Bank from Fair Lane to Brotherton
- Red Bank from Brotherton to Hetzel
- US 50 (Wooster Pike) in Fairfax
- Safety Improvements on US 50 between Walton Creek and Newtown Road
- Traffic signal coordination Newtown Road between SR 32 and Valley Drive
- Valley Drive at Church Street and at Round Bottom Road (signals)
- SR 32/Round Bottom Road improvements
- Eight Mile Road from SR 32 south to top of the Hill
- Clough Pike from Wolfangle Road to SR 32
- Newtown Road from Clough Pike to Ragland
- Ragland Road and Turpin Road upgrade
- Signal timing and coordination along SR 125 (Beechmont Avenue) Hamilton County
- Beechmont Avenue lighting/safety Anderson Township
- US 50 through Terrace Park (corridor improvement/bike path)
- Signal/safety upgrade at Wooster Pike (US 50) Terrace Park
- Beechwood Road extension at Round Bottom Road
- SR 28 from I-275 to Bypass 28
- Wolfpen Pleasant Hill to SR 131
- US 50 in Milford (bridge work and signals)
- US 52 (Eastern Avenue) reconstruction from Eggleston to Rookwood railroad overpass
- Kellogg Avenue from Delta to Congress
- Kellogg Avenue from Stanley to Salem
- Kellogg Avenue (US 52) Salem to I-275
- Wilmer Avenue
- Wooster Pike from Beechmont to Red Bank Road
- Old SR 74 Schoolhouse Road to SR 32
- Old SR 74 Summerside Road to Gleneste-Withamsville Road
- Aicholtz Road improvements
- Merwin Ten Mile Road extension to Ferris with cul-de-sac at McMann

More Frequent Bus Service (2 total)

- US 50
- SR 125



Park-and-Ride Facilities (2 total)

- Newtown Road and US 50
- I-275 at SR 125

Interchange Improvements (2 total)

- Beechmont Avenue/Wilmer/Wooster
- Beechmont and US 50 Columbia Parkway interchange (including new ramp)

Expanded Bus Alternative

The expanded bus plan for the Eastern Corridor was refined using RTDM modeling output and further refinement of conceptual routes, as presented in: Refinement and Further Evaluation of the Expanded Bus Alternative, Eastern Corridor PE/EIS Multi-Modal Projects (Kimley-Horn and Associates, February 2003). The refined bus plan was also coordinated to be consistent with the MetroMoves Regional Transit Plan (June 2002), coordination with rail transit proposed for the Eastern Corridor, and findings of the Eastern Corridor Land Use Vision Plan (May 2002). Overall, the MetroMoves plan focused on expanding the current, primarily city-based system, to one that more effectively serves the entire Hamilton County and greater Cincinnati metropolitan area. Key objectives of the MetroMoves plan are to tailor the bus system to the needs of individual communities and to provide efficient connection to the planned regional rail network. This is to be accomplished by development of a hub-oriented bus system, with transit hubs placed across the county and linked by new crosstown and other direct routes to key destinations.

Consistent with MetroMoves goals, the expanded bus plan for the Eastern Corridor, shown on Figure 3.2, contains three main components: primary service routes for serving identified primary and secondary linkages, new community circulator and feeder routes (bus feeders to rail transit), and transit hubs.

<u>Primary (Expanded Bus) Service Routes:</u> Primary bus service routes in the Eastern Corridor consist of a combination of existing bus routes, with some modifications, and new crosstown routes to key destinations in the corridor linked by transit hubs. As determined during the development of conceptual bus alternatives for the Eastern Corridor, the major centers of transit activity serving the project area emanate from two key locations: 1) downtown Cincinnati, a primary economic, financial, retail, recreational and cultural center, and 2) the University of Cincinnati and surrounding medical facilities, which are important employment and activity centers.

The expanded bus alternative for the Eastern Corridor was developed using these major centers of transit activity as focal points. Primary routes comprising the expanded bus alternative are presented in Table 3.5.



Table 3.5.	Primary Service Route Components of the Expanded Bus
	Alternative for the Eastern Corridor

Description	Origin	Destination
Primary Linkage Routes:		
	Springfield Pike	University of Cincinnati
 Service between two or more major hubs 	Springfield Pike	Government Square (downtown Cincinnati)
 Serve primary travel demand corridors 	Kenwood & Montgomery	University of Cincinnat
 Travel speeds generally no less 	Kenwood & Montgomery	Government Square
than 35 mphPeak frequency: three buses an	Plainville & US 50	University of Cincinnat
hour (min)	Plainville & US 50	Government Square
• Non-Peak frequency: two buses an	Eastgate Mall	University of Cincinnat
hour (min)Possible limited stops	Eastgate Mall	Government Square
Consider priority bus treatment	Milford	Government Square
	Beechmont Mall	University of Cincinnat
Secondary Linkage Routes:		
	Beechmont Mall	Miami & Montgomery
 Service between major hubs and surrounding communities 	Milford	University of Cincinnat
Service secondary travel demand	Eastgate Mall	I-275 & US 52
corridors Travel speeds between 20-30 mph 	I-275 & US 52	Seymour & Springfield Pike
 Peak hour frequency: two buses an hour (min) Non-Peak frequency: one bus an 	Anthony Wayne & Springfield	University of Cincinnat
hour (min)	Section & Ridge Road	University of Cincinnat
 Serve all stops along route 	Eastgate Mall	Beechmont Mall
	Kenwood - Montgomery	Plainville & US 50

Preliminary locations of service routes associated with this expanded bus plan are illustrated by area in Chapter 3.4.2.

<u>Community Circulator and Feeder Routes:</u> Circulator routes through neighborhoods and bus feeder routes will serve to connect local employment, shopping, housing and entertainment areas with transit hubs and the Eastern Corridor rail transit system. These routes would either operate on fixed routes or be established in a radius around a hub. Preliminary community circulator and feeder routes in the Eastern Corridor are listed in Table 3.6.

Table 3.6. Circulator and Bus Feeder Route Components of the
Expanded Bus Alternative for the Eastern Corridor

Rail Line	Circulator Routes	Feeder Routes
Oasis Rail Line	Columbia Tusculum Connector Eastgate Fairfax Mariemont Connector Lunken Linwood Connector MM 309 (UC / Hospital area) Milford Xavier Evanston	Plainville & US 50 to East End Station I-275 to Seymour Eastgate to Newtown Seymour Reading to Beechmont East End to UC Red Bank to UC



Rail Line	Circulator Routes	Feeder Routes
Wasson Rail Line	Eastgate Fairfax Mariemont Connector Hyde Park Connector MM 309 (UC / Hospital area) Milford Oakley Connector Xavier Evanston	Happy Hollow Road to Newtown I-275 to Seymour Main Center Beechmont Kenwood to Red Bank Reading to Paxton

 Table 3.6. Circulator and Bus Feeder Route Components of the

 Expanded Bus Alternative for the Eastern Corridor

Key communities proposed to be served by these routes include: Xavier University, Evanston, Norwood, Oakley, Hyde Park, Mt. Lookout, Fairfax, Madisonville, portions of Mariemont and Indian Hill, portions of Milford and Miami Township, portions of East End, Columbia-Tusculum and Linwood, and the Lunken Airport area.

Transit Hubs: MetroMoves identified five hub types in the regional transit plan based on size and facilities, four of which are represented in the Eastern Corridor: the on-street mini-hub, consisting of enhanced shelters developed within the existing road and sidewalk right-of-way; the off-street hub with parking, consisting of off street loading bays, dedicated passenger waiting shelters and parking area; the hybrid hub, consisting of a combination of on-street stops and off-street bays; and the on-Several hubs identified in street storefront. MetroMoves, including the Oakley Hub, Anderson Hub, Milford Hub, Eastgate Hub, Avondale Hub, Walnut Hills/Peebles Corner Hub, Uptown Hub, and Newtown Hub, included joint development area for facilities such as a job training center, day care center, drug store, etc., for rider convenience and to further encourage transit use.



Transit hubs proposed for the Eastern Corridor are shown on Figure 3.2 and summarized in the table below. Preliminary location of each of these twelve hubs was based on information presented in MetroMoves, coordination with rail transit proposed for the Eastern Corridor, findings of the Eastern Corridor land use vision plan and the results of preliminary impact assessment.



Eastern Corridor			
Hub Name	Hub Type	Facilities and Passenger Amenities	Preliminary Location
Anderson / Beechmont Hub	Off-Street with Park-and-Ride	6 off-street bays; 250 park-and-ride spaces; restrooms, shelters, information kiosk, vending machines	Former Beechmont Mall, at corner of Beechmont and Five Mile Roads
Avondale Hub	On-Street Stop/Storefront	4 on-street stops and 1 off- street bay; shelter	Northwest corner of Reading Road and Rockdale Avenue
Eastgate Hub	Off-Street with Park-and-Ride; will serve both bus and rail transit (Wasson Line)	3 off-street bays; 300 park-and-ride spaces; restrooms, shelters, information kiosk, vending machines	Along Aicholtz Road between Eastgate Boulevard and Eastgate Square Drive, in vicinity of SE quadrant of I- 275/SR 32 interchange
Madisonville Hub	On-Street Mini-Hub	4 on-street stops (enhanced shelters)	North side of Madison Road between Ravenna Street and Whetsel Avenue
Milford Hub	Off-Street with Park-and-Ride; will serve both bus and rail transit (Oasis Line)	3 off-street bays; 200 park-and-ride spaces; restrooms, shelters, information kiosk, vending machines	Along existing Norfolk Southern corridor (proposed Oasis rail line) between Round Bottom Road and Chamber Drive, in vicinity of SW quadrant of I-275/US 50 interchange
Oakley Hub	On-Street Mini-Hub with Parking	4 on-street stops (enhanced shelters); 50 park-and-ride spaces	Northwest corner of Madison Road and Ridge Avenue
Uptown Hub	Hybrid Hub	6 on-street bays and 2 off- street bays; shelters and vending machines	At northwest corner of Vine Street (Jefferson Avenue) and Martin Luther King Drive (edge of USEPA property)
Walnut Hills/Peebles Corner Hub	Hybrid Hub	6 on-street bays and 2 off- street bays; shelters and vending machines	Along east side of Gilbert Avenue between William Howard Taft Road and E. McMillan Street
Xavier / Evanston Hub	On-Street Mini Hub; general hub location will serve both bus and light rail (I-71 light rail corridor and Wasson rail line)	2 on-street stops (enhanced shelters); 460 park-and-ride spaces shared use with Xavier University owned lot; final hub location/configuration will be coordinated / integrated with proposed rail transit in the area (I-71 LRT and/or Eastern Corridor Wasson Line)	Along Dana Avenue (north side) between Newton Avenue and Montgomery Road, in vicinity of proposed I-71 LRT Xavier Evanston Station
Cincinnati Riverfront Transit Station	To be coordinated with existing transit station; will serve both bus and rail transit (Oasis Line)	Not included in MetroMoves Plan; to be coordinated with existing transit station	At existing Riverfront Transit Center under Second Street

Table 3.7. Transit Hub Component of the Expanded Bus Alternative for the Eastern Corridor



Table 3.7. Transit Hub Component of the Expanded Bus Alternative for the Eastern Corridor

Hub Name	Hub Type	Facilities and Passenger Amenities	Preliminary Location
Red Bank/Fairfax Transit Station	Off-Street with Park-and-Ride; will serve both bus and rail transit (Wasson and Oasis Lines)	Not included in MetroMoves Plan; preliminarily, facilities to include 3 off-street bays with 200 park-and-ride spaces	Along Wooster Pike, just east of proposed new Red Bank/US 50 interchange (between Wooster Pike and the Little Miami River)
Newtown Transit Station	Off-Street with Park-and-Ride; will serve both bus and rail transit (Wasson and Oasis Lines)	Not included in MetroMoves Plan; preliminarily, facilities to include 3 off-street bays with 200 park-and-ride spaces	Along Newtown Road between Valley Drive and SR 32 (dependent upon location of relocated SR 32)

Feasible Alternatives for Rail Transit

Key features of the Oasis and Wasson rail lines are described below and shown on Figures 3.3a and 3.3b.

As noted previously in this Chapter, feasible alternatives for all modes described in the Tier 1 DEIS are not specific alignment locations, but alternative corridors that will be further developed during Tier 2. Therefore, the rail transit alternatives described below represent the range of options within the Eastern Corridor study area that will be used during Tier 2 work as the starting point for more specific alignment and access development. Tier 2 work may result in minor modifications to the location of the rail alternatives described below, however these alternatives represent the range of conditions, costs, and impacts expected by the project.

Oasis Line

<u>Description:</u> The Oasis Line is a rail transit corridor under consideration in the Eastern Corridor extending from downtown Cincinnati to Milford. Proposed technology is Diesel Multiple Unit (DMU).

The Oasis corridor begins in downtown Cincinnati along the riverfront at the existing Riverfront Transit Center located under Second Street, and extends east for approximately one mile to the vicinity of the Montgomery Inn Boathouse. Several alternatives, using either existing rail or on new rail alignment, are under consideration in this riverfront area.

From the Boathouse, the Oasis Line continues east, following existing rail between the Ohio River and US 50 through East End and Columbia-Tusculum. It then proceeds northeast through the Lunken Airport



area, either on existing rail paralleling Wooster Pike, or on new rail alignment following Wilmer Road. From Lunken Airport, the Oasis corridor continues northeast along existing rail



alignment through the community of Linwood to the vicinity of a proposed new Red Bank/US 50 interchange near Fairfax.

From the new interchange area, the Oasis line diverges from the existing rail corridor and extends east across Little Miami River, following the proposed relocated SR 32 roadway corridor, across the Little Miami River floodplain and through Newtown to a proposed multi-modal convergence point in the Ancor area. From the Ancor area, the Oasis Line diverges from the relocated SR 32 highway corridor and proceeds northeast, generally following existing Norfolk Southern freight rail right-of-way to the I-275/US 50 interchange at Milford Parkway. Total length of the Oasis Line is about 17.1 miles.

Multiple alternatives are under consideration for the Oasis Line at two locations:

- <u>Riverfront to Boathouse Alternatives</u> Two basic rail alternatives (with one an operational/staging variant) are under consideration in the downtown Cincinnati area between the Riverfront Transit Center and the Montgomery Inn Boathouse, as presented in the Oasis/Riverfront Rail Transit Study, Eastern Corridor PE/EIS Part A Evaluation of Alternate Alignments (Balke American, November 2003), including:
 - Oasis Alternative 1A This alternative stems from initial studies conducted by the City of Cincinnati, and, in general, consists of rail on new alignment from the Montgomery Inn Boathouse area extending west on elevated alignment over Pete Rose Way, then following along the north side of Pete Rose from the east to a direct entrance into the existing Riverfront Transit Center.
 - Oasis Alternatives 2 and 3 Alternative 2 is a rail option that closely follows existing rail trackage along the riverfront, with structurally elevated sections in critical park and pedestrian areas, and including access to key riverfront attractions and access to the Riverfront Transit Center via the west portal. Alternative 3 is an at-grade variant of Alternative 2.
- <u>Lunken Airport Alternative</u> This alternative diverges from the existing rail corridor along Wooster Pike near Lunken Airport, following Wilmer Road and tying back into existing rail right-of-way near Redcomb Junction. The purpose of this alternative is to provide more direct service to Lunken Airport, and commercial and recreational development in this vicinity.

<u>Station Areas:</u> Ten preliminary station locations are under consideration for the Oasis Line, as described below (listed west to east). Preliminary locations were determined based on avoidance and minimization of potential impacts to known environmental resources in the area, and design and operational considerations.

- <u>Cincinnati Riverfront Transit Center Intersection of Second Street and Walnut Street SW Quadrant:</u> Preliminary location of this rail/bus transit station is the lower level of the Riverfront Transit Center below Second Street in downtown Cincinnati. It is assumed that the station platform would be located between Walnut and Main Streets, providing a close transfer location to the proposed Banks Station of the I-71 Light Rail Transit, as well as direct circulation connections with the National Underground Railroad Freedom Center. No assumed parking spaces are associated with this station, although it is located adjacent and physically connected to the Block #3 public parking garage and other developed areas as part of the Banks redevelopment project.
- <u>East Riverfront Station Intersection of Eastern Avenue (US 52) and Adams Crossing SE Quadrant:</u> Preliminary location of this rail station is just east of the Montgomery Inn Boathouse between the



existing railroad alignment and the existing parking lot for the Boathouse and Theodore Berry International Friendship Park. It is assumed that this station would be primarily pedestrian oriented with potential parking integrated with the adjacent existing lot, and direct pedestrian linkages to adjacent parks and proposed Adam's Landing residential development. Access to the station could be provided by the existing parking lot drive off of Eastern Avenue.

- Pendleton/East End Station Eastern Avenue (US 52) and Columbia Parkway (US 50) near intersection with Torrence Parkway: Preliminary location of this rail station is along the existing railroad alignment in the vicinity of the intersection of Columbia Parkway and Torrence Parkway, approximately 600 feet east. It is assumed that there would be vehicular access from both Columbia Parkway and Eastern Avenue. Due to topographic constraints, no extensive parking would be provided on-site with the exception of a possible drop-off area. This station scenario would require intersection modifications on Eastern Avenue and Columbia Parkway to allow for new vehicular and pedestrian access to the site.
- <u>Columbia/Tusculum Station Intersection of Columbia Parkway and Delta Avenue SW Quadrant:</u> Preliminary location of this rail station is near the existing railroad overpass just west of Delta Avenue and south of Walworth Avenue. Access would be provided from Walworth Avenue (modifications to Walworth would be required). No substantial parking would be provided on-site beyond drop-off areas and some handicap spaces, although there are opportunities for parking on nearby parcels. The station site could potentially be integrated with the neighborhood master plan for commercial development in this area.

An alternative location for this station is along the existing rail alignment just *west* of Delta Avenue, which may better serve a new school (East End High School) being planned for this area. Specific station location would need to be coordinated with site plans for the new school and a recreational area (Rakestraw) occurring in the vicinity.

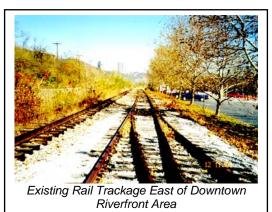
- <u>Lunken Airport Station Opposite Lunken Airport along Wilmer Avenue</u>: Preliminary location of this
 rail station is on the west side of Wilmer Avenue just north of the Columbia Baptist Cemetery and
 across from the Lunken Airport terminals.
- <u>Beechmont Station Intersection of Beechmont Avenue (SR 125) and Wooster Pike SW Quadrant:</u> Preliminary location of this rail station is at the intersection of the existing rail alignment and the Beechmont Avenue Viaduct, where the station would be placed at grade, below the existing intersection. An alternative location is at the intersection of a proposed new rail line with Wilmer Road (the Lunken Alternative for the proposed Oasis Line). Final location of this station and access details are dependent upon potential US 50/Beechmont/Wilmer interchange modifications proposed for this vicinity (an Eastern Corridor TSM project) and final rail alignment location (i.e., on existing rail or new alignment).
- <u>Red Bank/Fairfax Transit Station At location of proposed new Red Bank/US 50 Interchange (same as Wasson Line):</u> Preliminary location of this inter-modal transfer station is just east of the proposed new Red Bank Road/US 50/Wooster Pike interchange, on the south side of proposed relocated SR 32 between existing Wooster Pike and the Little Miami River. Station access and limited parking would be provided off of Wooster Pike. Station layout and configuration would be coordinated with bus station and relocated SR 32 roadway improvements proposed for the vicinity. Rail platforms would be elevated from the station/parking area at this location (grade separated).





- <u>Newtown Transit Station</u> Intersection of proposed relocated SR 32/rail transit alignment with <u>Newtown Road (same as Wasson Line)</u>: Location of this rail/bus transit station is dependent on the location of proposed relocated SR 32 in this vicinity. In general, the station and associated parking would be located on the south side of relocated SR 32 where it intersects with Newtown Road along Newtown Road between Valley Drive and existing SR 32. Station and parking access would be from Newtown Road; pedestrian access would also be provided.
- <u>Ancor Station Near intersection of proposed Wasson railroad alignment and Broadwell Road:</u> Preliminary location of this rail station is along the proposed Wasson Line on the south side of its intersection with Broadwell Road. This would be an auto-oriented station with opportunity for parking and shared parking with adjacent commercial/industrial facilities and planned development. Location of this station could be coordinated with plans for an Ancor Connector off SR 32.
- <u>Milford Hub In vicinity of existing I-275/US 50 Interchange SW Quadrant:</u> Preliminary location of this rail/bus transit station is west of the I-275/US 50 interchange along the north side of the proposed Oasis Line between Chamber Drive and Round Bottom Road. Chamber Drive is assumed to provide access, with no access from Round Bottom Road. There is potential for substantial parking at the site and shared parking arrangements with adjacent property owners. This would be a terminal station for the proposed Oasis rail line.

Existing Rail: The section of the proposed Oasis Line from downtown Cincinnati to the Red Bank area follows existing rail right-of-way owned by SORTA, with physical rail assets (track, signals, etc.) owned by the Indiana & Ohio Railroad (I&O), who provides freight service in accordance with an agreement with SORTA. SORTA owns a second set of unused tracks, parallel to the active I&O track, along this rail corridor (double track capacity). Freight service between downtown Cincinnati and Red Bank is currently limited to two customers. Existing rail rightof-way along this section of the Oasis Line varies from about 40 feet to 100 feet in width, and is



assumed adequate for at least two tracks throughout. Approximately eight bridge structures occurring in this section will require rehabilitation and reuse, and numerous at-grade crossings will need to be up-graded or eliminated. The former Undercliff Yard, located opposite Lunken Airport and currently used by I&O for car storage, is identified as a possible transit vehicle storage and maintenance facility for the proposed Oasis Line.

The section of the proposed Oasis Line from the Ancor area to I-275/US 50 in Milford follows existing rail right-of-way owned by Norfolk Southern (NS). NS has not determined if they will consider use of shared trackage with rail transit, but has indicated receptiveness to possible shared use of a portion of their right-of-way if a minimum 40-foot separation is maintained between the existing NS track and any new transit track. The preliminary alignment corridor for the Oasis Line, developed to reflect this criteria, is located generally parallel to, but offset from the existing track in this section from Ancor to Milford. Rail transit in this reach will likely require crossing of the existing NS track at several locations.



General Design and Operational Considerations for the Oasis Line:

The following goals and guidelines were established for the Oasis Line during the Tier 1 process that are to be carried forward to detailed development in Tier 2:

- General Considerations:
 - Oasis Line is proposed as a dual track facility, and most of the existing track will require removal and reconstruction.
 - Existing rail right-of-way is generally wide enough to accommodate a proposed two track facility from downtown (Boathouse area) to Red Bank, however new right-of-way is expected to be required where the Oasis Line parallels the existing NS rail corridor from the Ancor area to Milford, assuming NS will not allow shared freight/transit usage.
 - DMU technology proposed for the Oasis Line cannot be operated concurrently with freight traffic, and any shared track usage will require implementation of temporal separation of transit and freight operations for joint operation.
- Considerations from Riverfront area to Boathouse:
 - Complex geometry is required to connect Riverfront Transit Center to existing SORTAowned right-of-way near the Boathouse, including potential grade separations (elevated) sections and potential encroachment on Pete Rose Way and/or the front portion of the FirstStar Center (Oasis Alternative 1a).
 - Oasis Line development is to be coordinated with bus operations in and around Riverfront Transit Center and possible connection to I-71 LRT corridor.
 - Interfacing design with existing parkland in the riverfront area; Oasis Alternatives 2 and 3 in this area include at-grade or structurally elevated sections in critical park and pedestrian areas.
- <u>Considerations from Boathouse to Lunken Airport:</u>
 - o Replacement or modification of the existing Eastern Avenue Rail overpass.
 - o Coordination with I&O Railroad for possible joint use freight/transit operations.
 - Elimination or upgrade of numerous existing at-grade crossings and rehabilitation of existing railroad bridges, retaining walls and other existing structures.
- Considerations in Lunken Airport vicinity:
 - Coordination with I&O Railroad for possible joint use freight/transit operations.
 - Development of a rail transit storage/maintenance facility at former Undercliff Yard opposite Lunken Airport.
 - Coordination of rail transit alignment, possible new at-grade crossings and rail station location(s) with proposed roadway corridor improvements along Wilmer Road and Wooster Pike, and interchange improvements or a new interchange at Wilmer/Wooster/Beechmont (proposed TSM improvements).



- Potential flood issues north of Lunken Airport.
- Considerations from Lunken Airport to Red Bank Road:
 - Coordination with I&O Railroad for possible joint use freight/transit operations (and possibly NS Railroad in vicinity of Clare Yard near Mariemont).
 - Coordination of Oasis Line tie-in to proposed new Red Bank/US 50 interchange and multimodal convergence point at this location.
 - Potential flood issues along Duck Creek.
- <u>Considerations from Red Bank to Ancor area:</u>
 - Oasis Line to follow proposed relocated SR 32, including joint use of new Little Miami River bridge crossing; highway typical section includes designated 40-foot wide transitway on south side.
 - Proposed rail/bus transit station location at Newtown Road to be coordinated with new roadway intersection (relocated SR 32) and access to parks and bikeways.
 - Potential new at-grade crossings required in Newtown area.
 - o Crossing of existing NS track east of Newtown (at-grade or grade separated).
 - Flood issues along Little Miami River.
- Considerations from Ancor area to I-275/US 50 interchange in Milford:
 - Coordination of possible joint use freight/transit operations with NS Railroad or construction of parallel track using combination of existing rail right-of-way and new right-of-way will be required.
 - Crossing of existing NS track (estimated three times within this section).
 - Flood issues along East Fork.
 - Coordination with potential bus and roadway connections for Oasis Line termination at proposed bus/rail transit hub at I-275/US 50.

Wasson Line

<u>Description:</u> The Wasson Line is a proposed rail transit corridor under consideration in the Eastern Corridor extending from the Xavier/Evanston vicinity to the Eastgate area in Clermont County. Proposed technology is Electrically Powered Light Rail.

The Wasson Line is planned as an extension of the planned I-71 Light Rail Transit (LRT) corridor, and is dependent upon implementation of the I-71 LRT for function and system linkage consistent with project purpose and need (see next paragraph). It begins at





the location of the proposed I-71 LRT Xavier/Evanston Station (along Dana Avenue), and extends east along the existing Norfolk Southern rail line (Hyde Park branch) through Norwood and portions of Evanston, Hyde Park and Oakley to the proposed new Red Bank/US 50 interchange near Fairfax. The Wasson Line then diverges from existing rail, continuing east across the Little Miami River on new alignment parallel to relocated SR 32 through the Newtown area and Mt. Carmel hillside, and terminating at the I-275/SR 32 interchange area in Eastgate. Total length of the Wasson Line is about 11.7 miles.

A separate NEPA action is required for the I-71 LRT project and, although a preliminary DEIS has been prepared, there currently is no plan for further project development due to funding uncertainties. As such, the current recommendation in this Tier 1 DEIS for the Eastern Corridor is that the Wasson alternative, as recommended in the MIS, be part of the long-term framework with no immediate action in project development other than preservation of existing rail right-of-way for future transportation purposes. This recommendation is reiterated in Chapter 8.1 of this DEIS.

<u>Station Areas:</u> Six preliminary station locations are under consideration for the Wasson Line, as described below (listed west to east):

 <u>Xavier/Evanston Hub - In vicinity of proposed I-71</u> <u>LRT Station:</u> Preliminarily, this rail/bus transit station would be a modified version of the proposed I-71 LRT Xavier/ Evanston Station to accommodate the Eastern Corridor Wasson Line. The station is located on the north side of Dana Avenue between Newton Avenue and Montgomery Road. Layout and configuration of the station and associated parking would be coordinated with the I-71 LRT plans and with a bus transit mini-hub proposed for the location. This station could also be integrated with the City of Cincinnati's planned retail/commercial development at the corner of Dana and Montgomery.



- <u>Rookwood Station Intersection of Madison and Wasson Roads SE Quadrant:</u> Preliminary location
 of this rail station is along the existing railroad alignment, on the south side of Wasson Road
 between Michigan and Shaw Avenues. This station would be primarily pedestrian-oriented with
 limited on-site parking and with a vehicular drop-off area. It is assumed that there would be
 pedestrian access via existing sidewalks.
- <u>Paxton Station Intersection of Wasson Road and Paxton Avenue SE Quadrant:</u> Preliminary location of this rail station is along the existing rail alignment at the southeast corner of Paxton Avenue and Wasson Road. The station could be both pedestrian and auto-oriented with parking provided in a shared arrangement with Hyde Park Plaza located across the street.
- <u>Red Bank/Fairfax Transit Station At location of proposed new Red Bank/US 50 Interchange (same as Oasis Line):</u> Preliminary location of this inter-modal transfer station is just east of the proposed new Red Bank Road/US 50/Wooster Pike interchange, on the south side of proposed relocated SR 32 between existing Wooster Pike and the Little Miami River. Station access and limited parking would be provided off of Wooster Pike. Station layout and configuration would be coordinated with Eastern Corridor expanded bus and roadway (relocated SR 32) improvements. Rail platforms would be elevated from the station/parking area at this location.



- <u>Newtown Transit Station Intersection of proposed relocated SR 32/rail transit alignment with</u> <u>Newtown Road (same as Oasis Line):</u> Location of this rail/bus transit station is dependent on the location of proposed relocated SR 32 in this vicinity. In general, the station and associated parking would be located on the south side of relocated SR 32 where it intersects with Newtown Road. Station and parking access would be from Newtown Road; pedestrian access would also be provided.
- <u>Eastgate Hub Near vicinity of I-275/SR 32 Interchange SE Quadrant</u>: Preliminary location of this rail/bus transit station and associated parking is along the proposed Wasson Rail line on the north side of Aicholtz Road between Eastgate Boulevard and Eastgate Square Drive. This would be a terminal station for the Wasson Line. Access would be provided off of Aicholtz or Eastgate Square Drive. Final configuration would be coordinated with proposed Union Township development plans for this area.

<u>Existing Rail:</u> The section of the proposed Wasson Line from Xavier/Evanston to the Red Bank area follows existing rail owned by Norfolk Southern. The existing railroad in this vicinity is limited to a single track for most of its length. Right-of-way width between Xavier/Evanston and Erie Avenue is reduced to about 24-30 feet at some locations (i.e., between Rookwood Commons [Madison Road] and Paxton Avenue), however most of the existing rail along the Wasson Line has adequate width for dual tracks, especially east of Erie Avenue. The existing railroad right-of-way is close to existing grade from Xavier/Evanston to about Paxton Road, and grade-separated from Paxton to Red Bank. There are approximately eight at-grade crossings from Madison Road to Paxton Avenue, and several existing rail bridges (single track width), including structures at I-71, Kendel Avenue, Duck Creek tributary in Ault Park, Duck Creek, Marburg, Erie, Columbia Parkway and Red Bank Road. Railroad freight traffic is currently limited to one customer located east of Montgomery Road.

General Design and Operational Considerations for the Wasson Line:

The following goals and guidelines were established for the Wasson Line during the Tier 1 process that are to be carried forward to detailed development:

- <u>General Considerations</u>:
 - The Wasson Line will be a single-track facility along portions of the existing NS right-of-way between I-71 and Erie Avenue, and double tracks for the remaining portions of the rail line.
 - Existing rail right-of-way is generally wide enough to accommodate a proposed two-track facility, except between Madison Road (Rookwood Commons) to about Paxton Avenue, where new right-of-way will be required.
 - Electrically powered light rail technology proposed for the Wasson Line cannot be operated concurrently with freight traffic, and it is assumed that freight traffic will be eliminated along this section of the existing NS rail corridor.
- Considerations from Xavier/Evanston to Paxton Avenue:
 - Restrictive rail right-of-way width between Madison Road and Erie Avenue will require additional new right-of-way for the proposed dual track transit facility.
 - Possible elimination of several at-grade crossings between Madison and Paxton may be required to reduce street conflicts, and for pedestrian crossing control and protection.



- Another option under consideration for eliminating street conflicts between Madison and Paxton is use of a grade-separated rail transit line in this vicinity.
- Widening or replacement of existing rail bridge over I-71 will be required to accommodate dual tracks for proposed rail transit.
- Considerations from Paxton Avenue to Red Bank Road:
 - Widening or replacement of existing rail bridges over Marburg and Erie Avenue will be required to accommodate dual tracks for proposed rail transit.
 - Coordination of Wasson Line tie-in to proposed new Red Bank/US 50 interchange and multimodal convergence point at this location.
- <u>Considerations from Red Bank Road to east of Newtown:</u>
 - Wasson Line to follow proposed relocated SR 32, including joint use of new Little Miami River crossing.
 - Proposed rail/bus transit station location at Newtown Road to be coordinated with new roadway intersection (relocated SR 32) and access to parks and bikeways.
 - Potential new at-grade crossings required in Newtown area.
 - Crossing of existing NS track required east of Newtown (at-grade or grade-separated).
 - Flood issues along Little Miami River.
- <u>Considerations from east of Newtown to I-275/SR 32 interchange in Eastgate:</u>
 - Coordination with proposed relocated SR 32 improvements in the vicinity of the Mt. Carmel hill to accommodate required maximum 5% rail grade.
 - New at-grade rail crossings required as rail transit parallels proposed SR 32 improvement corridor (includes proposed at-grade intersections at Round Bottom Road, Edwards Road, Little Dry Run Road, Ancor connector and/or Eight Mile Road).
 - Potential flood issues along Dry Run.
 - Coordination with potential bus and roadway connections for Wasson Line termination at proposed bus/rail hub at I-275/SR 32.

Highway Alternatives

The development of feasible highway alternatives is presented in detail in: Eastern Corridor PE/EIS, Technical Memorandum, Summary of Preliminary Highway Alternatives, Balke American, September 2002, and Eastern Corridor PE/EIS, Technical Memorandum, Summary Update of Conceptual Highway Alternatives, Eastgate Area (Segment IV), Balke American, August 2003. A summary of the development process from initial alternatives considered to the identification of feasible alternatives is presented below.



Initial Highway Alternatives and Those Dismissed from Further Consideration

For the development of highway alternatives in Tier 1, the project corridor was divided into four segments, defined by existing road function, access points and termini, land use, local transportation needs, independent segment utility, potential multi-modal network connectivity, anticipated new highway typical section requirements, and new highway corridor footprint opportunities and constraints. These four segments included: Segment I (Red Bank Corridor, I-71 to US 50), Segment II (US 50/River Crossing to Newtown Road), Segment III (Newtown Road to Mt. Carmel-Tobasco Road) and Segment IV (Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road).

Initial highway alternatives developed in these segments within the conceptual corridors described in Chapter 3.3 are summarized in Table 3.8:

Project Segment	Initial Alternatives Considered	Alternatives Dismissed	Alternatives Forwarded
SEGMENT I: I-71 TO US 50	Alternatives A (Red Bank mainline improvement) and B1 and B2 (Red Bank/US	None dismissed	All three initial alternatives carried forward and shown at
RED BANK CORRIDOR	50 interchange options)		the May 2003 public meetings.
			One additional Red Bank mainline option, one additional interchange option and several side road improvement options were added after the May 2003 public meetings.
SEGMENT II: LITTLE MIAMI RIVER CROSSING TO NEWTOWN ROAD	<u>10 initial highway</u> <u>alternatives</u> were developed (alternatives connective between Sub-Segments), including:	None dismissed	All 10 initial alternatives (connective between Sub-Segments) were carried forward and shown at the May 2003 public meetings.
(Includes two Sub-Segments –	River Crossing Sub- Segment: Alternatives C, D, E, F		
see next column)	River Plains Sub-Segment: Alternatives F (above), G, H, I, J, K, L		
SEGMENT III: NEWTOWN ROAD TO MT.	<u>8 initial highway alternatives</u> were developed (alternatives connective	None dismissed	All 8 initial alternatives (connective between Sub-Segments) carried
CARMEL- TOBASCO ROAD	between Sub-Segments), including:		forward and shown (unnamed) at the May 2003 public meetings.
(Includes two <u>Sub-Segments</u> – see next column)	Round Bottom/Ancor Sub- Segment: Alternatives M, N, O, P		

Table 3.8. Initial Highway Alternatives Considered and Disposition



Project Segment	Initial Alternatives Considered	Alternatives Dismissed	Alternatives Forwarded
	Mt. Carmel Sub-Segment: Alternatives Q, R, S, T		
SEGMENT IV: MT. CARMEL- TOBASCO ROAD TO OLIVE BRANCH- STONELICK	<u>9 initial alternatives</u> considered (Alternatives A through H) consisting of different variations of access improvements to SR 32, I- 275, access management measures and localized	Alternatives A, B, D, G, and H – revised / renamed Alternatives I, K, J, M and N.	Alternatives I, J, K, and N carried forward and shown conceptually (and unnamed) at the May 2003 public meetings.
ROAD	road improvements. (see below for specific	<u>Alternatives C,</u> E and F –	Following the May 2003 meetings, several new
EASTGATE AREA	descriptions of those carried through as preliminary feasible alternatives).	conflict with ODOT design policy (no partial interchanges; Alt. C) or conflict with	alternatives were developed in coordination with stakeholders, including Alternatives O, P, Q-1, Q-2, Q-3, Q-4 and R
		ODOT spacing requirements (interchanges less than 1 mile apart; Alt. E, F).	For purposes of evaluation in this DEIS, Alternatives I, P and Q- 3 were carried forward as feasible alternatives representative of the different configurations
		<u>Alternative M</u> – dropped following traffic evaluation.	proposed for the Eastgate Area (see below).

Table 3.8. Initial Highway Alternatives Considered and Disposition

Feasible Highway Alternatives

Preliminary feasible highway alternatives were presented for public review at the May 2003 public meetings. Following these meetings, several feasible alternatives were added or modified based on public input, further preliminary engineering, environmental impact avoidance and minimization and other project considerations, as noted in the third column of Table 3.8.

Detailed description of feasible highway alternatives is presented in: Eastern Corridor PE/EIS, Technical Memorandum, Summary of Preliminary Highway Alternatives, Balke American, September 2002 and Eastern Corridor PE/EIS, Technical Memorandum, Summary Update of Conceptual Highway Alternatives, Eastgate Area (Segment IV), Balke American, August 2003. Information summarized from this documentation by project segment is presented below; total length of new highway for all segments combined is about 12.6 miles.

Feasible alternatives for all modes described in this Tier 1 DEIS are not specific alignment locations, but alternative corridors that will be further developed and evaluated during Tier 2 of the Eastern Corridor study. As such, sufficient preliminary engineering work was conducted in Tier 1 to understand the general spatial requirements of the various roadway alternatives



described below, but alignment location and configuration details have not been established. In addition, access details, including intersection, interchange and other ancillary connections, have not been developed in Tier 1. Instead, general spatial requirements have been identified in order to establish an approximate expected footprint area for key access points associated with the roadway alternatives.

Therefore, the feasible highway alternatives described below represent the range of options that will be used during Tier 2 as the starting point for more specific alignment and access development. Tier 2 work may result in minor revisions to the locations of the alternatives as they are presented in this Tier 1 DEIS, but alignment locations would still occur within the Eastern Corridor detailed study area.

Segment I: I-71 to US 50 (Red Bank Corridor)

Roadway improvements in Segment I involve consolidation and management of access points along existing Red Bank Road and Red Bank Expressway in order to establish a controlled access arterial roadway of improved capacity and safety from I-71 to US 50. This segment has a total length is about 2.5 miles, and would expand or closely follow the existing roadway alignment.

Segment I roadway improvements and a typical mainline roadway section are shown on Figures 3.4 and 3.8, respectively.

Feasible Alternatives Under Consideration in Segment I:

The feasible alternatives framework for Segment I consists of three main components: 1) basic highway mainline, 2) interchange options at US 50, and 3) local access roadway network.

- 1) Mainline: There are two basic highway mainline alternatives incorporating several closely spaced location options, all proximate to or on existing roadway right-of-way:
 - <u>Alternative A</u> This alternative involves multi-lane widening and access management improvements, employing unrestricted general purpose lanes for the mainline roadway and new or improved local access roads in the immediately surrounding network to maintain or improve access to various land uses. The mainline capacity (number of lanes) in this alternative will vary depending on the extent of access point consolidation employed (this will be part of specific Tier 2 studies). If a high degree of access management is employed, Alternative A may consist of as few as four through lanes, plus median or outboard lanes or ramps as needed at intersections or interchanges to handle turning or ingress/egress movements. If a low degree of access management is used, Alternative A may require as many as eight through lanes, plus median or outboard turn lanes or ramps. Various options for access control and local roadway network improvements will be evaluated under Tier 2 (see framework description for local network in Alternatives SR 1 through SR 3 below).
 - <u>Alternative A2</u> This alternative includes minimal widening and improvement of Red Bank Road (four general purpose lanes and turn lanes as needed), maintaining most existing local road access points, plus use of two grade-separated limited-access special purpose through lanes for non-local traffic. For the local mainline, at-grade intersections at Erie/Brotherton Avenue and Madison/Duck Creek Road would be required, as would a modification to extend Brotherton Road over Duck Creek (to the east) for access to commercial



development in this area¹. Limited access special purpose lanes would be used for commercial traffic, HOV, express bus, user fee, simple bypass or combination.

- 2) US 50 Interchange: There are three alternative configurations for a new Red Bank Road/US 50: interchange:
 - <u>Alternative B1</u> This alternative would involve a conventionally-configured full diamond access interchange with Red Bank Road/SR 32 overpassing US 50, with two at-grade signalized ramp terminus intersections at US 50.
 - <u>Alternative B2</u> This alternative would employ a full-access "folded diamond" interchange with Red Bank Road/SR 32 overpassing US 50, with two at-grade signalized intersections at US 50 (similar to Alternative B1, except that, instead of a four-quadrant diamond, all ramps would be located in two quadrants to provide some advantages in footprint and signal spacing).
 - <u>Alternative B3</u> This interchange alternative would include a mainline at-grade signalized intersection of Red Bank Road/SR 32 and a reconfigured existing Colbank Road connecting link to US 50. A second signalized "T" intersection would be located at Colbank and US 50. In Alternative B3, Red Bank Road/SR 32 would underpass US 50. An additional at-grade intersection just south of US 50 would be utilized to provide connection to the special purpose lanes of mainline Alternative A2, if coupled with that option.
- 3) Local Access Roadway Network: There are three side road/intersection improvement options (sets of improvements configured as alternative plans) for consolidating traffic access points along Red Bank Road and improving local access. Each varies in potential extent of access control relationship to mainline Red Bank/SR 32 improvement alternatives.
 - <u>SR 1</u> This local network alternative includes these components: at-grade intersections at both Madison Road and Erie Avenue; direct access from Duck Creek Road to I-71; new access between Duck Creek Road and Madison; new access from Madison Road to Hetzel Street; new access from Madison Road to Charlemar Avenue and Red Bank Road; new access from Red Bank Road to Old Red Bank, Hetzel Street and Tompkins Avenue; improvements along Brotherton Road and Old Red Bank Road to Murray Avenue; and new access from Red Bank Road to Murray Avenue/Erie Avenue.
 - SR 2 This local network alternative includes these components: new urban interchanges at both Madison Road and Erie Avenue; Duck Creek Road tie-in to Chandler Avenue and Stewart Road; new access from Madison Road to Charlemar Avenue; new access from Madison Road to Hetzel Street; improved intersection at Stewart Road and Madison Road with improvements at Hetzel Street, existing Red Bank Road and Tompkins Road; improved tie-in from Bramble Avenue to Erie Avenue; improved tie-in from Red Bank Road to Murray Avenue; and new tie-in from Brotherton Road to Old Red Bank.
 - <u>SR 3</u> This local network alternative includes these components: new urban interchange at Madison Road (tying to Duck Creek Road and I-71) and at-grade intersection at Erie Avenue; new access (service) road from Madison Road to Wooster Pike to the west of Red Bank, generally following railroad corridor on east side; extension of Brotherton Road to Murray Avenue, and new access (service) road from Murray to Wooster Pike; new service road from Madison Road to the east of Red Bank, linking to the service road to the west of Red Bank; and improvement of existing Red Bank Road from Madison Road to Erie Avenue.

¹ A possible phasing option under consideration for the Red Bank area consists of widening Red Bank Road in the near-term (four through lanes plus turn lanes as needed), followed in the long-term by construction of two special purpose lanes to augment the 5-lane section. This option would require an at-grade intersection at Madison/Duck Creek Road in the near-term (no grade separation) for fit with the configuration depicted for Alternative A2 (special purpose lane alternative) on Figure 3.4.



General Design and Operational Considerations for Segment I:

In consideration of the alternatives for Segment I, the following goals and guidelines were established during the Tier 1 process that are to be carried forward to detailed development in Tier 2:

- Establish controlled access throughout mainline Red Bank Road.
- Typical mainline section for improved Red Bank Road should consist of:
 - Four to eight 12-foot lanes (two to four in either direction) with a 14-foot wide raised median.
 - Travel lanes bordered by a 2-foot curb and gutter, an 8-foot wide greenspace, a 10-foot wide bike/pedestrian facility on the east side and a 6-foot wide sidewalk on the west, and an outside 4-foot wide greenspace.
- Adequate storage lanes for turn movements approaching at-grade intersections.
- Design speed of 50 mph (actual posted legal speeds to be established locally).
- Landscaping along median (low plantings) and shoulders (treelawn).
- Provision for 4 to 5 bus stops (in-lane or pullouts) in either direction to be developed along mainline Red Bank Road.
- Red Bank/US 50 interchange to be multi-modal convergence point for:
 - o The Wasson Rail transit corridor from the west and Oasis Rail transit corridor from the south,
 - Dedicated bike paths along Wasson Road (following proposed rail line), Red Bank Road (on east side of proposed Red Bank improvement), and along south edge of Mariemont (along Little Miami River), and
 - o Bus transit routes using improved Red Bank Road, Wooster Pike and US 50.

Multi-Modal Connection (highway, rail, bus and bikeway) at Proposed New Red Bank/US 50 Interchange:

The proposed Wasson and Oasis rail transit corridors, expanded bus routes and dedicated bikeways are planned to tie into proposed highway improvements (relocated SR 32) at the new Red Bank/US 50 interchange area. General considerations for multi-modal connections in this vicinity are described below.

- Preliminary multi-modal station location:
 - Located to the east of the new Red Bank/US 50 interchange area, between Wooster Pike and the Little Miami River, at the point where the Wasson and Oasis rail lines converge with the relocated SR 32 corridor.
 - o Station will be grade separated from relocated SR 32 corridor (elevated platforms).



• Other considerations:

- o Bikeway and expanded bus in this area follow proposed rail and highway improvements .
- The multi-modal connection point at the new Red Bank/US 50 interchange for all alternatives will be coordinated to provide, as necessary, continued access for existing rail (existing Oasis/Indiana & Ohio and Norfolk Southern) to Clare Yard located just east of the new interchange near Mariemont.
- It is assumed that Norfolk Southern freight traffic along the Wasson Line will be abandoned, and its current line extending to Clare Yard will be terminated.
- Both the Wasson Line and Oasis Line will share a new crossing of the Little Miami River with relocated SR32 (on the south side).

Segment II: Little Miami River Crossing to Newtown Road

Roadway improvements in Segment II involve consolidation and management of access points for establishing relocated SR 32 as a controlled access arterial roadway west of I-275, with a shared roadway/rail clear span crossing of the Little Miami River; total length is about 2.6 miles.

Segment II roadway improvements and typical mainline section are shown on Figures 3.5 and 3.8, respectively.

<u>Feasible Alternatives Under Consideration in Segment II:</u> (Note - Segment II is divided into two Sub-Segments: US 50/River Crossing Sub-Segment and River Plains Sub-Segment)

- US 50/River Crossing Sub-Segment: four basic multi-lane mainline location alternatives for approaches to and clear span crossing of the Little Miami River:
 - <u>Alternative C</u> from Red Bank/US 50 interchange, extends east, crossing Little Miami River upstream of Horseshoe Bend.
 - <u>Alternative D</u> from Red Bank/US 50 interchange, extends east, crossing Little Miami River at Horseshoe Bend.
 - <u>Alternative E</u> from Red Bank/US 50 interchange, extends east, crossing Little Miami River downstream of Horseshoe Bend.
 - <u>Alternative F</u> from Red Bank/US 50 interchange, extends east, crossing Little Miami River furthest downstream of Horseshoe Bend.
- River Plains Sub-Segment: six basic multi-lane mainline alternatives for traversing the Little Miami River floodplain east of the main river channel and Clear Creek:
 - <u>Alternative G</u> connects to Alternative C and extends east to intersection with Newtown Road (Church Street) near Valley Avenue.
 - <u>Alternative H</u> can connect to Alternatives D or E and extends east (and north of Clear Creek) to intersection with Newtown Road (Church Street) near Valley Avenue.



- <u>Alternative I</u> can connect to Alternatives D or E and extends due east, crossing Clear Creek at multiple locations, to intersection with Newtown Road (Church Street) near Valley Avenue.
- <u>Alternative J</u> connects to Alternative F and extends east across Clear Creek (one crossing location) to intersection with Newtown Road (Church Street) near Valley Avenue.
- <u>Alternative K</u> connects to Alternative F, but slightly south of Alternative J, avoiding a crossing of Clear Creek.
- <u>Alternative L</u> connects to Alternative F, staying south, following the south side of an existing rail line (Norfolk Southern) to intersection with Newtown Road (Church Street).
- Alternatives between Sub-Segments are connective.

General Design and Operational Considerations for Segment II:

In consideration of the alternatives for Segment II, the following goals and guidelines were established during the Tier 1 process that are to be carried forward to detailed development in Tier 2:

- Typical mainline section for relocated SR 32 consists of:
 - Four 12-foot lanes (two in either direction) with a 14-foot wide raised median.
 - Travel lanes bordered by 10-foot wide shoulders, a 2-foot curb, and, on the north side, an 8foot wide greenspace, 10-foot wide bike/pedestrian facility and an outside 4-foot wide greenspace, and, to the south, a 40-foot wide transitway (for future rail).
 - Total typical section width is 148 feet (excluding slopes).
- A clear span crossing of the Little Miami River (a shared roadway/rail crossing), with no in-stream piers or other in-stream structures.
- Controlled access along Little Miami River bottom (except for recreational purposes).
- Left turn storage lanes for at-grade intersections.
- Closed/surface drainage systems.
- Design speed 60 mph (actual posted legal speed to be established locally).
- Parallel rail transitway along south side of relocated SR 32 (for Wasson and Oasis Lines), including sharing of Little Miami River clear span crossing.
- Provision along north side of relocated SR 32 for dedicated bike path extending from modal convergence point at proposed Red Bank/US 50 interchange east to existing bike paths along Newtown Road/Little Miami River.
- New at-grade intersection or possible grade separation at Newtown Road to be coordinated with bus/rail transit hub location, access to parks and bike trail, and crossing of existing rail (Norfolk Southern).
- Consideration of floodplain issues in Newtown area during further SR 32 alignment development.



• Access control may require development of new local access roads paralleling improved SR 32.

Segment III: Newtown Road to Mt. Carmel-Tobasco Road

Similar to Segment II, roadway improvements in Segment III involve consolidation and management of access points for establishing relocated SR 32 as a controlled access arterial roadway west of I-275; total length is about 3.4 miles.

Segment III roadway improvements and typical mainline section are shown on Figures 3.6 and 3.8, respectively.

<u>Feasible Alternatives Under Consideration in Segment III:</u> (Note - Segment III is divided into two Sub-Segments: Round Bottom/Ancor Sub-Segment and Mt. Carmel Hill Sub-Segment)

- Round Bottom/Ancor Sub-Segment: four basic multi-lane mainline alternatives through Newtown and developed Ancor area to the east of Newtown:
 - <u>Alternative M</u> can connect to Alternatives G, H, I, J or K of Segment II and extends east along north limits of Newtown and through gravel pit lake.
 - <u>Alternative N</u> can connect to Alternatives G, H, I, J or K of Segment II, but south of M between (avoiding) gravel pit lakes.
 - <u>Alternative O</u> can connect to Alternatives G or I of Segment II, and extends southeast, crossing Round Bottom Road and through gravel pit lakes to Alternative P.
 - <u>Alternative P</u> southernmost alignment, connecting to Alternative L (of Segment II), and continuing east along Norfolk Southern rail corridor.
- Mt. Carmel Hill Sub-Segment: four basic multi-lane mainline alternatives in the vicinity of the Mt. Carmel hillside:
 - <u>Alternative Q</u> can connect to Alternatives M, N, O or P, extending east across upper slopes of wooded hillside on north side of SR 32.
 - <u>Alternative R</u> connects to Alternatives M, O or P, extending east across mid slopes of wooded hillside on north side of SR 32.
 - <u>Alternative S</u> connects to Alternatives M, N, O or P, extending east across lower slopes of wooded hillside on north side of SR 32.
 - <u>Alternative T</u> can connect to Alternatives N, O or P, and consists of a bifurcated design along Dry Run Creek, which runs parallel to SR 32 on the south side; north (westbound) lanes of improved SR 32 would generally follow existing SR 32 alignment; new parallel westbound lanes would be constructed south of the existing Dry Run channel.
- Alternatives between Sub-Segments are connective.



General Design and Operational Considerations for Segment III:

In consideration of the alternatives for Segment III, the following goals and guidelines were established during the Tier 1 process that are to be carried forward to detailed development in Tier 2:

- Typical mainline section for relocated SR 32 in the Round Bottom/Ancor Sub-Segment (generally Newtown Road to base of Mt. Carmel hill) is the same as for Segment II (incorporates bike/pedestrian facility on north side and transitway on south).
- Typical mainline section for relocated SR 32 in the Mt. Carmel Hill Sub-Segment drops the bikeway/pedestrian facility, with only a 4-foot wide greenspace adjacent to the 2-foot curb on the north side.
- Other general design parameters are the same as Segment II, including parallel rail transit line on the south side.
- Mainline relocated SR 32 not to exceed an approximately 5% grade in order to accommodate parallel rail transitway (particularly an issue in the vicinity of Mt. Carmel hill).
- At-grade intersections at Round Bottom Road/Little Dry Run Road, and tie-in to proposed Ancor Connector. Proposed by others, the Ancor Connector will tie existing SR 32 from about the east Newtown village limits north to Broadwell Road).
- At-grade intersection at Eight Mile Road (may not be feasible due to grade and terrain issues; to be further evaluated in Tier 2).
- Urban interchange at tie-in to Mt. Carmel Road and possibly Eight Mile Road.
- Urban interchange at Mt. Carmel-Tobasco Road/Bells Lane.
- Access control may require development of new local access roads paralleling improved SR 32.

Segment IV: Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road (Eastgate Area)

Roadway improvements in Segment IV involve consolidation and management of access points for establishing improved SR 32 as a limited access arterial roadway east of I-275; total length is about 4.1 miles.

Segment IV roadway improvements and typical mainline section (improved SR 32) are shown on Figures 3.7a-c and 3.8, respectively.



Existing I-275 / SR 32 Interchange at Eastgate

Feasible Alternatives Under Consideration in Segment IV:

Several alternatives are under consideration, consisting of different variations of access improvements to SR 32, I-275, access management measures and localized road improvements.



- Three alternatives, determined to be representative of the different configurations under consideration for the Eastgate area, are selected for purposes of evaluation in this DEIS. There are possible minor variations within these three basic alternatives, as well as the possibility for phasing various portions of the alternatives in over time:
 - <u>Alternative I(IV)</u> replaces the existing I-275/SR 32 cloverleaf interchange with a full directional interchange connecting mainline I-275 with mainline SR 32. Also included are: a new interchange at SR 32 and a new Bach-Buxton/Tealtown Road Extension, grade separations at Eastgate Boulevard and SR 32 (eliminating existing access), Gleneste-Withamsville Road and SR 32, and two existing intersections of Old SR 74 and SR 32. Alternative I(IV) also includes local capacity improvements to Old SR 74, Eastagte Boulevard, and Aicholtz Road. No collector-distributors are used with this alternative.
 - <u>Alternative P(IV)</u> involves the relocation of I-275 and the I-275/SR 32 interchange to the west of its current location. Also included are: a new interchange at SR 32 and a new Bach-Buxton/Tealtown Road Extension, a new interchange at I-275 and relocated SR 74, a full access interchange at I-275 and Eastgate Boulevard, a new interchange at I-275 and a new Bach-Buxton Connector (north of clough Pike), and grade separation at Gleneste-Withamsville Road. Alternative P(IV) also includes local capacity improvements to Old SR 74, Eastgate Boulevard, Aicholtz Road (under I-275) and Gleneste-Withamsville Road. No collector-distributors are used with this alternative.
 - <u>Alternative Q-3(IV)</u> uses collector-distributor roads along I-275 and SR 32. Also included are: a new interchange at I-275 and a new Eastgate Square Extension (north of Clough Pike) for access between I-275 collector-distributors and the Eastgate Square Extension, a directional interchange at I-275/SR 32 for access between I-275 and SR 32 mainlines and SR 32 collector-distributors, an interchange at Eastgate Boulevard and SR 32 for access between SR 32 mainline, Eastgate Boulevard and I-275 mainline, an at-grade intersection at Gleneste-Withamsville Road and SR 32 collector-distributors), a new interchange at SR 32 and Bach-Buxton/Tealtown Road Extension for access between SR 32 mainline, SR 32 collector-distributors and Bach-Buxton/Tealtown Road Extension, and grade separations at Old SR 74 and I-275, and Old SR 74 and SR 32.

General Design and Operational Considerations for Segment IV:

In consideration of the alternatives for Segment IV, the following goals and guidelines were established during the Tier 1 process that are to be carried forward to detailed development in Tier 2:

- Ensure that SR 32 and Eastgate area improvements do not result in any degradation of LOS on I-275
- Preserve and possibly enhance access to Eastgate Mall and surrounding retail complex
- Provide coordinated framework for possible future bus and rail transit investments
- Support long-term macro-corridor goals for SR 32 by establishing limited access east of I-275, access point removal / consolidation / separation, capacity preservation, improved freight movement and economic support, and consistency with Clermont County 32 corridor goals. This goal is expected to be accomplished over an extended period in conjunction with other long-term transportation investments planned in the Eastgate area as part of the overall Eastern Corridor multimodal plan.



• Rail transit parallel to SR 32 on south side (from Segment III) to terminate within the southeast quadrant of the I-275/SR 32 interchange along Aicholtz Road.

Bikeway

<u>Description:</u> The bikeway plan for the Eastern Corridor, shown on Figure 3.9, includes dedicated (planned) bikeways/trails and alternative bike links under consideration as described in the OKI Regional Bike Plan and incorporation of findings from the Eastern Corridor land use vision plan. Proposed routes by area are listed in Chapter 3.4.2.

Key bikeway connections proposed for the Eastern Corridor include the following:

- Planned bikeway along US 50/Wooster Pike (following existing roadway and rail) connecting an existing trail in Milford to existing bike trails in the Lunken Airport vicinity (extension of the Little Miami Scenic Trail).
- Planned bikeway between Columbia Parkway and Eastern Avenue (following existing roadway and rail) connecting downtown Cincinnati to existing trails in the Lunken Airport vicinity.
- Planned bikeways along portions of Round Bottom Road, Newtown Road, Wasson Road, Murray Avenue and Batavia Road (following existing roadways and/or rail) connecting area parks and greenspaces, and ultimately linking to existing trails in Milford and the Lunken Airport vicinity (portion of the planned Little Miami Scenic Trail extension).
- Planned bikeway along Kellogg Avenue extending south from existing trails in the Lunken Airport vicinity (Ohio River Bike Trails).
- New bike paths (mostly new alignment) at several locations, including:
 - From Newtown Road extending west across the Little Miami River floodplain to Red Bank Road (following the proposed relocated SR 32 roadway alignment);
 - From Beechmont Avenue extending south to Kellogg Avenue (following Elstun Road along a portion of the Little Miami River State Scenic Park);
 - From downtown Cincinnati extending east along the Ohio River to Kellogg Avenue near Lunken Airport (Ohio River Bike Trails);
 - From Newtown Road extending south to Five Mile Road;
 - Through Terrace Park following abandoned rail corridor (extension of the Little Miami River Scenic Trail); and
 - Through Otto Armleder Memorial Park, with connection to planned bike trail along US 50/Wooster Pike and link to existing trails in the Lunken Airport vicinity.
- A key multi-modal convergence point for bikeway and other transportation modes in the proposed Red Bank/US 50 interchange area.
- Link for bikeway to bus or rail transit at other proposed bus and rail stations located throughout the Eastern Corridor area.



3.4.2. Feasible Multi-Modal Alternatives By Area

Feasible alternatives for the project were developed with the goal of creating a multi-modal solution for the Eastern Corridor that supported, to the extent practicable, priority land use goals identified and adopted by specific focus group areas during the Eastern Corridor land use vision process. The feasible modal alternatives described in Chapter 3.4.1, therefore, were subsequently grouped together by six geographic areas, generally corresponding to the geographic focus areas used in the land use vision process. This grouping took into account logical termini and operational considerations, i.e., how different components of a proposed multi-modal transportation plan within an area worked together to address a particular transportation need or local and/or regional capacity issue. Feasible multi-modal alternatives by area are described in the remainder of this chapter, and are shown on Figures 3.11 through 3.16.

Area #1: Wasson/Red Bank Road (from I-71/Xavier to Red Bank Road/US 50)

The Wasson/Red Bank Road area extends from Xavier University eastward along Wasson Road to Red Bank Road at US 50, and from the I-71/Red Bank Road interchange southward along Red Bank to US 50. It encompasses portions of the communities of Evanston, Norwood, O'Bryonville, Hyde Park, Oakley, Mt. Lookout, Madiera, Madisonville and Fairfax.

The multi-modal transportation plan in this area, shown on Figure 3.11, is a combination of TSM improvements on the existing roadway network, new rail transit, expanded bus service, new bike paths, and highway capacity improvements along Red Bank Road, as summarized below. An important component of the transportation plan for this area is a multi-modal convergence point at the proposed Red Bank/US 50 interchange area.

TSM Improvements

- *5 intersection improvements*, including Edwards, Madison and Wasson Road; Edwards, Markbreit and Williams Avenue; 28th, Millbrae Avenue and Robertson; Madison and Plainville Road; and Brotherton, Erie and Murray.
- 8 roadway corridor improvements, including Dana Avenue from F71 to Victory Parkway; Edwards Road north of Hyde Park Square; Ridge Road between Madison to Highland; Kennedy Connector (Duck Creek Road to Ridge); Red Bank from US 50 to Fair Lane; Red Bank from Fair Lane to Brotherton; Red Bank from Brotherton to Hetzel; and US 50 (Wooster Pike) in Fairfax.
- More frequent bus service along US 50 in Fairfax.

Bus Transit

- *Primary bus service routes* along portions of Reading Road, Paddock Road, Smith Road, Montgomery Road, Williams Avenue, Edwards Road, Erie Avenue, Marburg Road, Ridge Road, I-71, Whetsel Avenue, Bramble Avenue, Plainville Road, US 50 (Wooster Pike), Shaw Avenue, Paxton Avenue, Dana Avenue and Trimble Avenue.
- Bus community circulator routes serving portions of Xavier University, Evanston, Norwood, Oakley, Hyde Park, Mt. Lookout, Fairfax, and Madisonville (to tie into proposed rail transit).



- 2 bus/rail transit hubs located in the Xavier/Evanston and Red Bank/Fairfax vicinities.
- *3 bus hubs*: one in Madisonville (Madison Road and Ridge Road vicinity), one in Oakley (Whetsel Avenue and Madison Road vicinity) and one in Avondale (Reading Road).

Rail Transit

- *Future Wasson Rail Line* extending from a tie-in to the proposed I-71 light rail corridor at Xavier/Evanston eastward following existing Norfolk Southern (NS) rail alignment along Wasson Road through Evanston, Hyde Park, and Oakley to Red Bank Road at US 50.
- 2 bus/rail transit hubs located in the Xavier/Evanston and Red Bank/Fairfax vicinities.
- 2 future rail stations: one at Rookwood Commons (Madison Road) and one at Paxton Road.

Highway (Red Bank Road) Capacity Improvements

- Upgrade of Red Bank Road between I-71 and US 50; two mainline alternatives under consideration (Alternatives A and A2).
- Access control and consolidation throughout this segment of Red Bank for capacity and safety improvement, including improved intersections or urban interchanges at Madison Road and/or Erie Avenue; three alternatives under consideration (Alternatives SR1, SR2 and SR3)
- *Major modification to Red Bank/US 50 interchange;* three alternatives under consideration (Alternative B1, B2 and B3).
- No change to the existing I-71/Red Bank Road interchange.

<u>Bikeway</u>

• Dedicated bike paths along Wasson Road (following proposed rail line), Murray Avenue/Red Bank Road in Fairfax, and along south edge of Mariemont (along Little Miami River); all three paths connect in vicinity of proposed Red Bank Road/US 50/Wooster Pike interchange.

Multi-Modal Convergence Location

- The proposed Wasson and Oasis rail transit corridors, expanded bus routes and dedicated bikeways are planned to tie into proposed highway improvements (relocated SR 32) at the new Red Bank/US 50 interchange area.
- A preliminary station location (Red Bank/Fairfax; see above) occurs to the west of the new Red Bank/US 50 interchange area, between Wooster Pike and the Little Miami River, at the point where the Wasson and Oasis rail lines converge with the relocated SR 32 corridor.

Area #2: Ohio 32/Wooster West (from Red Bank/US 50 to Ancor/Mount Carmel Hill)

The Ohio 32/Wooster West area extends from the Red Bank Road/US 50 interchange (Area #1) eastward across the Little Miami River, through Newtown to Mt. Carmel Road/SR 32 in Anderson Township.



The multi-modal transportation plan in this area, shown on Figure 3.12, consists of relocated SR 32 on new alignment, new rail transit, expanded bus service, new bike paths, and TSM improvements on the existing roadway network, as summarized below. An important component of the transportation plan in this area is use of a multi-modal corridor with rail transit and bikeways paralleling the new SR 32 alignment in order to maximize right-of-way efficiency and minimize new crossings in the sensitive river area.

TSM Improvements

- 1 intersection improvement at Clough Pike and SR 32
- 7 roadway corridor improvements, including safety improvements on US 50 between Walton Creek and Newtown Road, traffic signal coordination on Newtown Road between SR 32 and Valley Drive, new signals on Valley Drive at Church Street (Newtown Road) and Round Bottom Road, SR 32/Round Bottom Road improvements, Eight Mile Road from SR 32 south to the top of the Hill, Newtown Road from Clough Pike to Ragland, and Ragland Road and Turpin Road upgrade (note: TSM roadway corridor improvement along Wooster Pike from Red Bank Road to Beechmont and interchange improvements at Wooster/Wilmer/Beechmont and Beechmont/US 50 are included in Area #4).
- 1 Park-and-Ride facility at Newtown Road & US 50.
- More frequent bus service along US 50/Columbia Parkway.

Bus Transit

- *Primary bus service routes* along portions of Miami Road, Muchmore Road, Newtown Road and SR 32.
- Bus community circulator routes serving portions of Mariemont, Indian Hill and Fairfax.
- 1 bus/rail transit hub located in Newtown.

Rail Transit

- Wasson Rail Line (from Area #1) and Oasis Rail Line (from Area #4) converge at proposed Red Bank/US 50/Wooster interchange area, then extend east, following the proposed relocated SR 32 alignment, across the Little Miami, through Newtown, to the proposed Ancor connector area; the rail lines diverge at the Ancor connector, with the Wasson Line extending east along the relocated SR 32 alignment towards the Eastgate area, and the Oasis Line extending north, following the existing NS rail corridor towards the Milford area.
- 1 bus/rail transit hub located in Newtown (see above).
- 1 Oasis rail station at Broadwell Road in the Ancor area.

Highway (Relocated SR 32)

• Upgrade and improve SR 32 on new alignment (several connective feasible alternative segments under consideration; Alternatives C through T), with parallel rail transit as noted above, extending from the proposed Red Bank/US 50/Wooster interchange area (Area #1), east across the Little Miami River and bottomland area, through Newtown, to the Mt. Carmel/SR 32 hillside.



- Access control and consolidation all along improved SR 32, with no access points, except for recreational purposes, along the Little Miami River bottom area.
- New intersection with possible grade separation at Newtown Road to be coordinated with bus/rail transit hub location and access to parks and bike trail.
- At-grade intersections at Round Bottom Road/Little Dry Run Road and tie-in to Ancor connector.
- At-grade intersection at Eight Mile Road.
- Urban interchanges at tie-in to Mt. Carmel Road (and possible Eight Mile Road) and at Mt. Carmel-Tobasco Road/Bells Lane.

<u>Bikeway</u>

 Dedicated (and interconnecting) bike paths along: US 50 from the north (Area #3) to the proposed Red Bank/US 50/Wooster interchange area, then south along Columbia Parkway (to Area #4); from US 50, extending south along Newtown Road and east across the Little Miami River bottom area to the proposed Red Bank/US 50/Wooster interchange area; along Webb Lane (west of Newtown) to SR 32, extending south towards the Lunken vicinity (to Area #4); and along Round Bottom Road south to SR 32.

Area #3: Wooster East (from Ancor/Mt. Carmel Hill to Milford)

The Wooster East area extends from the Ancor/Mt. Carmel Hill vicinity (of Area #2) northeast to the existing I-275/US 50 interchange in Milford Township. It encompasses portions of Union and Miami Townships, and portions of the communities of Terrace Park and Indian Hill.

The multi-modal transportation plan in this area, shown on Figure 3.13, is primarily transitbased, with TSM improvements on the existing roadway network, as summarized below. An important component of the plan in this area is a multi-modal convergence point in the I-275/US 50 interchange area at Milford.

TSM Improvements

- 6 roadway corridor improvements, including US 50 through Terrace Park (a corridor improvement/bike path); signal safety upgrade along US 50 in Terrace Park; Beechwood Road extension at Round Bottom Road; SR 28 from I-275 to Bypass 28; Wolfpen Pleasant Hill to SR 131; and US 50 in Milford (bridge work and signals).
- *More frequent bus service* along US 50 from Newtown (Area #2) to SR 28 in Milford, and along SR 28 from Milford east to I-275.

Bus Transit

- *Primary bus service routes* along US 50 from Newtown (Area #2) northeast to Milford, Milford Parkway, and I-275.
- Bus community circulator routes serving portions of Milford, and Milford and Miami Townships.
- 1 *bus/rail transit hub* located in Milford Township at the existing I-275/US 50 interchange area.



Rail Transit

- Oasis Rail Line extending from the south (Area #2) along the existing NS rail corridor to Milford at the existing I-275/US 50 interchange area.
- 1 bus/rail transit hub located in Milford Township at the existing I-275/US 50 interchange area.

<u>Highway</u>

• No new improvements proposed other than TSM projects.

<u>Bikeway</u>

- Dedicated bike path along US 50 (from Area #2), extending north, and using an old NS rail spur through Terrace Park along an extension of the Little Miami River Scenic Trail, to connect with an *existing bike path* along the Little Miami River in Milford.
- *Alternative bike link* under consideration, following existing US 50 through Terrace Park.

Area #4: Eastern Avenue/Lunken (from Downtown to Lunken/US 50)

The Eastern Avenue/Lunken area forms a narrow corridor beginning in downtown Cincinnati at the existing Riverfront Transit Center, and extending east following Eastern Avenue (US 52)/US 50 along the Ohio River to Lunken Airport, then extending north along US 50/Wilmer Avenue to the Red Bank/US 50 interchange area (Area #1). It follows along the edges of the East End, Columbia-Tusculum and Linwood neighborhoods.

The multi-modal transportation plan in this area, shown on Figure 3.14, is primarily transitbased, with TSM improvements on the existing roadway network, as summarized below. An important component of the plan in this area is the transit tie-in to the existing downtown Riverfront Transit Center, linking the Eastern Corridor to downtown Cincinnati and potential connection to the proposed I-71 rail transit corridor.

TSM Improvements

- 2 intersection improvements, including Delta Avenue at Eastern Avenue and Kellogg Avenue (replacement of old railroad bridge); and Columbia Parkway at Delta/Tusculum/Stanley.
- 5 roadway corridor improvements, including US 52 reconstruction from Eggleston to Rookwood railroad overpass; Kellogg Avenue from Delta to Congress; Kellogg Avenue from Stanley to Salem; Wilmer Avenue; and Wooster Pike from Beechmont to Red Bank.
- 2 *interchange improvements* at Beechmont Avenue/Wilmer Avenue/Wooster Pike and Beechmont and US 50.
- *More frequent bus service* along Columbia Parkway (US 50) from downtown to Red Bank Road and along Beechmont Avenue (SR 125).



Bus Transit

- *Primary bus service routes* along major downtown streets (4th, 5th, 6th, Vine Street, Race Street, Sycamore Street, Broadway, etc.); Fulton Avenue, Gilbert Avenue, Kemper Lane, East McMillan Street, William Howard Taft Road, Torrence Parkway, Woodburn Avenue, Victory Parkway, and Columbia Parkway in the Mt. Adams/Walnut Hill vicinity; Delta Avenue, Stanley Avenue, Linwood Avenue and Eastern Avenue in the Columbia-Tusculum/Linwood vicinity; and Beechmont Avenue (SR 125).
- Bus community circulator routes serving portions of East End, Columbia-Tusculum, Linwood and the Lunken Airport area.
- 1 *bus/rail transit hub* located downtown at the existing Riverfront Transit Center (under Second Street at The Banks).
- 2 bus hubs, one located along Gilbert Avenue between William Howard Taft Road and East McMillan Street (Walnut Hills/Peebles) and one located along Vine Street And Martin Luther King Drive (Uptown).

Rail Transit

- Oasis Riverfront Alternative 1A, beginning in the Riverfront Transit Center east portal in downtown Cincinnati and extending east on new alignment (portions of which are elevated) along, then over Pete Rose Way to the vicinity of the Montgomery Inn Boathouse.
- Oasis Riverfront Alternatives 2 and 3, generally following existing rail alignment in the downtown area from the Riverfront Transit Center west portal to the Boathouse (instead of new alignment, except for tie-in to the Transit Center via the west portal).
- Both riverfront alternatives from the Boathouse area continuing east on existing rail alignment through East End and Columbia-Tusculum, then northeast, paralleling Wilmer Avenue and Wooster Pike past Lunken Airport and Linwood to Red Bank Road in Fairfax (to Area #1).
- A Lunken Oasis Line alternative, to more closely serve the Lunken area, following Wilmer Avenue from approximately Airport Road to Beechmont Avenue, instead of the existing rail line in this vicinity.
- 1 bus/rail transit hub located downtown at the existing Riverfront Transit Center (see above).
- 5 Oasis rail stations located in the Eden Park vicinity (Fulton Avenue), Walnut Hills vicinity (William Howard Taft/Torrence Parkway), Columbia Tusculum (Delta Avenue), Lunken Airport (Wilmer Avenue), and Linwood (Beechmont Avenue).

<u>Highway</u>

• No new improvements proposed other than TSM projects.

<u>Bikeway</u>

• Dedicated bike paths (tying into existing bikeways at Lunken Airport) along: SR 32 from the Newtown vicinity (Area #2) to US 52 and south (to Area #5) towards River Downs; and along Eastern Avenue from downtown to the Lunken vicinity (Ohio River Bike Trail).



• *Alternative bike link* under consideration, following the banks of the Ohio River from Stanley Avenue to just east of downtown Cincinnati.

Area #5: Eastern Avenue/Lunken and Ohio 32/Eastgate (from Lunken/US 50 to I-275/Eastgate)

This area covers eastern portions of the Eastern Avenue/Lunken area and the Ohio 32 focus area of the land use vision study, but focuses primarily on the SR 125 corridor in Anderson Township between US 50 and I-275, and including the former Beechmont Mall area.

The multi-modal transportation plan in this area of the Eastern Corridor, shown on Figure 3.15, is primarily bus transit-based, with TSM improvements on the existing roadway network, as summarized below. An important component of the plan in this area is a proposed bus transit hub located in the Beechmont area.

TSM Improvements

- *3 intersection improvements,* including Five Mile Road at Nimitzview; Asbury Road and Beechmont; and Clough Pike at Mt. Carmel Road.
- *4 roadway corridor improvements,* including Clough Pike from Wolfangle Road to SR 32; signal timing and coordination along SR 125 (Beechmont Avenue Hamilton County); lighting/safety along Beechmont Avenue (Anderson Township); and Kellogg Avenue from Salem to I-275.
- 1 Park-and-Ride facility I-275 at SR 125.
- *More frequent bus service* along SR 125 from the Lunken vicinity (Area #4) to the SR 125/I-275 interchange.

Bus Transit

- *Primary bus service routes* along portions of I-275, Sutton Avenue, Five Mile Road, SR 125, Clough Pike, Nagel Road, and Eight Mile Road
- 1 bus hub located along SR 125 at Five Mile Road in the vicinity of the former Beechmont Mall.

Rail Transit and Highway

• No new improvements proposed other than TSM projects.

<u>Bikeway</u>

• *Dedicated bike path* along Kellogg Avenue/US 52 from the Lunken vicinity (Area #4), extending south past River Downs (Ohio River Trail); and a path on new alignment connecting Five Mile Road to Newtown Road.



Area #6: Ohio 32/Eastgate (from Ancor/Mt. Carmel Hill to Eastgate/Batavia)

This area encompasses the Eastgate area of Union Township, extending along SR 32 from Mt. Carmel Road (Area #2) east to the new interchange at Olive Branch-Stonelick Road, and along I-275 from Barg Salt Run Road south to the existing SR 125 interchange.

The multi-modal transportation plan in this area, shown on Figure 3.16, focuses on new capacity and access changes and improvements associated with SR 32 and F275, along with new rail transit, expanded bus, and TSM improvements on the existing roadway network, as summarized below. Important components to the plan in this area include a major upgrade to the existing F275/SR 32 interchange, establishment of a bus/rail transit hub in the Eastgate area, and upgrade of SR 32 to a limited access arterial roadway (from Area #2, east of F275).

TSM Improvements

- *4 intersection improvements,* including Old SR 74 at Rumpke Road; Clough Pike at Shayler Road; Clough Pike at McMann Road; and Gleneste-Withamsville Road at SR 125 (note: park-and-ride facility at SR 125/I-275 TSM project is included in Area #5).
- *4 roadway corridor improvements,* including Old SR 74 at two locations; Aicholtz Road improvements; and Merwin Ten Mile Road extension to Ferris Road with cul-de-sac at McMann Road.

Bus Transit

- *Primary bus service routes* along SR 32 from Area #2 to Eastgate Boulevard, I-275, Gleneste-Withamsville Road, Old SR 74 from Mt. Carmel Road to Gleneste-Withamsville Road, Mt. Carmel-Tobasco Road, and Clough Pike from Area #5 to Aicholtz Road.
- Bus community circulator route serving the Eastgate area.
- 1 bus/rail transit hub located in the Eastgate vicinity along Aicholtz Road.

Rail Transit

• *Future Wasson Rail Line* following improved SR 32 alignment from Area #2, and extending east to proposed bus/rail transit hub in Eastgate vicinity.

<u>Highway</u>

- 3 general configurations under consideration for providing increased capacity and improved access for SR 32 and I-275 in the Eastgate area, including: 1) Alternative I(IV) (a configuration utilizing full directional flyover ramps at the I-275/SR 32 interchange), 2) Alternative P(IV) (a configuration consisting of a relocated I-275/SR 32 interchange), and 3) Alternative Q3(IV) (a configuration consisting of collector-distributors along both I-275 and SR 32). There are possible minor variations within these three basic alternatives, as well as the possibility for phasing various portions of the alternatives in over time.
- All three configurations include: a) a major upgrade to the existing 1275/SR 32 interchange, b) limited access along improved SR 32 (with full access control in the future), and c) local roadway extensions and improvements.



3.5. NO BUILD ALTERNATIVE

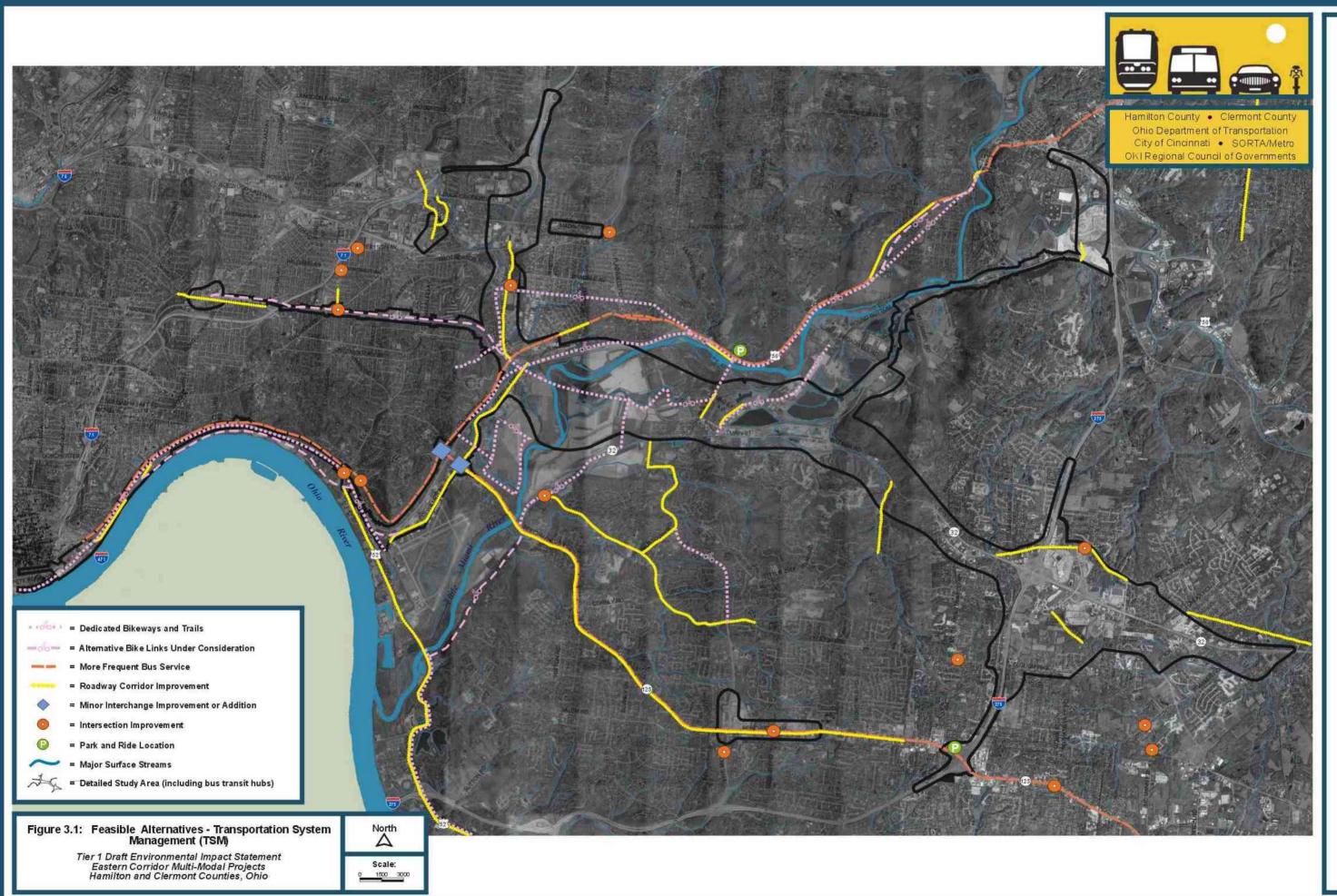
The No Build Alternative consists of continued use of the existing transportation network (including existing roadway and bus transit components) to meet the long-term transportation needs of the region within the Eastern Corridor. The No Build transportation network includes maintenance of existing facilities and systems as well as near-term improvements scheduled for implementation for which funding has been committed (near-term projects included in the OKI Region's Transportation Improvement Program, or TIP, and Ohio's State Transportation Improvement Plan, or STIP).

Coordination with OKI in 2002 identified over seventy TIP/STIP committed projects in the 13county region, all of which were included in the regional travel demand modeling work for the Eastern Corridor to make sure that planned minor improvements to the existing network were properly accounted for as a baseline condition. Three of these seventy TIP/STIP committed projects occurred within the Eastern Corridor, including: 1) Interstate 275 widening from State Route 32 to Five Mile Road, 2) a new interchange for Olive Branch-Stonelick Road at State Route 32, and 3) widening of State Route 125 from SR 32 to Corbly Road. The latter two projects have recently been completed and are open to traffic. About two-thirds of the I275 widening project is substantially complete.

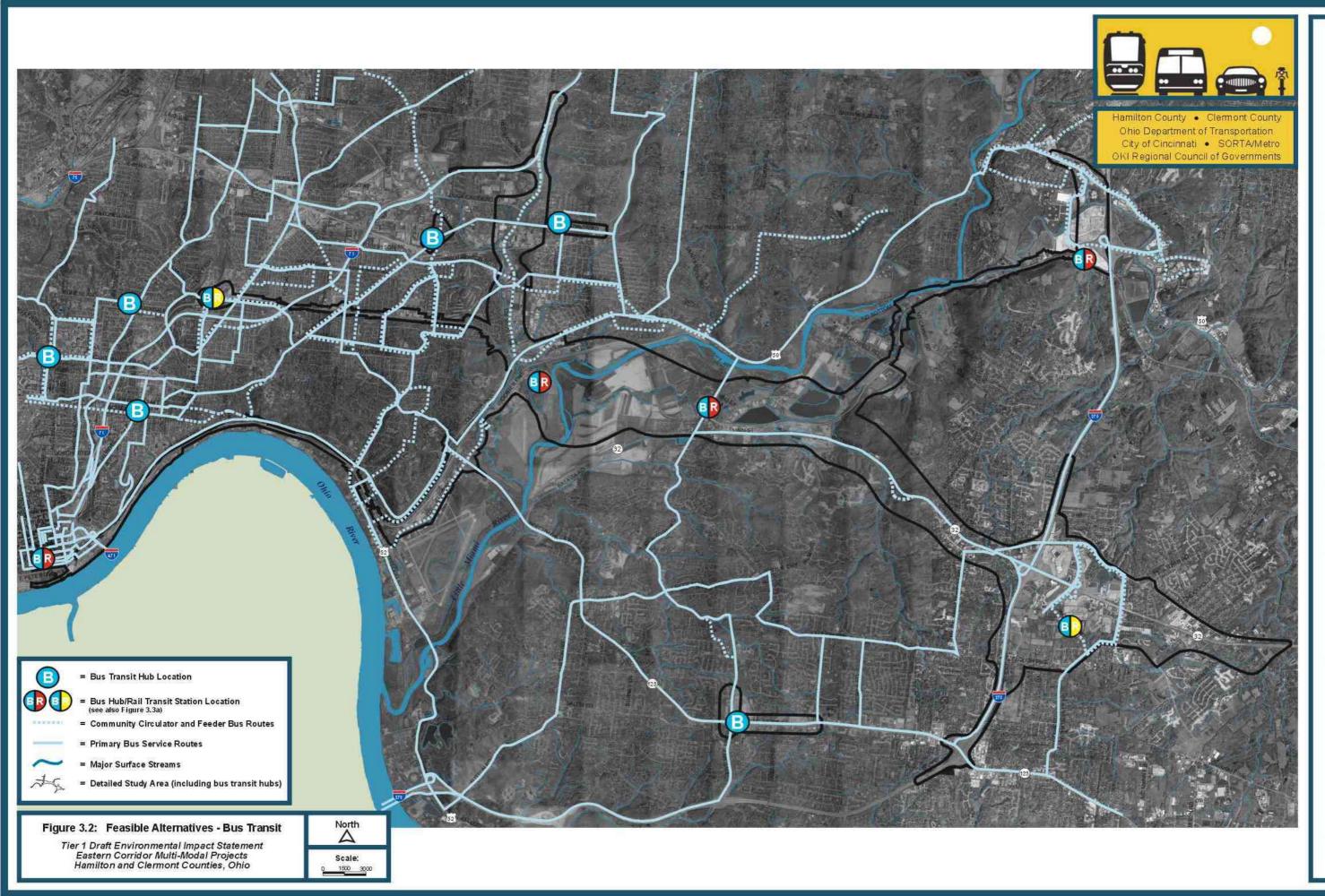
Recently (2004 update to TIP/STIP), a few other minor projects were added to the committed project framework for the No Build condition within the Eastern Corridor. These include minor resurfacing, bridge rehabilitation, signal coordination and landscaping projects.

Consequences of the No-Build Alternative are discussed in Chapter 5.7 of this DEIS. Secondary and cumulative impacts associated with the No Build Alternative are presented in Chapter 5.6.2 (Current Development Activities).

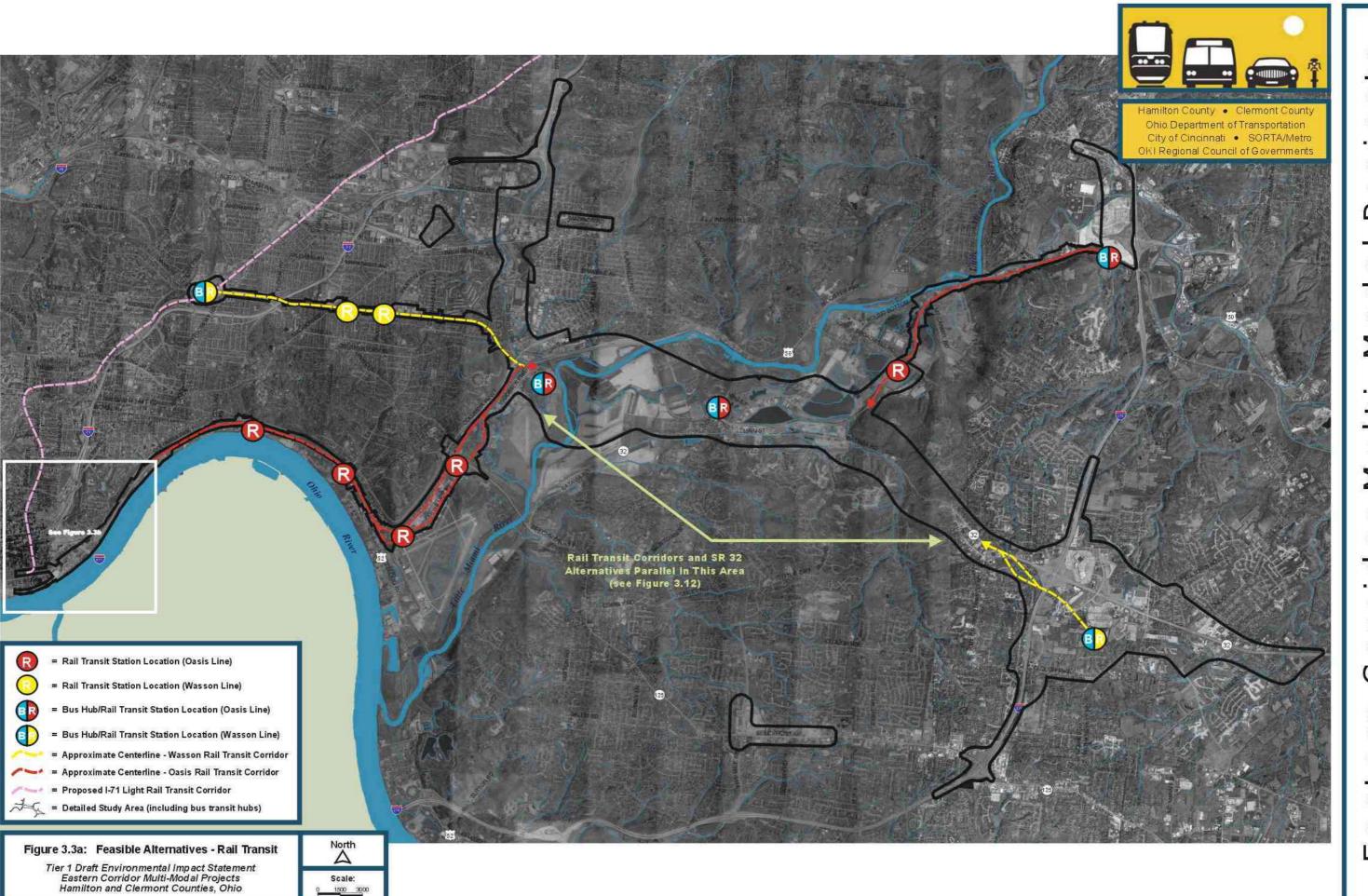
The Eastern Corridor Major Investment Study (OKI, April 2000) concluded that the No Build Alternative would not meet the long-term transportation needs of the region or the Eastern Corridor study area.



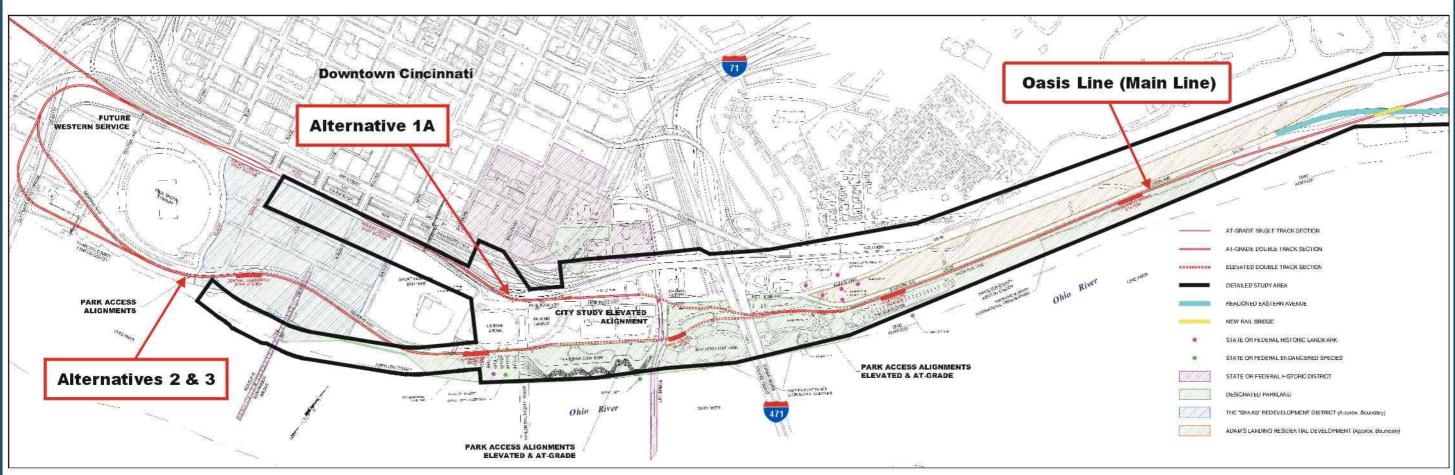
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Oasis/Riverfront Rail Transit Study PRELIMINARY FEASIBLE ALTERNATIVES

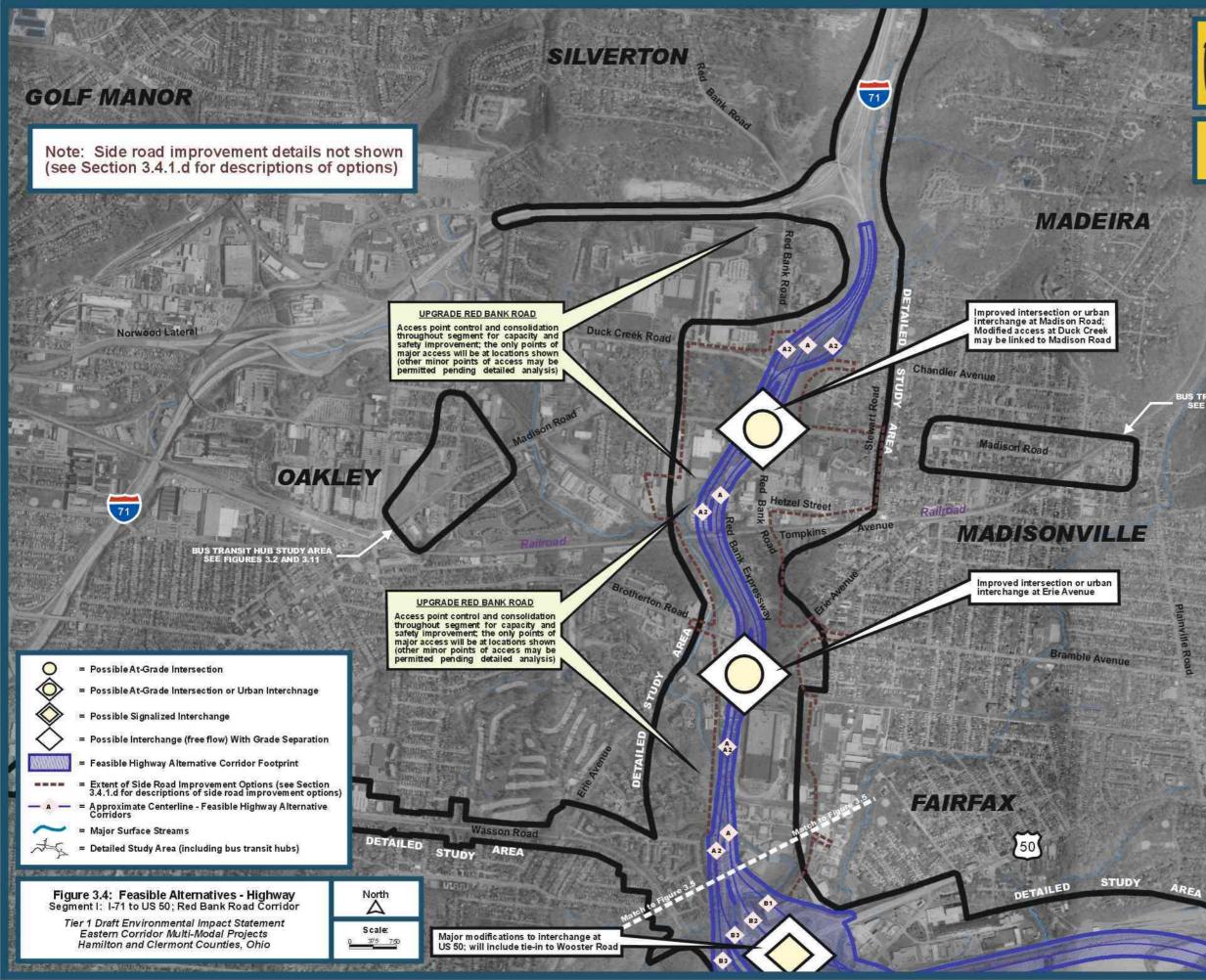
Figure 3.3b: Oasis Rail Alternatives in Riverfront Area

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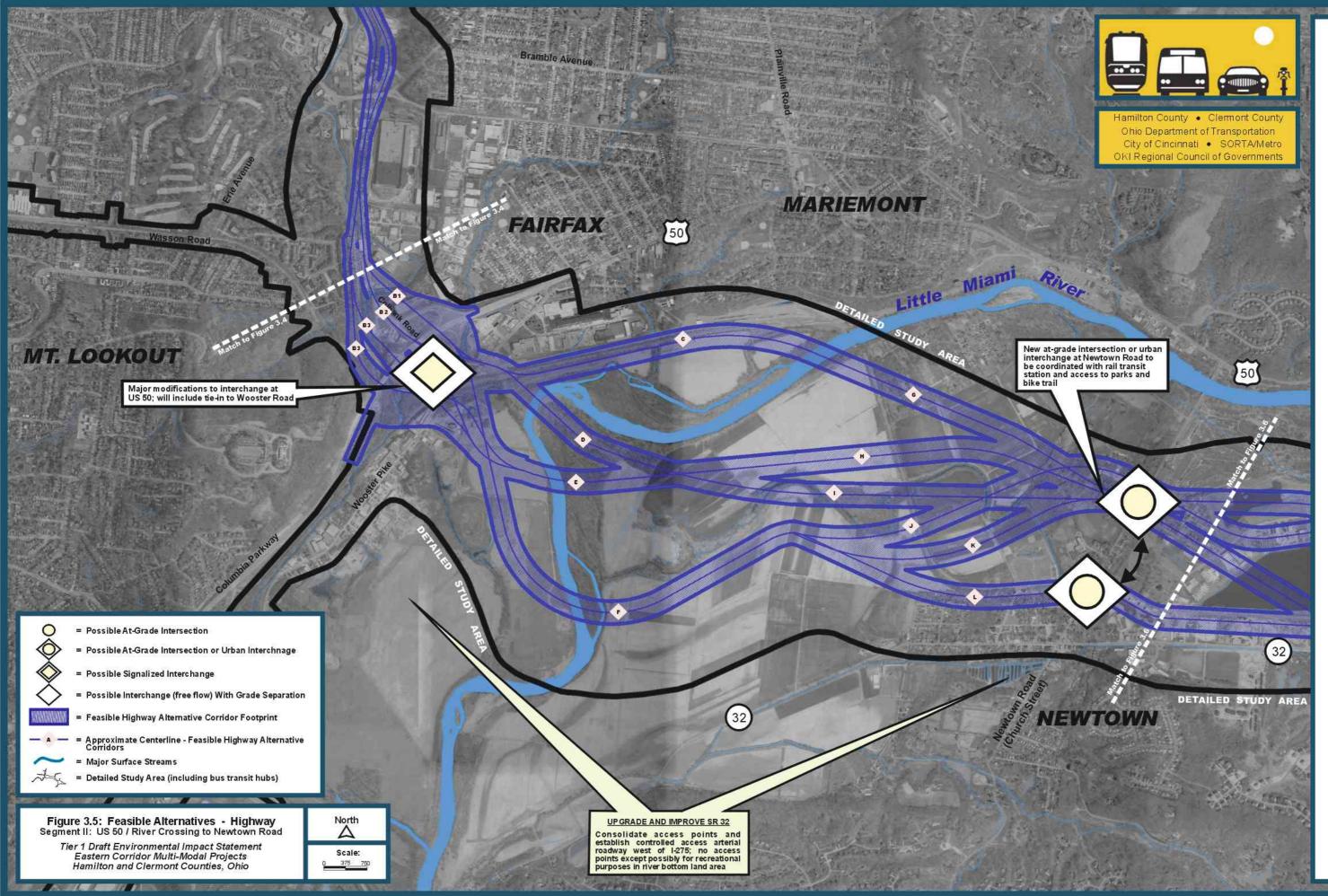


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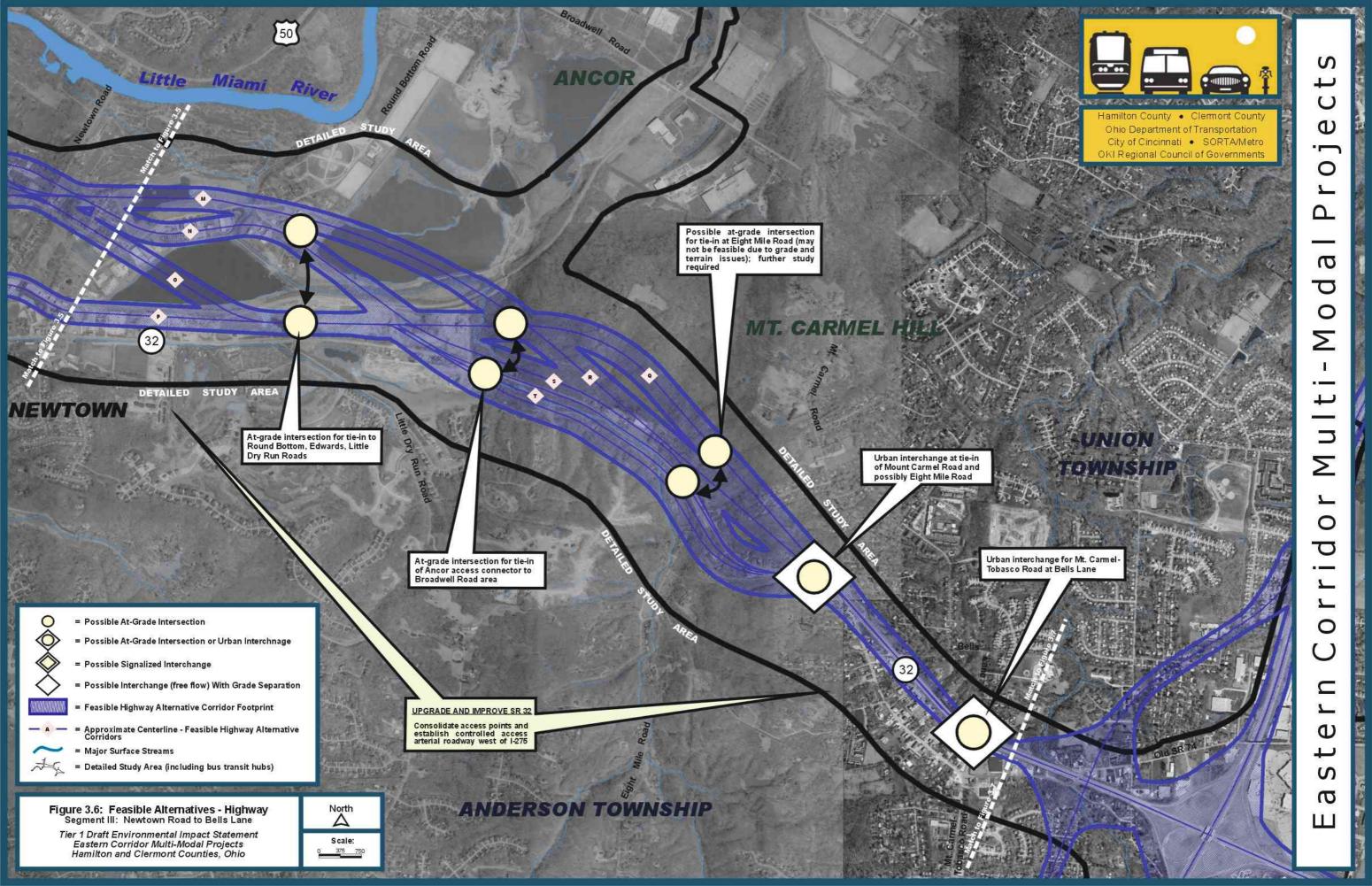
BUS TRANSIT HUB STUDY AREA SEE FIGURES 3.2 AND 3.11

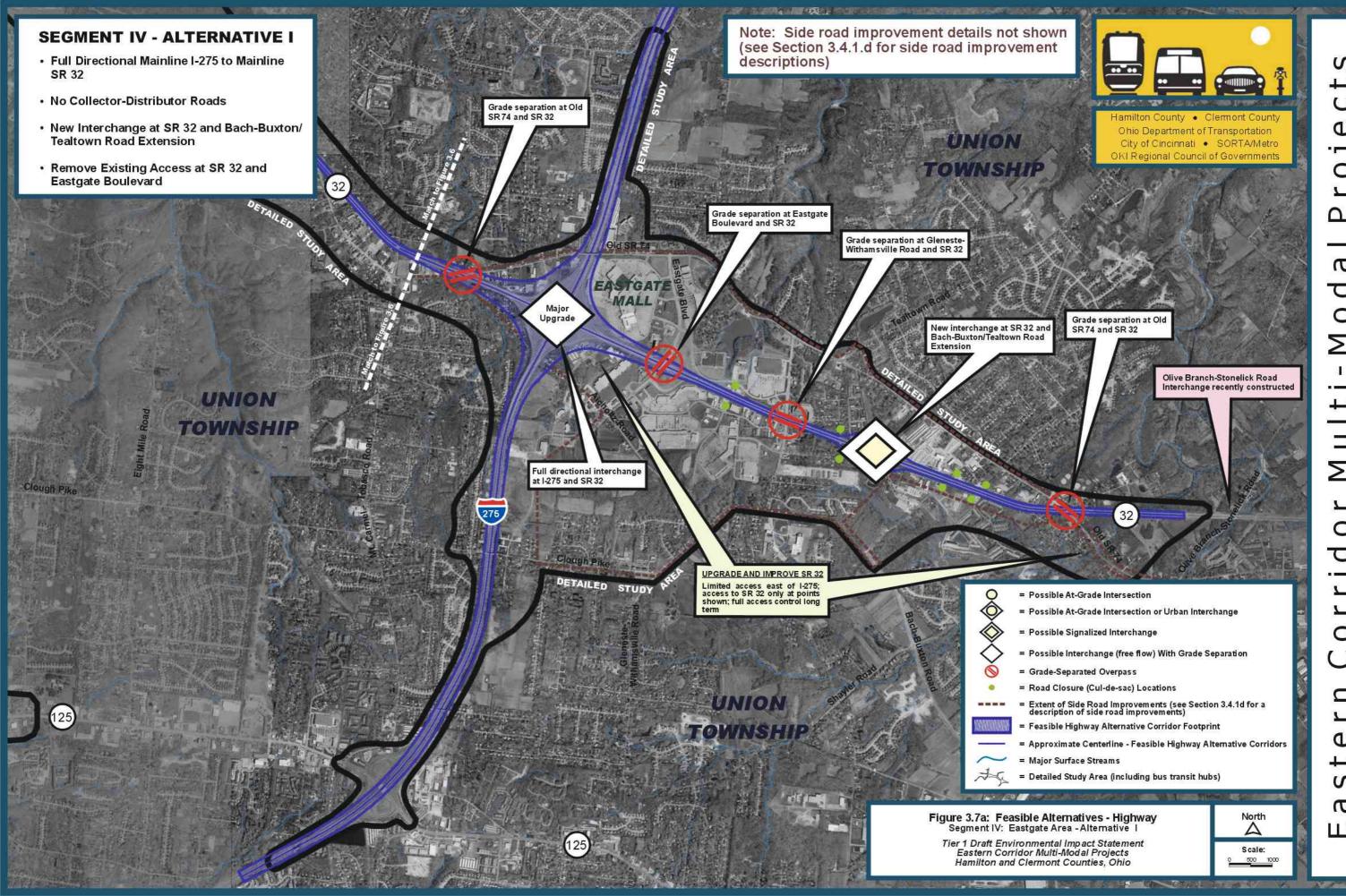
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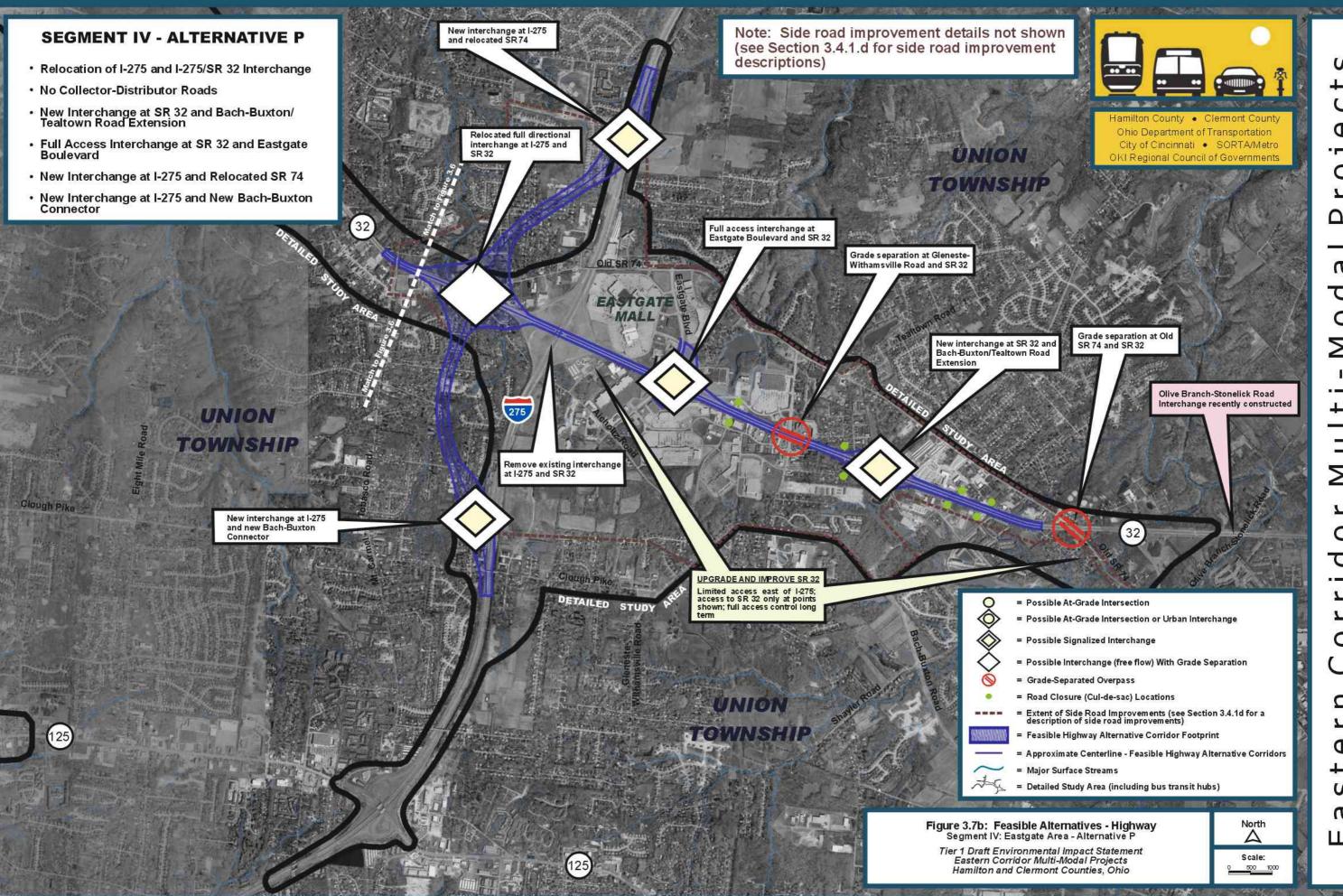


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SEGMENT IV - ALTERNATIVE Q3

- Collector-Distributor Roads along I-275 and SR 32
- Improved Interchange for access between I-275 mainline and SR 32 mainline and Collector-Distributors
- Interchange Access at SR 32 and Eastgate Boulevard
- At-grade Access at SR 32 and Gleneste-Withamsville Road
- At-grade Access at SR 32 and Old SR 74 (west of I-275)
- New Interchange at I-275 and Eastgate Square Drive Extension

Clough Pike

New Interchange at SR 32 and Bach-Buxton Extension

UNION

TOWNSHIP

New interchange at I-275 and Eastgate Square Drive Extension for access

between I-275 Collector Distributors and Eastgate Square Drive Extension

Note: Side road improvement details not shown (see Section 3.4.1.d for side road improvement descriptions)

Grade separation at Old SR 74 and I-275 UNION TOWNSHIP Interchange at Eastgate Boulevard and SR 32 for access between SR 32 mainline and Eastgate Boulevard and 1-275 mainline At-grade intersection at Gleneste-Withamsville Road and SR 32 (mainline only); no access to Gleneste-Withamsville Road from SR 32 Collector-Distributors STGATE MALL New interchange at SR 32 and Bach-

improved interchange for access between I-275 mainline and SR 32 mainline and Collector-Distributors

125

DETAILED STUDY

At-grade intersection at

SR 32 and Old SR 74

32

UPGRADE AND IMPROVE SR 3 Limited access east of I-275; access to SR 32 only at points shown; full access control long tem

UNION

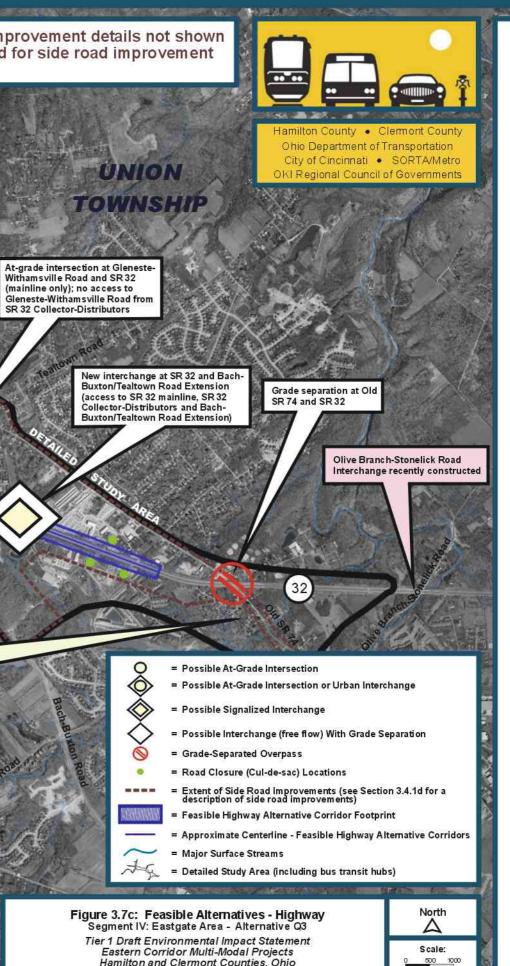
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Collector-Distributors and Bach-

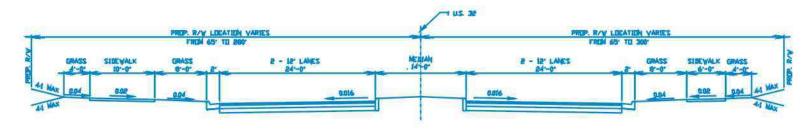
Figure 3.7c: Feasible Alternatives - Highway Segment IV: Eastgate Area - Alternative Q3 Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

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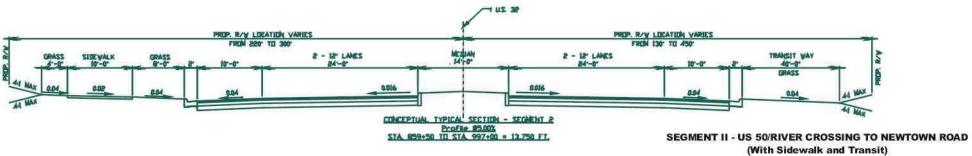


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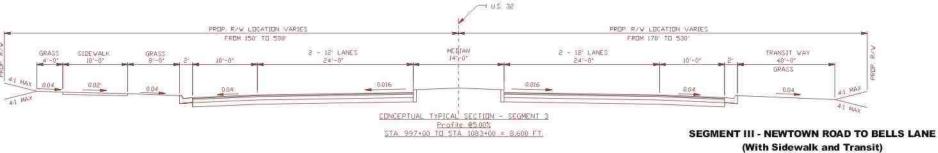


Figure 3.8a: Red Bank and SR 32 Roadway and Transit Typical Sections

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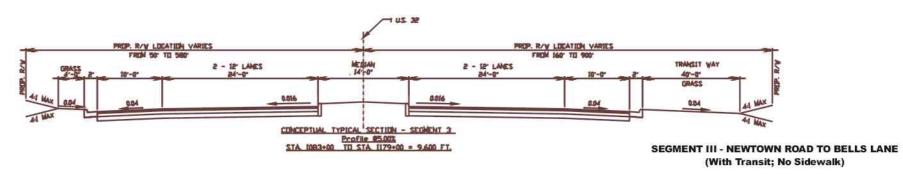




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SEGMENT I - I-71 TO US 50 (RED BANK ROAD CORRIDOR) (Alt. A 4-lane option)



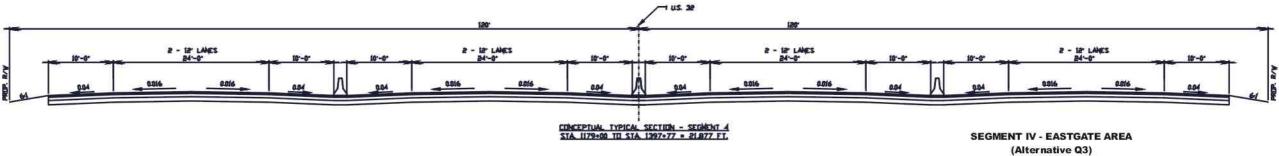


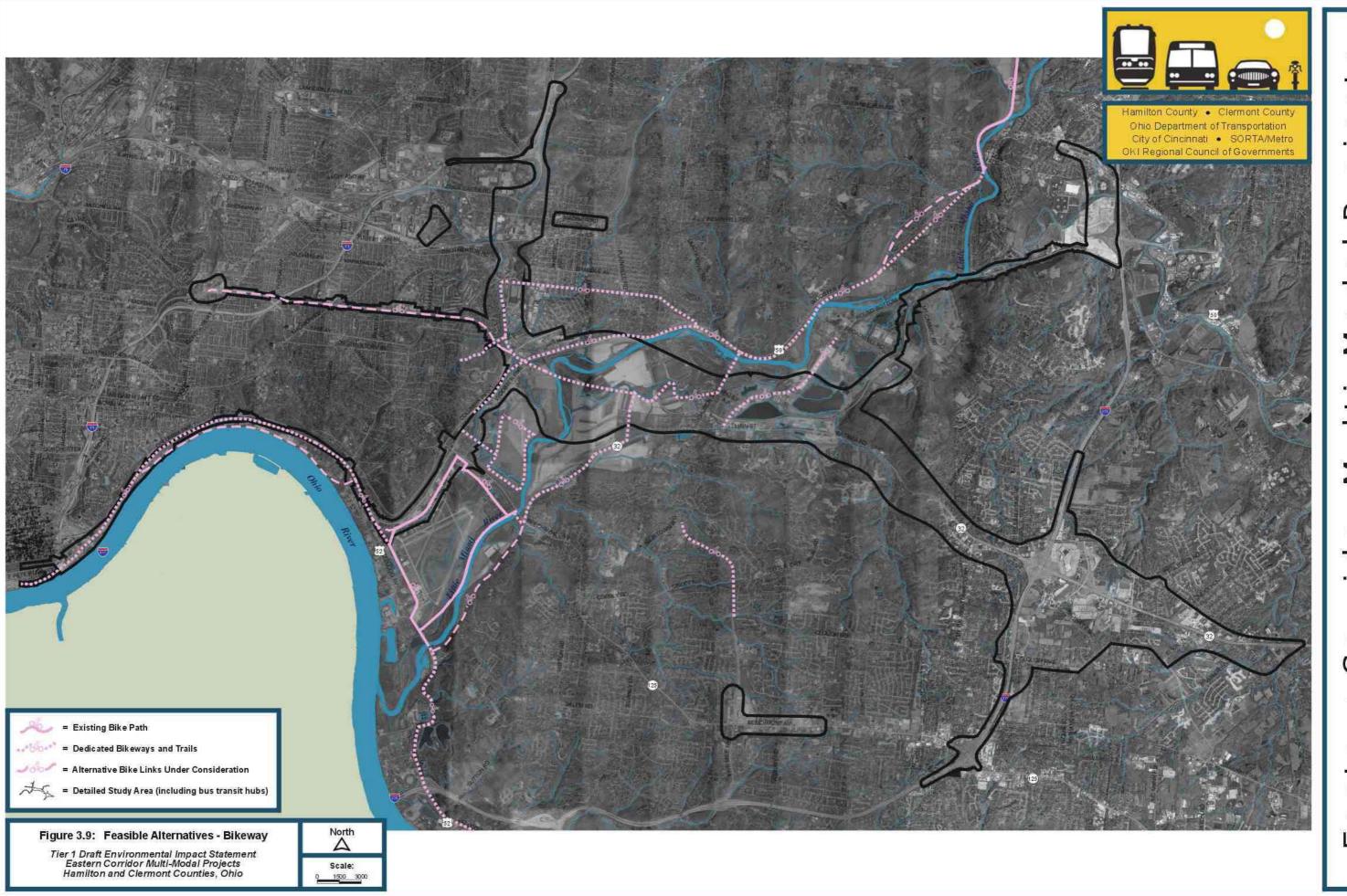
Figure 3.8b: SR 32 Roadway and Transit Typical Sections

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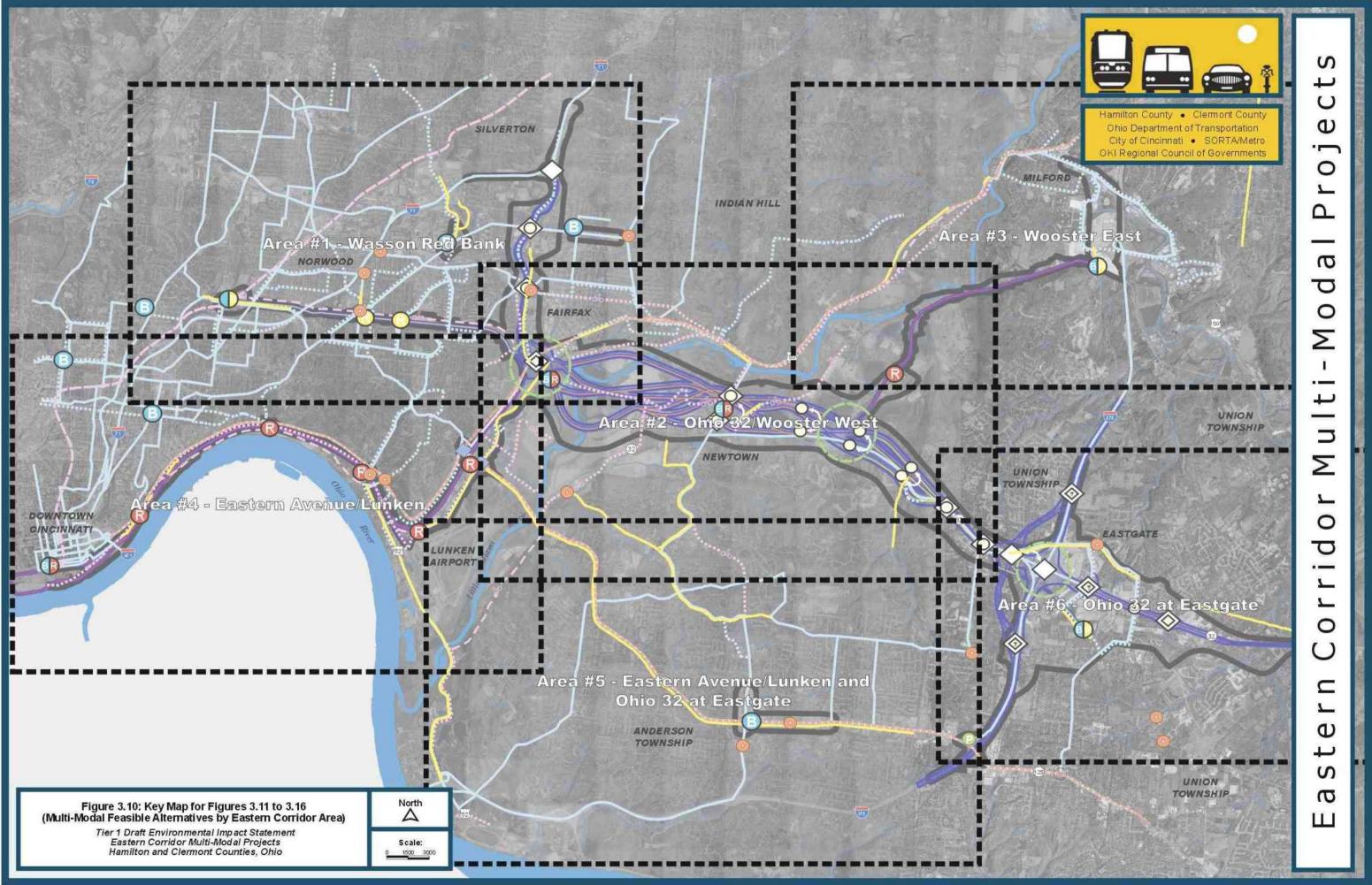


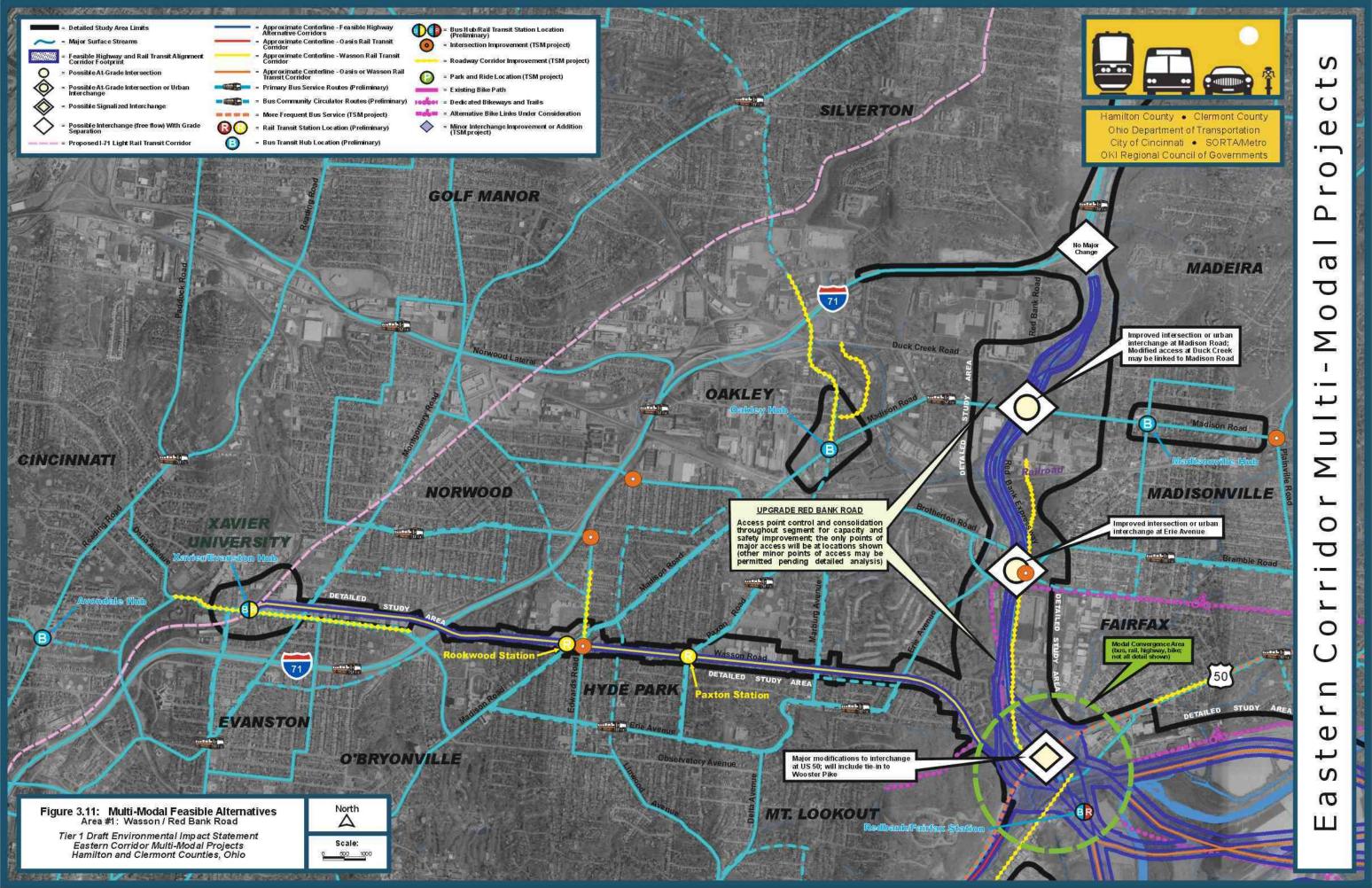


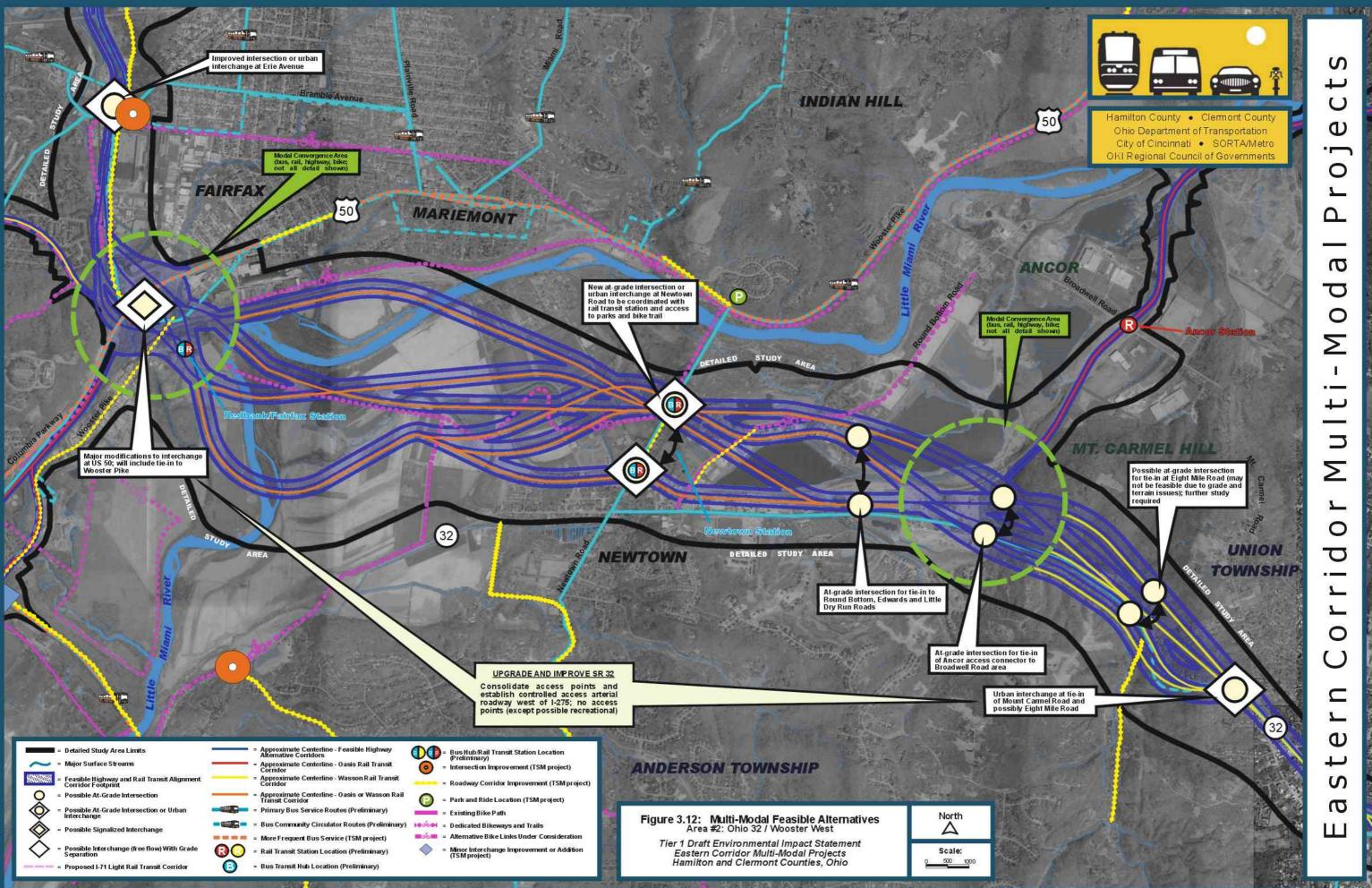
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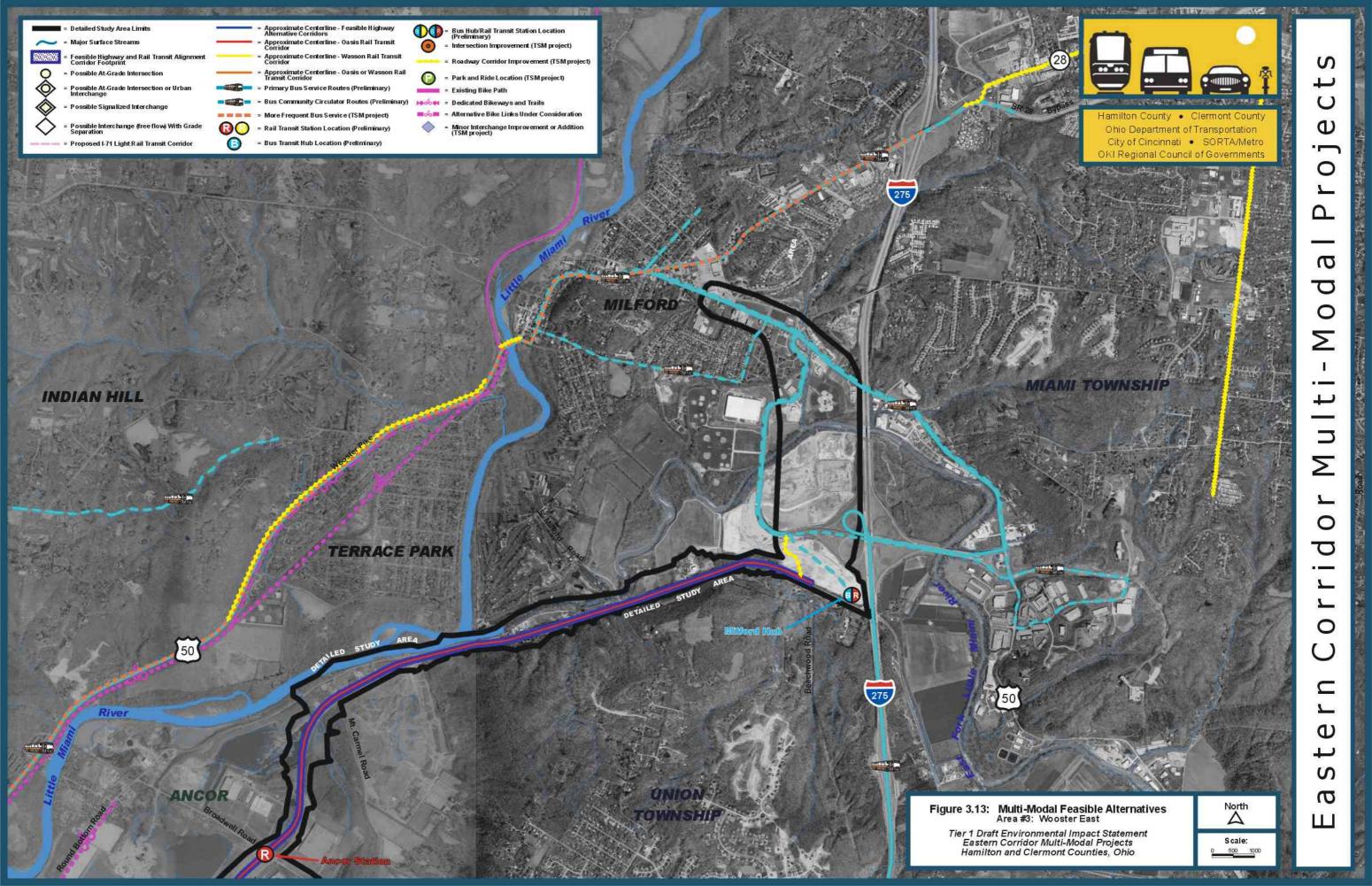
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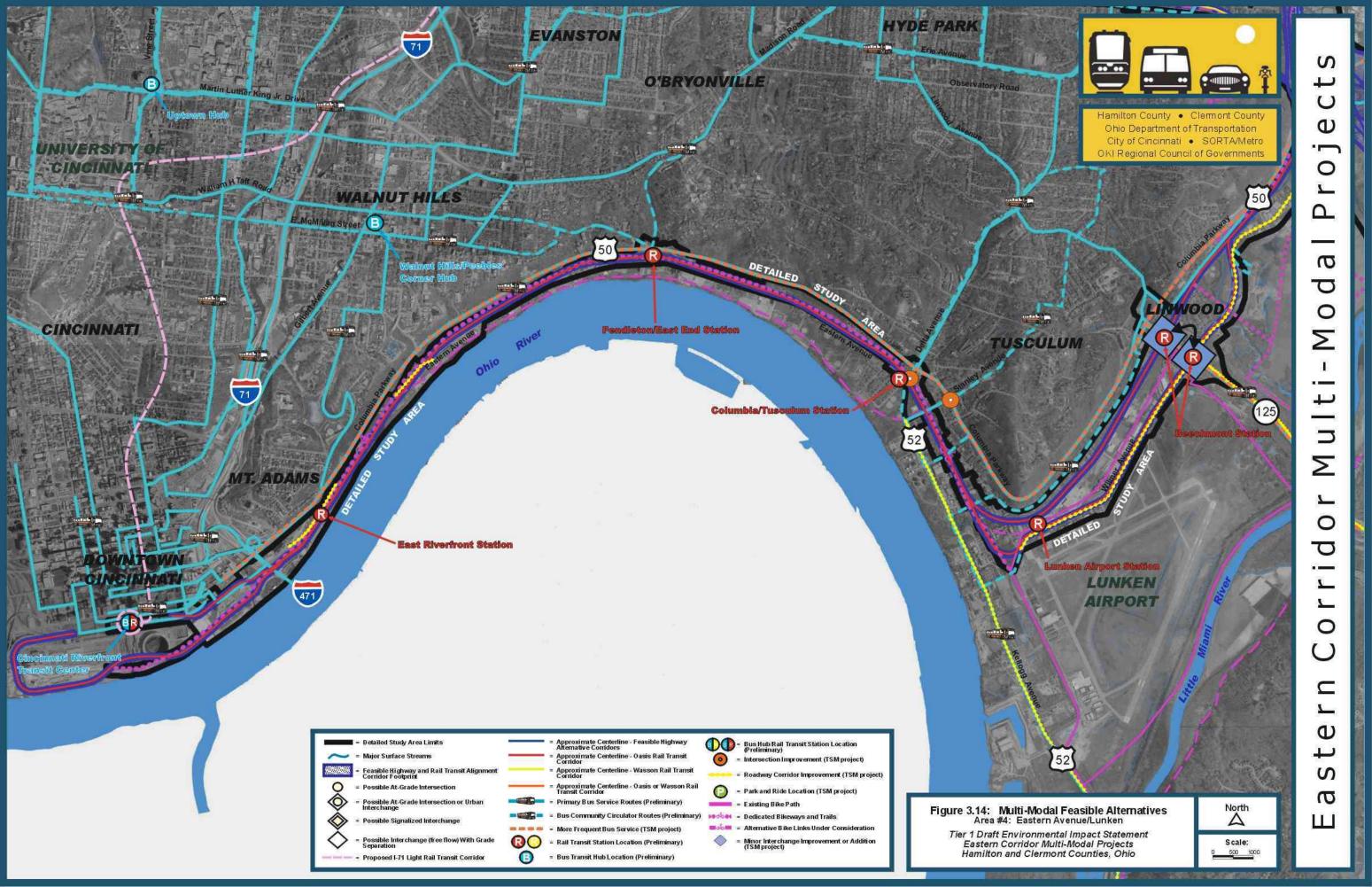


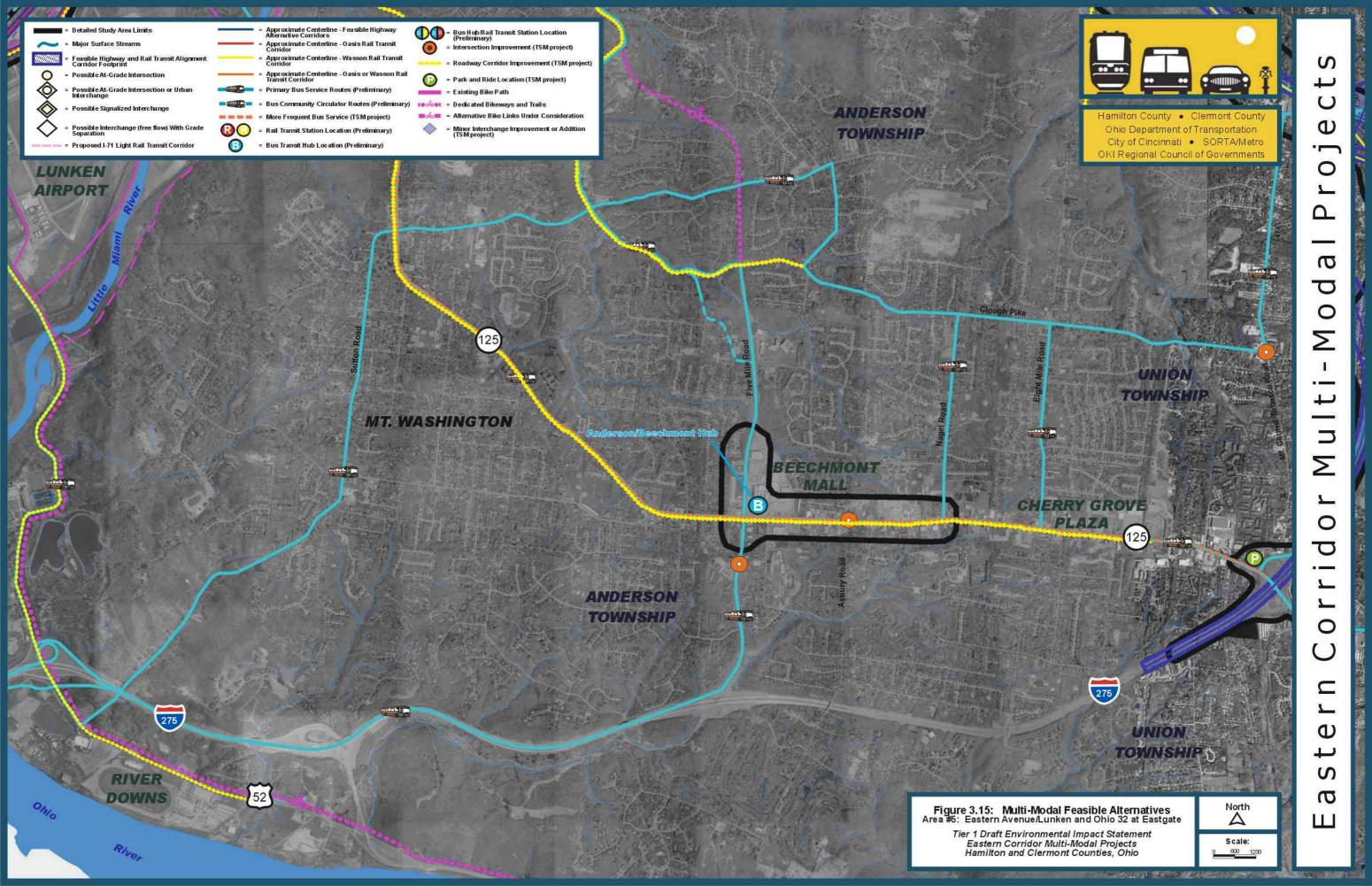


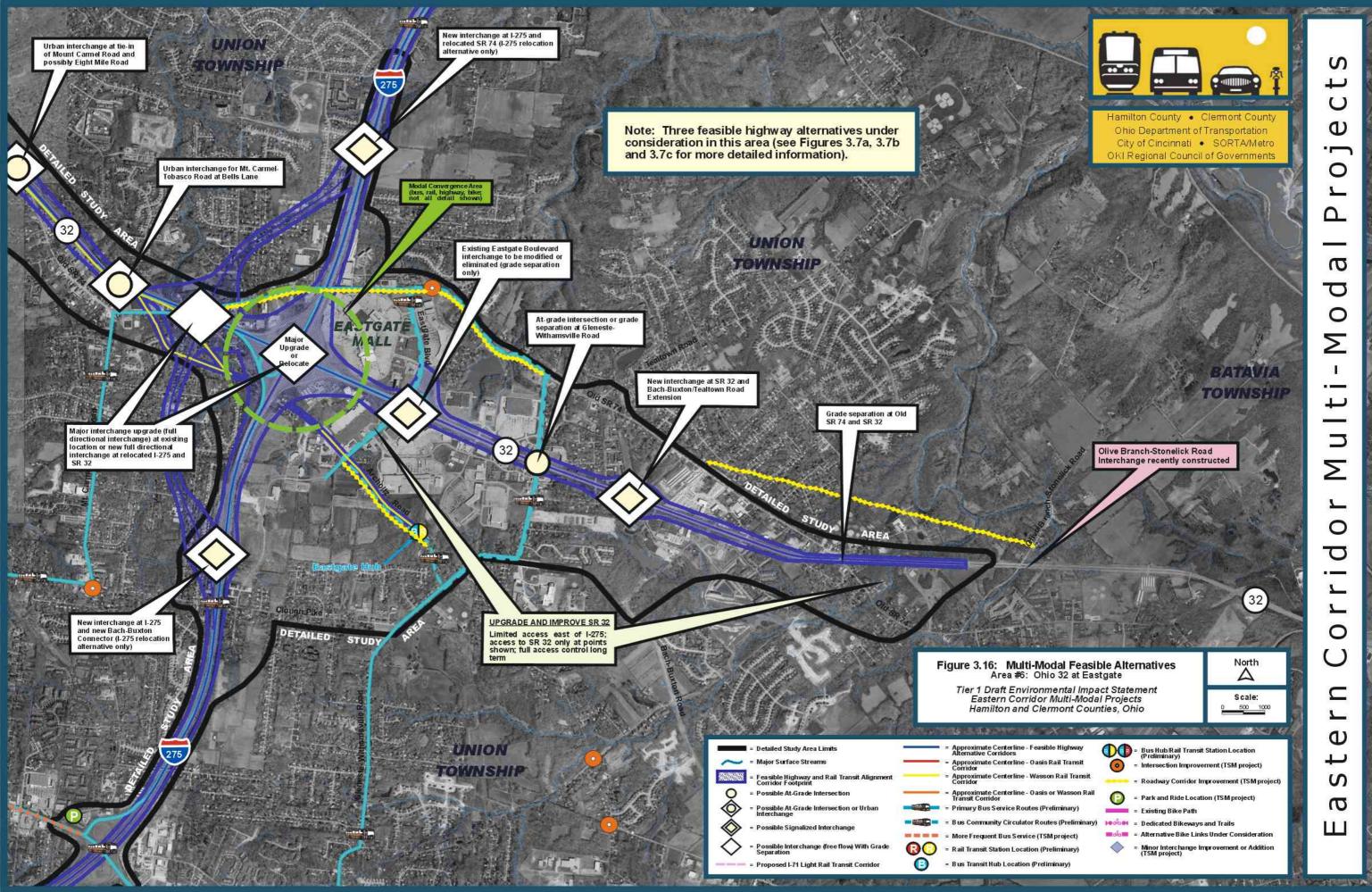


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CHAPTER 4 AFFECTED ENVIRONMENT



CHAPTER 4 AFFECTED ENVIRONMENT

This chapter of the DEIS presents a description of the existing environmental features and conditions occurring in the Eastern Corridor for the purpose of providing an overall understanding (big picture view) of study area characteristics, and to provide a baseline for the evaluation of potential environmental impacts, as detailed in Chapter 5.

Chapter 4 Organization

Environmental features described in Chapter 4 are grouped into three main categories:

- Section 4.1 the Natural Environment,
- Section 4.2 the Social Environment, and
- Section 4.3 Cultural Resources.

For features within these categories, discussion generally consists of a description of the methods used to assess conditions, followed by description of the existing conditions noted in the area based on secondary source review and field study.

Early Environmental Work and Study Area Development

Early environmental work conducted for Tier 1 presented an overview-level inventory of environmental resources occurring in a broad, approximately 165 square mile study area in western Hamilton and eastern Clermont Counties - generally corresponding to the area evaluated for the Eastern Corridor MIS, and for a core study area generally corresponding to the approximate corridor identified as requiring further evaluation based on the MIS recommended plan (see Figure 1.1). This information, which included tabular summary of key environmental features in the area, Geographic Information Systems (GIS) based environmental maps and appendices containing compiled secondary source data, was summarized in the Eastern Corridor Environmental Inventory Source Document (Balke American et al., March 15, 2002).

Further refinement of the original core study area was made early in project development during the identification of conceptual highway, rail and bus alternatives for the project, and based on comments received at the first round of public meetings held for the Eastern Corridor in May and June of 2002. This refined area, shown on Figure 1.2, is the Eastern Corridor detailed study area, and is the focus of environmental work presented in this DEIS. It covers approximately 14 square miles of the greater Cincinnati metropolitan area, about 8,600 acres, extending from the Cincinnati business district/riverfront area in Hamilton County, east across the Little Miami River and I-275 outerbelt to Clermont County, near the communities of Milford to the north, Batavia to the east, and Amelia to the south.

Environmental Work Plans and Documentation of Tier 1 Studies

As described in Chapter 1, coordination was conducted with environmental resource agencies early in project development to determine the appropriate sampling methodologies and level of effort to be conducted for key environmental features during Tier 1 of the Eastern Corridor project. This coordination resulted in the development, by discipline, of specific Tier 1 environmental work plans that outlined strategy of work, scope of field studies to be conducted



in Tier 1 within the detailed study area, methods for the documentation of findings, and the level of resource agency review.

The methods described below are based on the environmental work plans developed during this agency coordination process, and the work plans by discipline are included in Appendix A.

Results from the Eastern Corridor Tier 1 studies are documented in the following reports: Ecological Resources Inventory Report (Balke American, February 2003), Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives (Gray and Pape, Inc., December 2002), Results of Hazardous Materials Environmental Study (Corridor Inventory and File Review of Priority Sites), Eastern Corridor PE/EIS (H.C. Nutting Company, December 2002) and Addendum to Part A Environmental Studies (Balke American, June 2003). Results from these studies are included in the information presented in Chapter 4 below (Affected Environment), and were used in determining preliminary project impacts, as presented in Chapter 5 of this DEIS.

4.1. NATURAL ENVIRONMENT

4.1.1. Physiography, Geology and Soils

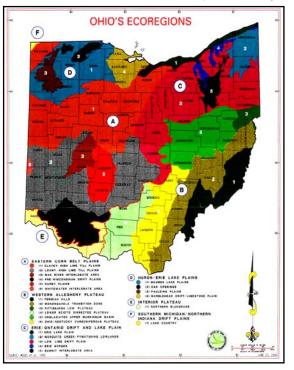
Physiography, geology and soils information for the project area were obtained through review of secondary source materials and GIS data/mapping available from the following sources: Ohio Environmental Protection Agency, Division of Water (OEPA); U.S. Environmental Protection Agency (USEPA); Ohio Department of Natural Resources, Division of Geological Survey; U.S. Department of Agriculture, Natural Resources Conservation Service (soil surveys)

for Hamilton County and Clermont County); and Cincinnati Area Geographic Information System (CAGIS) mapping for Hamilton County and Clermont County, Ohio.

Description of existing conditions regarding physiography, geology and soils in the project area is presented below.

Physiography and Drainage

Ecoregions, delineated by the USEPA, are land areas of the United States grouped together based on similarities in mosaic of land use, potential natural vegetation, predominant landform(s) and soils. EPA uses the ecoregion concept to determine attainable biological, chemical and physical attributes of aquatic resources occurring within a particular region, and to develop management strategies for those resources.





Ohio contains six ecoregions overall (see above) based on mapping developed by Omernick and Gallant (1988) and updated by Woods et al. (1998). The Eastern Corridor project area is located within two of these ecoregions - the Eastern Corn Belt Plains and the Interior Plateau.

Most of the project area occurs within the Eastern Corn Belt Plains. As a whole, this ecoregion encompasses most of west central and southwest Ohio (extending into Indiana), and is characterized as a rolling glacial till plain, with soils derived from glacial materials, potential natural vegetation consisting of beech-maple hardwood forest, and land use comprised of a combination of agricultural cropland, woodland and small to medium urban areas. Agricultural cropland is the predominant land use in this ecoregion overall, however, in the Eastern Corridor, is only widely scattered due to clearing for urban/suburban development.

The second ecoregion in the Eastern Corridor, the Interior Plateau, encompasses only a small part of Ohio (as a narrow band along the Ohio River in the southwestern part of the state), and mostly extends south into central Kentucky and Tennessee and west into southern Indiana. This ecoregion, as a whole, is characterized by plains with more rugged terrain (moderate relief) compared to the Eastern Corn Belt, has soils derived from underlying sandstone, siltstone, shale and limestone bedrock (not glacial till), potential natural vegetation consisting of oak-hickory forest, and land use comprised of a mix of agricultural land (crops and pasture) and woodland. This ecoregion occurs in the southern edge of the Eastern Corridor project area along the steep banks of the Ohio River, and is comprised of a mix of woodland and urban/suburban land uses.

As shown on Figure 4.1, most of the Eastern Corridor project area occurs within the Little Miami River Drainage Basin, including its main tributary, the East Fork, with small portions along the east and west ends drained by small tributaries to the Ohio River - part of the Southwest Ohio Tributaries Basin (drainage basins as delineated by OEPA and regulated for water quality under Chapter 3745-1 of the Ohio Administrative Code). Overall, the Little Miami River flows for approximately 105 miles, drains about 1,755 square miles and has an average gradient of 6.5 feet per mile (ODNR 1960).

Geology and Topography

Bedrock in the Eastern Corridor area is composed of soft shale of the Ordovician-aged Kope Formation overlain by more limestone-rich and erosion resistant Fairview and Grant Lake Formations. The primary structural feature in the project vicinity affecting this bedrock pattern is the Cincinnati Arch, which is a broad anticline extending from Alabama to Canada. The Eastern Corridor study area generally occurs on the crest of the Cincinnati Arch (i.e., the location of the geologically oldest Ordovician-aged formations) and into the eastern flank of this feature. The rock strata, therefore, dip subtly to the southeast (about 6 feet per mile) and younger Silurian and Devonian aged bedrock generally occur to the east of the project area.

Uplands in the Eastern Corridor are overlain by a layer of Illinoian (mostly) and Pre-Illinoian glacial drift, composed of a mix of sand, silt, clay and coarse fragments referred to as "till". Except for steep-sloped areas along the Ohio River at the western end of the project, topography in the area is primarily shaped by the deposition and subsequent erosion of these glacial deposits.



Unconsolidated deposits of alluvium occur in the Eastern Corridor, specifically along the floodplains of the Little Miami River and East Fork. The broad Little Miami River floodplain, which is a remnant of a valley extant prior to Pleistocene glaciation, contains alluvial deposits that are poorly sorted and stratified with silt and sand deposited by erosion, flooding and recent stream deposition actions.

Topography in most of the Eastern Corridor study area is controlled by glacial deposits and stream erosion, whereas a small portion in the westernmost area (along the banks of the Ohio River) is controlled by bedrock topography. Elevations in the area range from about 455 feet mean sea level (msl) at the Ohio River to about 973 feet msl in upland plateaus, with the greatest relief and steepest slopes along the Ohio River.

Soils

Glacial deposits, including pre-Illinoian and Illinoian glacial till, outwash, lacustrine deposits (lake clays) and loess, are the dominant parent materials for soils in the Eastern Corridor area. Other parent materials include alluvium, residual soils and man-placed fill.

Soils in the Eastern Corridor are predominantly loams, silt loams and silty clay loams. Roughly 13 associations consisting of about 30 mapped soil series occur in the area. These series have been grouped into five main categories based on similar soil characteristics, features and topographic location, as summarized below and shown on Figure 4.2 (note: this grouping does not correspond to any formal NRCS grouping, but provides an overall representation of the predominant soil makeup occurring in the project study area):

- <u>High Erodibility Soils</u> Hamilton and Clermont County Soil Surveys describe these as occurring on steep-slopes and exhibiting severe erosion potential, thus requiring special methods of operation during construction activities to prevent soil loss. In the Eastern Corridor study area, they generally occur on the slopes of valley walls above the Little Miami River and Ohio River and include three mapped units Casco silt loam, 25-35% slopes (above Little Miami River in US 50/Redbank Road area and above SR 32 east of Newtown), Casco silt loam, 35-70% slopes (above Little Miami River just east of Mount Carmel Road) and Eden flaggy silt loam, 40-60% slopes (above Ohio River along Columbia Parkway). Overall, high erodibility soils comprise about one percent of the total Eastern Corridor detailed study area.
- <u>Urban Land Complex Soils</u> These soils occur in heavily urbanized and developed areas that comprise a substantial portion about 33% of the project study area. A total of 13 soil series (mapped as 19 separate units) comprise the urban land complex soils in the Eastern Corridor, including: Avonburg-Urban, Eden-Urban, Eldean-Urban, Genesee-Urban, Parke-Urban, Pate-Urban, Rossmoyne-Urban, Urban land-Elkinsville, Urban land-Huntington, Urban land-Martinsville, Urban land-Rossmoyne, Fox-Urban and Ockley-Urban land complex. Characteristics of these soils tend to be obscured due to the fact that they are paved over or covered with structures and buildings. They occur in greatest concentration in the Eastern Corridor study area along Red Bank Road, Wasson Avenue, Dana Avenue, I-71, Columbia Parkway, Eastern Avenue, Wooster Pike/US 50, SR 32 in Newtown and Broadwell Road. These soils also occur in the vicinities of Oakley, Madisonville, Xavier/Evanston, Beechmont Avenue, Milford and the Eastgate area.
- <u>Upland Soils</u> These soils occur along river valley walls, upland terraces and plateaus, comprising the greatest percentage about 45% of the Eastern Corridor study area. A total of 28 soil series (mapped as 48 separate units) are included in these upland soils, consisting of: Avonburg silt loam,



Bonnel silt loam, Cincinnati silt loam, Cincinnati and Hickory soils, cut and fill soil, Edenton loam, Eden silty clay loam, Eel silt loam, Eldean silt loam, Fox silt loam, Genesee silt loam, Genesee loam, Hickory loam, Jules silt loam, Lanier sandy loam, Martinsville silt loam, McGary silt loam, Ockley silt loam, Parke-Urban land complex, Pate silty clay loam, gravel pit soils, Rodman and Casco loams, Rossmoyne silt loam, Sees silty clay loam, Shoals silt loam, Stonelick sandy loam, Udorthents and Wea silt loam. These upland soils are concentrated primarily in the eastern portion of the study area in Clermont County along SR 32, I-275 and Round Bottom Road. They also occur in Hamilton County along SR 32 at Eight Mile Road and Round Bottom Road, with small areas occurring along Red Bank Road and on the slopes above Columbia Parkway. They are characterized by areas of gentle to steep slopes and small to intermediate-sized shallow surface streams. These soils tend to be moderately well drained and are primarily used for agricultural purposes in level areas and where they have not been developed.

- <u>Floodplain and Bottomland Soils</u> These soils comprise about 20% of the Eastern Corridor study area, occurring in areas of low topographic relief that are occasionally inundated by floodwaters. They mostly occur along the 100-year floodplains of the Little Miami River, East Fork, Dry Run, McCullough Run and Duck Creek (see below for discussion of floodplains in the area). A total of 15 soil series (mapped as 21 separate units) are included in these floodplain/bottomland soils, consisting of: Bonnell silt loam, Eden silty clay loam, Eldean loam, Genesee loam, Huntington silt loam, Jules silt loam, Lanier sandy loam, Martinsville silt loam, Pate silty clay loam, gravel pits, Stonelick sandy loam, Udorthents, Wakeland silt loam, Wea silt loam and Sees silty clay loam. Most of these soils are rich and well drained, and primarily used for agricultural purposes (sod farms and row crop) in the Mariemont, Newtown and Round Bottom Road areas.
- <u>Hydric Soils</u> Hydric soils are generally poorly drained and may be associated with the occurrence of wetlands. Three soils classified as hydric by the United States Corps of Engineers (USCOE) occur within the Eastern Corridor study area, including Blanchester silt loam, Mahalasville silty clay loam and Clermont silt loam. All three soils occur sporadically in Clermont County in small areas (comprising about 1% of the total Eastern Corridor study limits) along I-275 and SR 32 in the Eastgate area and northwest of the I-275/US 50 interchange in Milford. An additional 19 soils in the area are non-hydric, but are listed by the Hamilton County and Clermont County Natural Resource Conservation Service (NRCS) offices as having hydric inclusions in specific topographic positions, such as depressions, sloughs, oxbows and drainageways. These soils, combined, are estimated to comprise about 75% of the total Eastern Corridor, but only small areas are associated with topographic features (depressions, sloughs, etc.) that would potentially associate them with the occurrence of wetland features.

Landslide Susceptibility

Landslide prone areas in the project vicinity generally correspond to steep relief areas along the Ohio River, the Little Miami River and East Fork, but are most strongly associated with particular bedrock/soil/slope combinations, particularly colluvial soils (along slopes) derived from Kope Formation and lacustrine deposits.

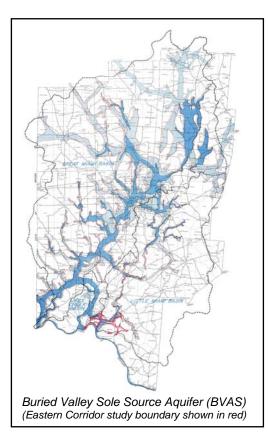
4.1.2. Floodplains

Floodplains in the Eastern Corridor were identified using Federal Emergency Management Agency (FEMA) National Flood Insurance Program mapping (100-year flood) obtained from Hamilton County and Clermont County CAGIS databases.



Designated 100-year floodplain in the Eastern Corridor occurs along the Little Miami River, East Fork, Duck Creek, McCullough Run, Dry Run and the Ohio River, as shown on Figure 4.3. The broadest floodplains in the vicinity occur along the Little Miami River, generally between Beechmont Avenue upstream to Broadwell Road and including the area within the Eastern Corridor study boundaries; typical widths in these areas are around 6,400 feet. Floodplains along the smaller streams in the project vicinity and the Ohio River are generally much narrower.

4.1.3. Groundwater and Aquifers



Groundwater and aquifer information was obtained through review of secondary source materials, website information and GIS mapping obtained from the USEPA (Sole Source Aquifer Program), the OEPA Division of Drinking and Groundwaters, the Ohio Department of Natural Resources (ODNR), the Miami Valley Regional Planning Commission and OKI.

The Eastern Corridor area contains sensitive groundwater resources with highly productive aquifer As best management practices allow, the vields. utmost protection activities will be used for groundwater resources in the project area. Requirements of the Federal Safe Water Drinking Act pertaining to sole source aquifers will continue to be satisfied throughout the project. In Tier 2, a Preliminary Screening Report will be prepared on a project-by-project basis, where warranted, and submitted to the United States Environmental Protection Agency.

Description of existing groundwater resources in the project area is presented below.

Sole Source Aquifer

A portion of the Eastern Corridor study area is located within the boundaries of the Buried Valley Aquifer System (abbreviated BVAS), which was designated by the USEPA Region V in 1988 as a Sole Source Aquifer under Section 1424(e) of the Safe Drinking Water Act. In the project vicinity (see Figure 4.4), this aquifer occurs as a narrow band along the Ohio River (in both Hamilton and Clermont Counties) and along bottomland and floodplain areas associated with Mill Creek, Duck Creek and the Little Miami River in Hamilton County, and the East Fork in Clermont County. Overall, the BVAS covers portions of 14 counties in Ohio, extending from the Ohio River (Hamilton and Clermont Counties) in the southwest part of the state to Logan and Shelby Counties in west central Ohio.



Approximately the western half (Hamilton County portion) of the Eastern Corridor study area occurs within the boundaries of the BVAS (see Figure 4.4), including both Class I and Class II portions of the aquifer. The Class I portion of the BVAS, which consists of high to high-intermediate potential productivity areas (well yields of \geq 100 gpm based on aquifer characteristics and proximity to recharge), occurs in the study area as a narrow band along the Ohio River, along the broad Little Miami River floodplain (including McCullough Run and portion of Dry Run) and along Duck Creek. The Class II portion of the aquifer, which consists of low-intermediate to low potential productivity areas (well yields of 2 to 75 gpm), primarily occurs along the East Fork (outside the project study area) and as a narrow band bordering the Class I aquifer along Duck Creek (in the Red Bank Road vicinity of the project study area).

The BVAS was formed when the meltwaters of successive glacial events left behind heterogeneous deposits of gravel, sand, silt and clay. Principal aquifers of this system are formed by gravel and sand deposits, which range in thickness from one-tenth of a mile to three miles. Primary recharge is through infiltration of precipitation over the aquifer system boundaries, with a minor amount contributed as inflow from upland areas.

Most communities in the Eastern Corridor study area use groundwater from the BVAS as either their sole or partial water supply (see below). The primary alternative public water supply in the area is surface water obtained from Lake Harsha (man-made impoundment in Clermont County) or the Ohio River.

Public Water Supply Wells and Wellhead Protection Areas

Public Water Supplies (PWS's) are facilities registered with OEPA to provide public drinking water from wells, such as local water utility companies, restaurants, churches and stores. Six PWS's on file with the OEPA Division of Drinking and Groundwaters (Community and Non-Community Water Systems; OEPA, May 14, 1998) are located in the general project study area (i.e., within the project study area evaluated for the Eastern Corridor MIS), one of which occurs within the detailed study area being evaluated in this DEIS. These public supply wells are shown on Figure 4.4 and summarized in Table 4.1 below.

	••			
System Name	System Type	Average Production (gpd)	Location Relative to Study Area	
Clermont County Water, PUB	Community	6,900,000	Outside	
Clermont County Water, MGS	Community	950,000	Outside	
City of Milford	Community	693,000	Outside	
City of Cincinnati, BOLT	Community	15,457,000	Outside	
City of Indian Hill	Community	1,770,000	Outside	
Township Fields and Tavern	Non-Community / Transient	500	Inside	

Table 4.1. Public Water Supply Wells in Project Vicinity



Wellhead Protection Areas (WHPA's) are designated protection zones around public wells that are included in the state Wellhead Protection Program established by OEPA in 1992 per 1986 Safe Drinking Water Act Amendments. No designated WHPA's occur within the boundaries of the detailed project study area. One WHPA, the Indian Hill WHPA, occurs in Hamilton County north of Milford (just outside the study area). Other WHPA's occur in Hamilton and Clermont Counties, but well outside the project area, the closest being the Wyoming WHPA (located in Hamilton County about 5 miles northwest of the project study area) and the Loveland WHPA (located at the northeast tip of Hamilton County, about 10 miles north of the project study area).

4.1.4. Little Miami River and Other Surface Streams

Thirty-four stream sites encompassing 22 different USGS features occurring in the Eastern Corridor study area, including the Little Miami River, East Fork and 20 other tributary streams, were surveyed for the Eastern Corridor Tier 1 work (see Figure 4.5 for stream survey locations). Comprehensive survey and documentation of physical stream and riparian corridor conditions was conducted at all 34 sites, and three sites involved biological and water quality sampling. Detailed description of methods used for physical habitat, aquatic biota and water quality surveys is presented in the project Ecological Resources Inventory Report, Eastern Corridor Multi-Modal Projects (Balke American, February 2003) and Addendum to Part A Environmental Studies (Balke American, June 2003). Field surveys were conducted from August-November, 2002 and in April 2003.

Field survey of the Little Miami River and East Fork was conducted for the entire length of these features occurring within the boundaries of the Eastern Corridor study area, and involved comprehensive documentation and assessment of physical stream and riparian conditions within these reaches. Physical surveys included Qualitative Habitat Evaluation Index (QHEI) assessments using OEPA methodology (OEPA, 1989), completion of detailed site sketches and photo documentation at a total of six stream site locations (four sites in the Little Miami River and two in East Fork).

Biological and water quality sampling of these two features was not included in the Tier 1 Ecological Work Plan for the Eastern Corridor due to the abundance of available secondary source information and studies. Detailed physical field surveys combined with review and evaluation of existing information available for these features provides sufficient detail for decision-making regarding multi-modal corridors to be carried through into Tier 2 of the project. More detailed field assessments of the Little Miami and East Fork will be conducted during Tier 2 when specific alignments are developed.

For all non-USGS streams identified from review of Natural Resource Conservation Service GIS mapping and other water resources occurring within the project study area boundaries (ponds, quarries, etc.), a cursory evaluation of conditions and quality was made using aerial photos and a limited field check.

Description of existing streams and other surface waters in the project study area is presented below.



USGS Streams in the Project Detailed Study Area

The Little Miami River originates in Clark County, Ohio and flows generally southwest for 105 miles, discharging into the Ohio River in Cincinnati, Hamilton County; total drainage area is about 1,755 square miles. The East Fork is the largest tributary of the Little Miami River, with a total length of 82 miles and a drainage area of approximately 501 square miles. This stream originates in Highland County, Ohio and flows generally southwest into East Fork Lake, then northwest to its confluence with the Little Miami River in Clermont County, Ohio.

The Little Miami River occurs within the Eastern Corridor detailed study area boundaries from approximately River Mile (RM) 4.6 to 7.0, and from approximately RM 10.4 to 11.5. The East Fork occurs within the detailed study area boundaries from approximately RM 0 to 0.8, and from approximately RM 2.1 to 2.7.

In addition to the Little Miami River and East Fork, 20 other USGS blueline streams occur within the boundaries of the Eastern Corridor detailed study area, including: Duck Creek mainstem, 2 unnamed Duck Creek tributaries, West Fork Duck Creek, East Fork Duck Creek, 2 Little Miami River tributaries (including Clear Creek), Dry Run mainstem, McCollough Run, 4 unnamed East Fork tributaries, Hall Run mainstem, 1 unnamed Hall Run tributary, Salt Run mainstem, 3 unnamed Salt Run tributaries and 1 unnamed Shayler Run tributary. Summary information for these streams is presented in Table 4.2 below.

Numerous other non-USGS streams occur within the boundaries of the Eastern Corridor study area. These features, further described in Chapter 4.1.4, are primarily headwaters, and as determined with agency input during the development of Tier 1 environmental work plans for the Eastern Corridor (see Chapter 1.5.2 and Appendix A), detailed field assessment, including Headwater Habitat Evaluation Index analyses, will be conducted on a project-by-project basis during Tier 2 of the Eastern Corridor study when more alignment specific details and impact information is available.

Detailed Study Area							
Stream Name	Drainage Area (mi ²)	OEPA Life Use Designation ^[1]	QHEI in Study Area ^[2]	Life Use Assignment in Study Area			
Little Miami River	1,755	EWH	63.75, 78.25, 84	WWH, EWH			
East Fork	501	EWH	63, 74.25	WWH			
Duck Creek	15	WWH	63 to 69.5	WWH			
West Fork Duck Creek	0.2	LRW	63.5	WWH			
Duck Creek Tributary #1	1.9		47.5	MWWH			
East Fork Duck Creek	1.8	LRW	52	MWWH			
Duck Creek Tributary #3	0.4		49.5	MWWH			
Little Miami Tributary #1	0.5		67.5	WWH			
Little Miami Tributary #2 (Clear Creek)	0.8		29.25	LRW			
Dry Run	5.6	WWH	48 to 71	MWWH to WWH			

Table 4.2. USGS Streams in the Eastern CorridorDetailed Study Area



Detailed Study Area							
Stream Name	Drainage Area (mi ²)	OEPA Life Use Designation ^[1]	QHEI in Study Area ^[2]	Life Use Assignment in Study Area			
McCollough Run	4.3	WWH	29.5	LRW			
East Fork Tributary #1a,b	1.2		54.5 to 63	MWWH to WWH			
East Fork Tributary #2	0.1		41	MWWH			
East Fork Tributary #3	0.4		49	MWWH			
East Fork Tributary #4	2.5		63	WWH			
Hall Run	5.6	WWH	48.5 to 68	MWWH to WWH			
Hall Run Tributary	0.5		44.5 to 50	MWWH			
Salt Run	6.5	WWH	55.5	MWWH			
Salt Run Tributary #1	0.2		46	MWWH			
Salt Run Tributary #2	0.9		60.5	WWH			
Salt Run Tributary #3	0.1		34.5	MWWH			
Shayler Run Tributary	4.4	WWH	67 to 75	WWH			

Table 4.2. USGS Streams in the Eastern CorridorDetailed Study Area

⁽¹⁾ Source: Ohio Administrative Code Section 3745-1-18 (effective date 7/21/02); life use designations for Dry Run and McCollough Run based on 1978 water quality standards; life use designation code: EWH = Exceptional Warmwater Habitat, WWH = Warmwater Habitat, MWWH = Modified Warmwater Habitat, LRW = Limited Resource Water.

^[2] QHEI scores were only determined for USGS features during Tier 1 field studies conducted for the Eastern Corridor; non-USGS (headwater) streams will be evaluated during Tier 2, including Headwater Habitat Evaluation Index analyses, as determined during the development of Tier 1 work plans.

Little Miami River Designations and Applicability

Key information regarding state and federal designations for the Little Miami River and preliminary applicability to state and federal statutes is presented below.

<u>Little Miami River State and National Designations:</u> The Little Miami River was designated as a State Scenic River (per Section1517.14 to Section 1517.18 of the Ohio Revised Code) on three separate dates, covering its entire 105 mile length: April 23, 1969 - from the Clermont County line at Loveland north to the headwaters in Clark County; on September 19, 1969 - from the Clermont County line at Loveland south to the confluence with the East Fork; and on October 27, 1971 - from the confluence with the East Fork in Clermont County south to the Ohio River in Hamilton County.

In addition, the Little Miami River was designated as a state-administered component of the national wild and scenic rivers system per Section 2(a)(ii) of the Wild and Scenic Rivers Act on two separate dates, including:

• August 1973 – 64 stream miles from Clifton, Ohio near the Clark/Green County line south to Foster in southern Warren County (outside the Eastern Corridor study area); included two scenic



classification segments (18 miles total) and two recreational classification segments (48 miles total), pursuant to Sections 2(b) (2) and (3) of the Act; and

• January 1980 – 28 stream miles from Foster south to the Ohio River (within the Eastern Corridor detailed study area); recreational river classification, pursuant to Section 2(b) (3) of the Act.

The total state-administered component of the national system is 92 miles.

A river plan and specific management objectives for protecting and enhancing the free-flowing character, water quality and designated outstanding remarkable values (ORV's) of the 64-mile segment of the upper Little Miami River designated as a state-administered component of the national system was developed in 1973, and was included in the Department of the Interiors' "Report Recommending the Addition of the Little Miami River, Ohio to the National Wild and Scenic Rivers System" (November 1973). Little Miami River ORV's for this stream segment were determined to include: scenic/aesthetic, recreational, fish and wildlife, geologic, and historic (cultural and archaeological).

In addition, ODNR outlined general provisions for conservation and preservation of the natural environmental qualities of the Little Miami River State Scenic River and adjacent riparian corridor in its Ohio Scenic Rivers Program "Little Miami State Scenic River Management Plan" (June 1985). No management plan or designation of ORV's *specific* to the lower 28-mile segment of the Little Miami River has been available.

It should be noted that the lower 28-mile segment of the Little Miami River was determined ineligible for inclusion into the national system when first studied in 1973. However, following combined efforts put forth by state, local and federal partners, the State of Ohio was able to fulfill the requirements of Section 2(a)(ii) of the National Wild and Scenic Rivers Act by : 1) designating the Little Miami River as a scenic river under provisions of the State Scenic Rivers Act, 2) developing and implementing a management plan for the river, and 3) initiating an acquisition and development program for appropriate lands and waters along the river. The Secretary of the Interior, upon approval of this lower segment of the Little Miami as a state-administered component of the national system, pledged various resources, including financial assistance from the Land and Water Conservation Fund (L&WCF), to aid in the preservation of this lower segment of the river. L&WCF areas along the Little Miami river are described in Chapter 5.4 of this DEIS (none are located within the Easter Corridor feasible alternative corridors).

<u>Agency Coordination Regarding Section 7 Applicability (National Wild and Scenic Rivers Act):</u> Early coordination for the project regarding Section 7 applicability was conducted with representatives from the National Park Service (NPS), the Federal Highway Administration (FHWA; Ohio Division and Washington, D.C), the Department of the Interior (DOI), and the Ohio Department of Transportation, Central Office (ODOT). The outcome of this coordination was summarized in a letter dated March 5, 2003 from ODOT to the Ohio Department of Natural Resources (see Chapter 6.2 and Appendix C).

Overall, it was determined from this coordination that Section 7 would not apply for the mainstem of the Little Miami River if the proposed bridge over the Little Miami was designed so as to not impact the bed or bank below the Ordinary High Water Mark (OHWM). However,



NPS Section 7 Review may be required if the selected alternative includes any instream work on the mainstem or tributaries. For activities on the mainstem of the Little Miami River, the Section 7 review would determine if the proposed action would have a direct and adverse affect the free-flowing condition of this feature, its water quality and/or on the values for which the river was designated, including: scenic/aesthetic, recreational, fish and wildlife, geologic, and cultural historic and archaeological. For developments below or above the Little Miami River or on a tributary, an evaluation would be conducted to determine if the project would invade the area or unreasonably diminish the designated values. Such actions that would require Section 7 review include bank stabilization, the placement of temporary or permanent fills or structures, bank or channel shaping, channel dredging, or any other type of instream activities in the mainstem or a tributary channel.

Four Little Miami River crossing areas, representing the range of possible crossing locations, are currently under consideration in the Eastern Corridor Tier 1 work program, but no site specific impacts or bridge location or design details have been developed at this time; this design work will be conducted in Tier 2. However, it has been determined in Tier 1 that the crossing of the Little Miami River will consist of a shared roadway/transit crossing location configured as a clear span over the river channel, with no instream piers or other permanent instream structures and with no channel work below the OHWM. Possible bridge design types include cable-stayed, extrados, truss, haunched steel girder, or box girders. At this point in project development, it is not expected that construction will involve instream actions, such as placement of a temporary crossing; however, final configuration and required construction-related actions will be determined in Tier 2.

Based on current project development information, it is anticipated at this time that Section 7 would not apply for the mainstem of the Little Miami River. However, as noted above, a Section 7 review may be required if the preferred alternative selected in Tier 2 involves any instream work on a tributary or tributaries to the Little Miami River, or any temporary actions within the mainstem – actions which will be determined during detailed design.

Section 7 applicability, therefore, will be re-evaluated during Tier 2 of the Eastern Corridor study when more site-specific impacts and crossing structure details for the Little Miami River and adjacent tributaries are developed, and agency coordination and review will be conducted, as necessary.

This information regarding Section 7 applicability is also reiterated in Chapter 5.5.

Preliminary evaluation of the expected cumulative impacts of the Eastern Corridor project on the Little Miami River's free-flowing character, water quality and values is presented in Chapter 5.6.



Little Miami River State Park, Scenic Trail and Other Recreational Uses: The Little Miami River State Park and Scenic Trail is a paved trail corridor that follows an abandoned railroad right-of-way along the Little Miami River valley through four counties in southwest Ohio, extending from Milford in Clermont County north for about 50 miles to near Spring Valley in Greene County, Ohio. This park/trail facility, operated by the Ohio Department of Natural Resources, provides biking, cross-country skiing, rollerblading, backpacking and horseback riding opportunities, and canoeing access to the Little Miami River. The Little Miami River Scenic Trail continues north from Spring Valley for about 22 additional miles to Springfield in Clark County. The northern section of the scenic trail from Spring Valley to Springfield is not a state park, but is operated by Green County Parks and Recreation.

The proposed project does not encroach on the current boundaries of the Little Miami River State Park or the Little Miami River Scenic Trail, which begin in Milford about 10 miles north of the proposed project river crossing location. There are local plans, however, by the Hamilton County Park District, Anderson Parks and the City of Cincinnati, to extend the Scenic Trail from Milford south to Avoca Park, through the Hamilton County Park District Golf Center (in Newtown), through Clear Creek Park in Anderson Township, eventually connecting to existing bike trails in the Lunken Airport vicinity. A portion of this trail extension in the Newtown area, along Newtown Road with a new bike trail bridge over the Little Miami River, is currently under construction. These plans, included in the 2001 Version of the 1993 OKI Regional Bike Plan, cross through the Eastern Corridor detailed study area.

Approximately 86 miles of the Little Miami River are canoeable, including the reach within the Eastern Corridor study area. No public river access points occur within the project detailed study area boundaries. The closest public river access is about two miles upstream from the anticipated project crossing area - at Bass Island owned by the Hamilton County Park District. A second public access point occurs about four miles downstream from the anticipated project crossing location at the Magrish Recreation Center along US 52.

No state owned lands designated as part of the Little Miami forest preserve (per Ohio Revised Code [ORC] 1501.19.191), or any lands under an approved land management plan occur along the Little Miami River within the Eastern Corridor detailed study area boundaries.

<u>Preliminary Section 4(f) Applicability:</u> Public-owned waters of rivers designated by the National Wild and Scenic Rivers Act may be subject to involvement under Section 4(f) of the 1966 U.S. Department of Transportation Act, and public-owned lands adjacent to the river may be subject to Section 4(f) if they are administered for recreational or other Section 4(f) purposes.

As noted above, the Little Miami River in the project area is designated as a State Scenic River and as a state-administered component of the national wild and scenic rivers system, with a recreational classification within the Eastern Corridor detailed study area. The river is canoeable within the detailed study area boundaries, however no public-owned lands, river access points, forest preserve areas (per ORC 1501.19.191), or approved land management areas occur immediately adjacent to the Little Miami River in the anticipated project crossing area.



Several public parks do occur along the floodplain in the proposed crossing vicinity, although not immediately adjacent to the river, and public parks occur along the river upstream and downstream of the project crossing area, outside the study area.

In addition, a National Register District - the Hahn Archaeological District - occurs immediately adjacent to the Little Miami River within the detailed study area boundaries. One privately-owned greenspace, the Horseshoe Bend Nature Preserve, also occurs within the detailed study area boundaries in the vicinity of the anticipated project crossing location.

As noted above, four Little Miami River crossing areas, representing the range of possible crossing locations for the project, are currently under consideration in Tier 1, but no site specific impacts or bridge location or design details have been developed at this time. However, it has been determined in Tier 1 that the crossing of the Little Miami River would consist of a shared roadway/transit clear span crossing, with no instream piers or other permanent instream structures, with no channel work below the OHWM. At this point in project development, it is not expected that construction will involve instream actions, such as placement of a temporary crossing; however, final configuration and required construction-related actions will be determined in Tier 2.

Based on the above, Section 4(f) may apply to the Little Miami River in the project vicinity. Section 4(f) applicability will be further evaluated during Tier 2 of the Eastern Corridor project when more site-specific impacts and crossing structure details are developed, including need for a temporary crossing structure, and agency coordination and review will be conducted, as necessary.

<u>Waters of the United States:</u> The Little Miami River, as a water of the United States, may require coordination with the USCOE pursuant to Section 404 (placement of dredge and fill materials) and with the OEPA pursuant to Section 401 (water quality certification) of the 1972 Federal Clean Water Act.

Based on coordination with the U.S. Coast Guard, it has been determined that a Section 9 bridge permit pursuant to the Rivers and Harbor Act will not be required given a clear span crossing of the river within the project detailed study area (see Appendix C for coordination letter).

<u>Summary of Designations and Applicability:</u> Based on the above, the Eastern Corridor project involvement with the Little Miami River may require agency coordination in accordance with one or more of the following: Section 404 and Section 401 of the 1972 Federal Clean Water Act (as amended in 1977), Section 7 of the National Wild and Scenic Rivers Act, Section 1517.16 of the Ohio Revised Code (ODNR scenic rivers approval), and/or Section 4(f) of the 1966 U.S. Department of Transportation Act.

Other Secondary Source Stream Information

A detailed summary of OEPA use designations and attainment information for streams in the Eastern Corridor study area, and a summary of OEPA biological and physical stream data for



the Little Miami River and East Fork at sample locations in the project vicinity is included in the Ecological Resources Inventory Report, Eastern Corridor Multi-Modal Projects (Balke American, February 2003). Key information is summarized below:

<u>OEPA Use Designations</u>: Both the Little Miami and East Fork are designated by OEPA for most of their lengths as Exceptional Warmwater Habitats (EWH) (per Ohio Administrative Code [OAC] 3745-1-18; effective July 21, 2002). An EWH designation is typically assigned due to the occurrence of unusual or exceptional assemblages of aquatic organisms characterized by a high species diversity, particularly those which are highly intolerant and/or rare, threatened, endangered or have special status.

In addition to the EWH designation, both the Little Miami and East Fork are designated by the OEPA as State Resource Waters (SRW), Primary Contact Recreation (PCR) waters, Agricultural Water Supplies (AWS) and Industrial Water Supplies (IWS), and the East Fork is additionally designated as a Public Water Supply (PWS) (per OAC 3745-1-18; effective July 21, 2002).

In addition to the Little Miami River and East Fork (described above), eight other streams in the Eastern Corridor detailed study area are assigned aquatic life use designations by the OEPA (per OAC 3745-1-18; effective July 21, 2002). Six of these are Warmwater Habitat (WWH) features, including McCullough Run, Duck Creek, Dry Run, Hall Run, Salt Run, and an unnamed Shayler Run tributary, and two are designated Limited Resource Waters (LRW), including East Fork Duck Creek and West Fork Duck Creek. In general, WWH is defined as the typical warmwater assemblage for Ohio rivers and streams and represents the principal restoration target for the majority of water resource management efforts in Ohio. LRW applies to small streams (usually < 3 square mile drainage area) and other water courses irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported, such as small streams in extensively urbanized areas or those which lack water on a recurring annual basis (true ephemeral streams).

All eight USGS streams in the Eastern Corridor detailed study area are also designated as Agricultural Water Supplies (AWS) and Industrial Water Supplies (IWS). Dry Run, Hall Run, Salt Run, Shayler Run tributary, McCollough Run and a portion of Duck Creek (from its mouth to Red Bank Road) are additionally designated as Primary Contact Recreation (PCR) waters. East Fork Duck Creek, West Fork Duck Creek and Duck Creek mainstem upstream of Red Bank Road are designated as Secondary Contact Recreation (SCR) waters. (Note: all designations listed in this paragraph are per OAC 3745-1-18; effective July 21, 2002).

<u>Aquatic Life Use Attainment and Stream Impairment:</u> Information from Ohio Resource Inventory 305(b) Reports (OEPA, 2000 and 2002) indicate that the quality of both the Little Miami River and East Fork are being impaired by a number of different causes and associated sources. The Little Miami in the Eastern Corridor vicinity (i.e., an 11.5-mile segment extending from the Ohio River to East Fork) is reported as being impaired from organic enrichment, nutrients and unknown causes due to combined sewer overflows, urban runoff and municipal point sources, and most of the length of the Little Miami in this reach (7.2 miles out of a total 11.5 miles) is reported as being in partial aquatic life use attainment (OEPA 2000 305(b) Report). The East Fork in the project vicinity (i.e., an 8.8-mile segment extending from the Little Miami to Stonelick Creek) is reported as being impaired from nutrients due to municipal



point sources, non-irrigated crop production and urban runoff, and most of the length of the East Fork in this reach (6.9 miles out of a total 8.8 miles) is reported as being in partial aquatic life use attainment (OEPA 2000 305(b) Report).

Because of these disturbances, both the Little Miami River from the Ohio River to Caesar Creek and East Fork from the Little Miami to Stonelick Creek are included in the 2002 303(d) List of Prioritized Impaired Waters (OEPA 2002, Table 6, Category 5 impairment).

Information from Ohio Resource Inventory 305(b) Reports (OEPA, 2000 and 2002) regarding impairment and aquatic life use attainment for the other 19 USGS streams in the study area is summarized in the Ecological Resources Inventory Report, Eastern Corridor Multi-Modal Projects (Balke American, February 2003). Typical causes of impairment for streams in the area include organic enrichment, habitat alterations, flow alterations, siltation and increased nutrients. Typical impairment sources reported by the OEPA include municipal and industrial point sources, combined sewer overflows, urban runoff, channelization, dredging, streambank modifications, storm sewer runoff, sanitary sewer overflow, and spills (OEPA 2000 305(b) Report). As a result of these disturbances, all of the USGS streams in the project area are reported as being in *partial* aquatic life use attainment for at least part of their lengths (OEPA 1996 and 2000 305(b) Reports).

Previous OEPA Biological and Water Quality Studies in the Little Miami River and East Fork: The Ohio Environmental Protection Agency, Division of Surface Water conducted biological and water quality studies of the Little Miami River and selected tributaries, and presented results in OEPA reports dated 1995 and 2000. The 1995 OEPA study included 87 total sample locations in the Little Miami drainage, 36 of which occurred in the Little Miami mainstem, 22 in the East Fork and 29 in other tributary features. The 2000 OEPA study included 190 total sample locations, 71 of which occurred in the Little Miami mainstem and none in the East Fork (the East Fork was not included in this 2000 report).

Of these previous OEPA stream sample locations, those occurring in the vicinity of the Eastern Corridor study area included 12 sites in the Little Miami River mainstem from the Ohio River north to Milford, and 8 sites in the East Fork from its confluence with the Little Miami east to the US 50/I-275 interchange area. Data collected by OEPA at these locations included a variety of quantitative fish and benthic data (for Index of Biotic Integrity [IBI] and Invertebrate Community Index [ICI] analyses), water quality data and qualitative physical stream habitat (QHEI) information.

More detailed OEPA biological and physical (QHEI) stream data and analyses conducted for the Little Miami River and East Fork at sample locations in the Eastern Corridor project vicinity is summarized in the Ecological Resources Inventory Report, Eastern Corridor Multi-Modal Projects (Balke American, February 2003).

<u>Mussel Surveys in the Little Miami River and East Fork:</u> A mussel survey of the Little Miami River conducted by Hoggarth in 1992 reported a total of 36 species of Unionidae, including 21 species collected from Hamilton and Clermont Counties. Species collected from the Little Miami in Hamilton and Clermont Counties included two state endangered mussels (*Quadrula nodulata* and *Epioblasma triquetra*), two state threatened mussels (*Obliquaria reflexa* and



Truncilla donaciformis) and two state special concern species (*Anodonta suborbiculata* and *Truncilla truncate*). A mussel survey in the Little Miami River at the Newtown Road bridge conducted by Hoggarth in 1998 yielded a total of 14 species from this location (approximately RM 8.2), including dead specimens of the state threatened *Truncilla donaciformis* and the state special concern *Truncilla truncata* (Hoggarth, 1998). No live specimens of any federal or state listed species were found during the 1998 study.

A mussel survey of the East Fork at the I-275 bridge conducted by Hoggarth in 2001 reported a total of 16 species, including 2 state threatened mussels (*Truncilla donaciformis* and *Obliquaria reflexa*) and 1 state special concern species (*Truncilla truncata*). Overall, a total of six state listed species (two state endangered, two state threatened and two state special concern) are known from the East Fork based on historic and current records. In addition, a federal candidate species, *Villosa fabalis*, is reported from the East Fork by ODNR.

<u>Threatened and Endangered Species</u>: The Ohio Department of Natural Resources, Division of Natural Areas and Preserves (Natural Heritage Database) reports known occurrences of 16 state listed species from the Little Miami River in the Eastern Corridor vicinity (generally from Beechmont Avenue to Milford), including 6 fishes, 7 mussels, 2 reptiles and 1 plant. No federal threatened or endangered species are reported from the Little Miami River within the project detailed study area. Two federal candidate mussels are reported by ODNR as occurring in the general project area, including *Villosa fabalis* (from the East Fork Little Miami River) and *Plethobasus cyphyus* (from the Ohio River). Threatened and endangered species in the Eastern Corridor are further discussed in Chapter 4.1.7.

Little Miami River Historical Meanders in Project Vicinity: A series of nine glacial events, consisting of the deposition and subsequent scouring and removal of base materials, have influenced the shape of the Little Miami River valley. Throughout these cycles of deposition and removal, the Little Miami River channel has meandered within changing valley courses. Documentation of these meanders, summarized by Nutting (2002) and Gray and Pape (2002), dates back nearly 150 years to 1869. Since that time, the portion of the Little Miami River in the Eastern Corridor area has meandered several thousand feet back and forth through its river valley. This stream reach is referred to locally as the Horseshoe Bend due to its characteristic horseshoe-shaped meander in this vicinity. Even within the last 50 years, the Little Miami has shown significant movement (1,000+ feet) in the Horseshoe Bend area when compared to its present-day location.

Field Conditions for Streams in the Project Study Area

Little Miami River in Horseshoe Bend Area: The Little Miami River in the vicinity of the Horseshoe Bend (approximately RM 5.4 to 5.8) has a channel width of about 100-120 feet (upstream end of Horseshoe Bend) to about 140-160 feet (downstream end), with a cobble/gravel bottom and a water surface comprised of mostly glide (80%) with scattered pool/riffle/run. Typical water depth (glide/run) is greater than 3 feet and scattered pools exhibit depths of greater than 6 feet. Instream cover is diverse, but sparse to moderate in occurrence. A number of gravel/sand bars, mudflats and vegetated shallows occur in this reach of the Little Miami along the upstream end of the Horseshoe Bend, as well as an instream island (Goose



Island). A Hamilton County Metropolitan Sewer District (MSD) Combined Sewer Overflow (CSO Number 656) is located along the west bank, also at the upstream end of the Horseshoe Bend.

Wooded riparian habitat along the Little Miami River along the downstream section of the

Horseshoe Bend on the west bank (facing downstream) is narrow and incomplete, and disturbed by adjacent agricultural and landfill activities and a major transmission line crossing; along the east bank, this downstream section of the Horseshoe Bend is bordered by broad wooded floodplain habitat that is bisected by the transmission line crossing. The upstream section of the Horseshoe Bend area has a mostly complete wooded riparian corridor on both banks, with minor disruptions from a smaller power line crossing and a railroad bridge within this stream reach. The wooded riparian corridor at this location is



moderately wide to wide on the north bank (bordered by a wooded island/wetland), and narrow along the south bank (bordered by a sod farm). Overall, both riverbanks along the Little Miami River in the Horseshoe Bend area are high and steep.

Calculated QHEI scores for the Little Miami River in the Horseshoe Bend area were 63.75



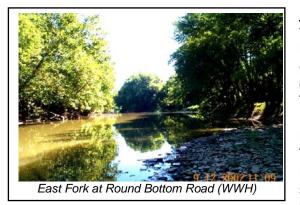
(downstream segment), 78.25 (middle segment) and 82 (upstream segment). The downstream segment meets criteria for Warmwater Habitat (WWH) and the middle and upstream segments meet criteria for Exceptional Warmwater Habitat (EWWH). The higher score for the upstream section of the Horseshoe Bend area was primarily due to greater available instream cover within this reach. The lower QHEI score at the downstream end of the Horseshoe Bend was primarily attributable to lesser quality riparian conditions at this location and gradient.

Little Miami River at Round Bottom Road: The Little Miami River in the detailed study area along Round Bottom Road has a channel width of approximately 120 feet, with a cobble/sand bottom and good riffle/pool development. Water depth is variable, consisting of 15 inch to > 36 inch deep glide (deepest glide areas occurring at the confluence of East Fork with the Little Miami within this sample reach), 4-12 inch deep riffle areas and scattered pools greater than 3 feet deep. This portion of the Little Miami contains moderate instream cover (25 to 75%), two instream islands, mudflat areas and vegetated shallows. The wooded riparian corridor is moderately wide to wide and bordered to the north by woodland and residential areas and to the south by Round Bottom Road.

The calculated QHEI score for the Little Miami River along Round Bottom Road was 84, meeting Exceptional Warmwater Habitat criteria. This slightly higher score compared to the



Horseshoe Bend area was primarily due to the better riffle/pool development exhibited at this location.



East Fork at Round Bottom Road: The East Fork in the detailed study area along Round Bottom Road has a channel width of approximately 70 feet, with a gravel/sand bottom and a water surface comprised of predominantly glide (90%) with scattered pools. Typical water depth is greater than 3 feet (glide). Instream cover is sparse (5 to 25%), and siltation is heavy and the extent of embeddedness moderate. The wooded riparian corridor in this vicinity is narrow to very narrow to moderately wide, and scrubby and continuous on both banks. It is bordered on the south by residential areas along

Round Bottom Road and to the north by a golf course. In general, riverbanks at this location are high and steep. The calculated QHEI score for the East Fork along Round Bottom Road was 63. Although the East Fork has an official OEPA Exceptional Warmwater Habitat designation, this QHEI score indicates that only Warmwater Habitat conditions are exhibited at this sample location.

<u>East Fork at I-275:</u> The East Fork in the detailed study area in the vicinity of I-275 has a channel width of approximately 75 feet, with a cobble/sand bottom and a water surface comprised of mostly glide (70%) with fair riffle/pool development. Typical water depth is around 16 inches, with small riffles about 12 inches in depth and scattered pool greater than 3 feet deep. Instream cover is moderate at this location. The wooded riparian corridor in this area is narrow to moderately wide, and mostly scrubby and continuous on both banks. Commercial areas to the north and commercial area/constructed wetland to the south border it. Riverbanks at this location are, in general, not as high or steep as those along Round Bottom Road. The calculated QHEI score for the East Fork in the vicinity of I-275 was 74.25. This higher score compared to the Round Bottom Road reach is primarily due to better instream cover conditions observed at the I-275 sample location; however, similar to the Round Bottom Road location, only Warmwater Habitat conditions are exhibited by the East Fork within the project study area.

Other USGS Streams: In addition to the Little Miami River and East Fork, 20 other USGS streams were evaluated at 28 survey sites within the detailed study area. Overall, these features met criteria for one of the following aquatic life use designations (see Table 4-2 above): Limited Resource Water (two features). Modified Warmwater Habitat (nine features), Warmwater Habitat (six features), or a mix of Modified Warmwater and Warmwater Habitat, depending on the sample location (three features). Physical



habitat descriptions and results of biological and water quality surveys (Dry Run only) are presented in detail in the project Ecological Resources Inventory Report (Balke American,

February 2003) and the Addendum to Part A Environmental Studies (Balke American, June 2003).

In general, Limited Resource Waters (LRW) are exhibited by temporary flow, small drainage area (<3 square miles), artificially maintained channel and riparian corridor, very shallow channel, silt/muck/sand substrates, little instream cover, poorly defined habitat, and/or a QHEI score of <30. McCollough Run and Little Miami Tributary #2 (Clear Creek) were the only sampled features in the project study area meeting Limited Resource Water conditions.

Modified Warmwater Habitat (MWWH) streams

typically exhibit modified habitats, artificially maintained channel or riparian corridor that is not likely to recover, shallow channel, silt/muck/sand substrates, little instream cover, poorly defined habitat, poor to fair riffle pool development, high substrate embeddedness, an IBI score of 20-28 and/or a QHEI score of <45. Overall, nine streams in the project study area exhibited Modified Warmwater Habitat conditions, including Duck Creek Tributaries #1 and #3, East Fork Duck Creek, East Fork Tributaries #2 and #3, Hall Run Tributary, Salt Run, and Salt Run Tributaries #1 and #3.

Warmwater Habitat (WWH) streams typically exhibit the following habitat characteristics: natural or recovering habitats, well defined habitats, shallow areas and deep pools, gravel, cobble or boulder dood cover. good riffle/pool substrates. development and low to normal substrate embeddedness, and/or QHEI scores between 60 and 75. Overall, six streams in the project study area exhibited Warmwater Habitat conditions (besides East Fork; see above), including Duck Creek, West Fork Duck Creek, Little Miami River Tributary #1, East Fork Tributary #4, Salt Run Tributary #2, and Shayler Run Tributary.

Three streams exhibited Modified Warmwater or Warmwater Habitat conditions, depending on survey location within the project study area, including Dry Run, East Fork Tributary #1 and Hall Run.

Headwater Streams and Other Water Bodies

Approximately 330 other non-USGS streams occur within the boundaries of the Eastern Corridor detailed study area. These features are Natural Resource Conservation Service mapped streams (potential Ordinary High Water [OHW] features), primarily headwaters, and include the following: 6 features in the Ohio River drainage, 52 features in the Duck Creek









drainage, 71 features in the Little Miami River drainage, 13 features in the McCollough Run drainage, 54 features in the Dry Run drainage, 21 features in the East Fork drainage, 43 features in the Hall Run drainage, 41 features in the Salt Run drainage, 8 features in the Shayler Run drainage, 1 feature in the Eight Mile Creek drainage, and 20 features associated with ponds, quarries or lakes in the area. Detailed field assessment of these features, including Headwater Habitat Evaluation Index analyses, will be conducted on a project-by-project basis during Tier 2 of the Eastern Corridor study when more alignment specific details and impact information are available.

Fourteen ponds (not including those identified as wetland features; see Chapter 4.1.5) were identified in the detailed study area. About half of these are man-made excavated quarry or golf course ponds in the Newtown area (Hamilton County), and the remainder are either excavated or impounded drainageways or depressions in Clermont County.

The quarry ponds are the largest of these features and are either still actively used for quarrying, used for recreational purposes or are of a highly disturbed nature. One of the quarry ponds, located off Edwards Road in the Newtown area, is operated as a paid recreational use facility for boating and water skiing training activities. Some of the smaller ponds in Clermont County are bordered by woodlands and are considered somewhat valuable because they could provide water and additional habitat for woodland fauna. However, due to small size, a lack of vegetation and a lack of quality aquatic habitat (generally shallow, muddy, and devoid of physical structure) these ponds possess limited biological value.

4.1.5. Wetlands

All National Wetland Inventory (NWI) mapped wetland and suspect sites identified from aerial photos and other secondary sources within the boundaries of the project study area were field checked for wetland conditions. Each feature was assessed using a point-in wetland determination following United States Corps of Engineers (USCOE) 1987 methodology. Each wetland feature was also assessed using OEPA Ohio Rapid Assessment Method (ORAM) version 5.0. Representative photographs were taken and each wetland was preliminarily mapped on aerial photo based GIS maps. All wetland features were classified according to Cowardin et al. (1979). Detailed wetland delineation work will be conducted on a project-by-project basis during Tier 2 of the Eastern Corridor study.

Summary of Secondary Source Information for Wetlands

Review of United States Department of the Interior National Wetland Inventory (NWI) maps indicated that a total of 28 NWI features occur within the Eastern Corridor detailed study area boundaries. Most of these NWI wetlands are forested or open (emergent) features in the 100-year floodplain/riparian corridors of the Little Miami and East Fork Rivers, the greatest concentration of which occur in the Round Bottom Road, Newtown and Mariemont areas. Of the 28 NWI features occurring within the study area boundaries, only 13 were determined to meet USCOE wetland criteria based on field studies conducted for this ecological inventory; these 13 features include Wetlands 1, 2, 9, 10, 11, 13, 18, 19, 20, 23, 24, 57 and 58 (see below for further descriptions).



Wetland Determinations and Wetland Categories

Based on wetland surveys conducted for this project according to methods described above, a total of 56 features were identified within the detailed study area boundaries that met wetland criteria as specified in the Corps of Engineers Wetlands Delineation Manual (1987); locations of these features are shown on Figure 4.5. State wetland antidegradation regulations (OAC 3745-1-54; effective May 1, 1998) require that all wetlands under review be placed into one of three categories based on biological and functional value as determined by an appropriate wetland evaluation method such as an ORAM score, where, in general, Category 1 wetlands are limited quality features and Category 3 wetlands are high quality. Based on the results of ORAM v.5.0 analyses, a breakdown of the 56 wetlands identified in the detailed study area by category is presented in Table 4.3 below. Wetlands identified in the table as falling within a "gray" zone between categories based on ORAM score will be further assessed during Tier 2 for placement into a specific category. Wetland descriptions, wetland determination forms, ORAM forms and representative wetland photographs are included in the project Ecological Resources Inventory Report (Balke American, February 2003).

ORAM v.5.0	Category ^[1]	Wetland(s)	Total Number of Features
Limited Quality: Category 1	1	22	
Madarata Quality	1 or 2	Wetlands 8e, 18, 23, 37, 43, 46, 51, 52, 54, 56	10
Moderate Quality: Category 1 or 2, Modified 2 and Category 2	Mod. 2	Wetlands 5, 6, 12, 16, 28, 30, 32, 44, 45, 53	10
	2	Wetlands 1, 2, 9, 15, 24, 29, 33, 36, 48, 50, 57	11
High Quality: Category 2 or 3	2 or 3	Wetland 58	1
and Category 3	3	Wetlands 20 and 27	2
		Total Number of Wetlands	56

Table 4.3. Wetlands Identified in the Eastern CorridorDetailed Study Area

^[1] Wetlands identified as falling within a "gray" zone between categories (Category 1 or 2; Category 2 or 3) will be further assessed during Tier 2 for placement into a specific category.

Overall, limited quality (Category 1) features in the study area are typically small emergent wetlands associated with man-made structures or small drainage features along the Little Miami River floodplain. The moderate quality wetlands (Category 1 or 2, Modified 2 and Category 2) are mostly forested features or forested, emergent, open water and/or scrub-shrub combinations, natural or man-made, scattered throughout the study area in both bottomland and upland positions. The three high quality wetlands (Category 2 or 3 and Category 3) are natural features associated with the Little Miami River corridor, and two of these features contain what has been preliminarily identified as the State Threatened Carolina willow (*Salix caroliniana*).



Limited Quality Wetlands: These wetlands typically minimal wildlife minimal support habitat. hydrological and recreational functions, do not provide critical habitat for or contain rare. threatened or endangered species and have limited potential to achieve beneficial wetland functions; ORAM scores typically range from 0 to 29.9 (OEPA, February 2001). Of the 22 Category 1 wetlands identified for this study (see Table 4.3 above), 11 are man-made or have developed out of man-influenced activities. including ditch. quarry/borrow pit or detention basin wetlands. The



remaining 11 features are natural wetlands occurring in old sloughs or drainage swales along the Little Miami River floodplain. Four of the Category 1 wetlands (Wetlands 10, 11, 13 and 19) are NWI or NWI remnant features. All but one of the Category 1 wetlands in the area are less than 1 acre in size and most are less than 0.5 acre. In general, Category 1 wetlands identified in the study area have low species diversity, limited community structure and little to no buffer or buffering capacity. These features are typically dominated by lizard tail, smartweed, cattail, mixed sedges, willows and/or red maple.

<u>Moderate Quality Wetlands:</u> Moderate quality wetlands include features falling into the Category 1 or Category 2 range, Modified Category 2 features and Category 2 wetlands. Category 1 or 2 wetlands, in general, are intermediate wetlands, possessing some of the qualities of both Category 1 and 2 feature, and with ORAM score ranging from 30 to 34.9 per

OEPA guidelines (OEPA, February 2001). Modified Category 2 wetlands are Category 2 features with some degree of disturbance or degradation, but that exhibit reasonable potential for restoration of lost functions; ORAM scores are at the lower end of the range for Category 2 wetlands (35 to 44.9 per OEPA, **OEPA** auidelines: Februarv 2001). Wetlands considered to be a solid Category 2 typically support moderate wildlife habitat or moderate hydrological or recreational functions and, in general, are dominated by native species, but generally without the presence of, or habitat for,



rare, threatened or endangered species; ORAM scores range from 45 to 59.9 per OEPA guidelines (OEPA, February 2001).

The Category 1 or 2 wetlands in the detailed study area (10 total) occur as palustrine emergent features (predominantly) or a combination of emergent, open water, scrub-shrub or aquatic bed classes; one feature is forested. Three of these features, Wetlands 8e, 18 and 23 are natural wetlands (Little Miami River slough or depressional areas), two of which are NWI mapped features (Wetlands 18 and 23). The remaining Category 1 or 2 wetlands either developed in man-made structures (quarry pit, retention basin) or in low/depressional areas disturbed by commercial land use or roadways (e.g., wetlands in the Eastgate area); one



feature, Wetland 56, is a constructed mitigation wetland. All but one of the Category 1 or 2 wetlands are less than 1.5 acres in size and most less than 1 acre; the largest feature (Wetland 23) is a 7-acre wetland on commercial property (topsoil mine). Overall, these Category 1 or 2 wetlands have greater species and wetland class diversity than typical Category 1 wetlands, but lack the buffer and/or diverse habitat structure exhibited by typical Category 2 wetlands.

Modified Category 2 features in the detailed study area (10 total) occur as palustrine emergent, forested or scrub-shrub wetlands or as two-class combinations (emergent with open water, forested scrub-shrub or aquatic bed). Four of these features (Wetlands 12, 28, 30 and 32) are natural wetlands occurring along the Little Miami River floodplain, two are associated with stream channels (Wetlands 5 and 53), three with man-made ponds or quarries (Wetlands 6, 44 and 45), and one Modified 2 feature (Wetland 16) is a constructed mitigation wetland. Most of the Modified 2 features are less than 1 acre in size; the largest feature is a 9-acre constructed wetland near the I-275/US 50 interchange (Wetland 16). In general, the Modified 2 features have wider buffers and more buffering capacity, and tend to have connections to larger woodlands or riparian corridors than do Category 1 or 2 features.

The Category 2 wetlands in the detailed study area (11 total) occur as palustrine forested or emergent wetlands, or as two-class combinations (emergent with open water, aquatic bed, forested or scrub-shrub). Most of these features (eight total) are natural wetlands associated with the Little Miami River (floodplain or island wetlands), two are associated with man-made ponds or quarries (Wetlands 24 and 48) and one Category 2 feature (Wetland 15) is a constructed mitigation wetland. Five features (Wetlands 1, 2, 9, 24 and 57) are NWI mapped wetlands. Six of the 11 Category 2 wetlands are greater than 1 acre in size, ranging from 1.15 acres to 7.17 acres. Overall, Category 2 features have moderate to good species diversity and community structure (more diverse vegetation layers than Category 1, 1 or 2 or Modified 2 wetlands), good habitat (logs, snags, pools, deep water) and moderate to good buffers.

<u>High Quality Wetlands:</u> High quality wetlands identified in the detailed study area include transitional features between a Category 2 and Category 3 (one wetland) and Category 3 features (2 wetlands). These high quality wetlands, in general, support superior habitat or hydrological or recreational functions. They typically have high levels of biodiversity and structure (two or more vegetation classes represented), a high proportion of native species, provide habitat for threatened or endangered species, and exhibit potential to



perform high wetland functions. ORAM scores for Category 2 or 3 wetlands, by OEPA guidelines, range from 60 to 64.9 and Category 3 wetlands range from 65 to 100 (OEPA, February 2001).

Wetland 58 (Category 2 or 3) occurs in an old Little Miami River slough, west of Horseshoe Bend adjacent to a construction and demolition landfill site. This feature, an NWI mapped wetland, is an emergent/forested/scrub-shrub combination wetland dominated by a



groundcover of smartweed, a willow shrub layer and a silver maple canopy. Structurally, Wetland 58 is characterized by: good habitat development (minimal disturbance/alteration), hydrological and wooded riparian connectivity to the Little Miami River, occurrence in a floodplain, good habitat structure (woody debris, dead snags, vegetated hummucks) and wetland class diversity. This feature did not classify as a solid Category 3 feature by ORAM score primarily due to a poor (narrow) buffer and disturbed surrounding land use (landfill). This feature, in fact, is bordered on the west side by an area currently under landfill development, with excavation and grading occurring up to the wetland boundaries.

Wetlands 20 and 27 (Category 3 features) are located along the Little Miami River just downstream of the East Fork confluence. Wetland 20 is a small feature on an island in the middle of the Little Miami River and Wetland 27 occurs as a floodplain shelf between the Little Miami River and the Round Bottom Road embankment. Both are palustrine scrub-shrub features. Wetland 20 is vegetated almost entirely by carolina willow (*Salix caroliniana*), a State threatened species (voucher specimens collected) and Wetland 27 is dominated by a mix of hydrophytic groundcover (mostly waterwillow) and a carolina willow/crack willow canopy. Both Wetlands 20 and 27 exhibit high quality structural and hydrological conditions, including: fair to good habitat development (minimal disturbance/alteration), hydrological and wooded riparian connectivity to the Little Miami River, occurrence in a floodplain, good habitat structure (logs/debris, dead snags, hummucks, pools), good buffer (surrounded by secondary/mature growth riparian woodland) and diverse wetland classes.

4.1.6. Terrestrial Habitats and Wildlife

Qualitative walkover field surveys of quality woodlands identified from secondary sources and presented in the Eastern Corridor Land Use Vision Plan (Northern Kentucky University, September 2001 for: Meisner and Associates, May 2002) and other large woodland tracts occurring within the study area were conducted to note such items as composition, structure, dominant species, tree size, understory development and disturbance. These woodlands were also concurrently investigated for the presence of other important ecological features such as streams and wetlands. Evaluation of fauna within the study area consisted of the overturning of rocks, logs, and debris in order to assess small mammal, reptile, and amphibian populations. Animal signs (tracks, scats, road kills, calls) and direct field observations were also documented. Woodland field data forms and descriptions of terrestrial habitats and faunal components are presented in the project Ecological Resources Inventory Report (Balke American, February 2003).

Original Vegetation

Natural vegetation in the project vicinity included four original forest types: mixed mesophytic forests, beech forests, bottomland hardwood forests and elm-ash swamp forests (based on mapping included in: The Natural Vegetation of Ohio in Pioneer Days; Gordon, 1969). Mixed mesophytic forests were composed of mixed oaks, Kentucky coffee-tree, white ash, hickory and sugar maple and primarily occurred in Hamilton County and in portions of Clermont County along East Fork and the Ohio River, comprising about 40% of the detailed study area. Beech forests occurred in Clermont County (in about 40% of the detailed study area) and were dominated by American beech combined with a mix of sugar maple, tulip tree, wild black



cherry, rock elm, big shellbark hickory, mulberry, and basswood. Bottomland hardwood forests were composed of variable canopies depending on location, such as: beech-elm-ashyellow buckeye, beech-white oak, beech-maple, elm-sycamore-river birch-red maple, and sweet gum-river birch; they primarily occurred along the Little Miami River and the Ohio River in Hamilton County, and the lower portion of East Fork in Clermont County and comprised about 15% of the detailed study area. Elm-ash swamp forests were only widely scattered in the project study area in flat, poorly drained till plains, particularly in Clermont County; black ash, American elm, red maple, pin oak, swamp white oak and sour gum were most abundant, with sycamore and/or cottonwood occurring in areas that were extremely wet.

Current Conditions

Most of the Eastern Corridor consists of residential, commercial and industrial development, with some agricultural land along the Little Miami River floodplain, semi-natural habitats (e.g. woodlands and wetlands) along the Little Miami and East Fork riparian corridors, and scattered woodlands. Descriptions of these areas, derived from a combination of limited field survey (for woodlands) and aerial photograph examination (for the remainder of the categories) is presented below. Agricultural areas are described in Chapter 4.1.8.

<u>Developed/Disturbed Areas</u>: This is a predominant habitat type in the Eastern Corridor and consists of residences, commercial and industrial facilities characterized by highly disturbed features such as paved or gravel drives and parking lots, maintained yards, gravel quarries and large and small buildings. Dense concentrations of residential and commercial development are located along: 1) Columbia Parkway, Dana Avenue, Wasson Avenue and Red Bank Road, 2) in the communities of Mariemont, Fairfax and Newtown, and 3) along SR 32 and I-275 in Clermont County in the Eastgate vicinity.

Heavy industrial development is concentrated within the detailed study area along Columbia Parkway in the vicinity of Lunken Field, along Wooster Pike and Red Bank Road in the City of Fairfax, along Duck Creek Road, along SR 32 through the Village of Newtown, along Round Bottom Road, and along Broadwell Road in the Ancor industrial development area.

<u>Woodlands:</u> Twelve woodlands were evaluated in the detailed study area, including five quality woods identified from secondary sources (Northern Kentucky University, September 2001 for Meisner and Associates, May 2002) and seven other large woodland tracts occurring within the detailed study area boundaries considered representative of the woodland communities occurring in the Eastern Corridor area, as noted from aerial photograph and other project mapping. These features (Woodlands A through L) are shown on Figure 4.5 and detailed descriptions are presented in the project Ecological Resources Inventory Report (Balke American, February 2003).

In general, 11 of the 12 woodlands occur on steep ravines and hillsides (Woodlands A, B, C, E, F and G) or in the floodplain of the Little Miami River (Woodlands H, I, J, K and L). Woodland D, the smallest at eight acres, occurs on a nearly level upland behind a commercial area in the Eastgate vicinity. Five of the woodlands occur in public-owned parks or greenspaces, including Woodland B (Dogwood Trail Park), Woodland E (Ault Park), Woodland F (Anderson Township Greenspaces), Woodland J (Clear Creek Park) and a portion of



Woodland A (Broadwell Road Nature Preserve). A portion of one site, Woodland H is a privately owned nature preserve (Horseshoe Bend; see Chapter 4.1.9).

Of the 12 woodlands surveyed within the Eastern Corridor, Woodland E (Ault Park) is considered the best in overall quality due to its steep topography, diverse structure and available habitat, mature tree canopy, large size and limited disturbances. Four sites, including Woodland A (Broadwell Road Site), Woodland C (Red Bank Woods), Woodland H (Horseshoe Bend), and Woodland I (Goose Island) are considered intermediate quality (of the 12 sites surveyed) in that they have good habitat structure and a mature canopy (at least in part), but generally exhibit greater edge disturbances and/or scattered patches of disturbed/scrubby areas. The remaining woodlands (Woodlands B, D, F, G, J, K and L) generally have younger canopies, more scrubby structure (honeysuckle invasion) and/or are disturbed by extensive trails, dumping/debris, past grazing or patchy clearing, and are considered to be of limited quality.

Numerous other woodlands (not surveyed during Tier 1 field studies) also occur within the detailed study area boundaries throughout the length of the project. These woodlands were not identified as quality features from secondary sources, and are expected to exhibit similar conditions as the intermediate and limited quality woodlands that were surveyed in Tier 1, as described above. Woodlands will be further surveyed and evaluated on a project-by-project basis in Tier 2 of the Eastern Corridor study.

Faunal Components

Fauna encountered during field surveys are listed in the project Ecological Resources Inventory Report (Balke American, February 2003). In general, populations consisted of species common to the urban/suburban (i.e., disturbed) project area and no atypical or unusual fauna were noted. Overall, 52 species of birds, 9 species of reptiles and amphibians and 13 mammal species were recorded from the project area during field surveys conducted for this study.

4.1.7. Threatened and Endangered Species

Information was obtained from the Ohio Department of Natural Resources (ODNR) Natural Heritage Program and the United States Fish and Wildlife Service (USFWS) regarding known occurrences of any federal or state-listed species in the Eastern Corridor study area; agency response letters regarding this information request are included in Appendix C. Detailed biological surveys for endangered species were not conducted for this Tier 1 DEIS. However, for species reported by agencies as possibly occurring in the area, efforts were made during field surveys conducted for this study to identify locations or features of potential habitat, as further described below.



Federal Listed Species

The Eastern Corridor study area lies within the ranges reported by the United States Fish and Wildlife Service (USFWS) of the federal endangered Indiana bat (*Myotis sodalis*) and running buffalo clover (*Trifolium stoloniferum*) and the federal threatened bald eagle (*Haliaeetus leucocephalus*). However, no specific occurrences of these species are reported from within the boundaries of the project study area. Potential habitat within the detailed study area is described below.

Indiana Bat: Summer breeding habitat requirements for Indiana bat include: dead trees with snags, especially those with exfoliating bark or cavities in the trunk or branches which may be used as maternity roost areas; live trees, such as shagbark hickory, which have exfoliating bark; and stream corridors, riparian areas and nearby woodlots which provide foraging sites. No detailed ecological survey for Indiana bat was conducted as part of this study; however, it was noted during field studies that potential summer habitat (i.e., areas containing suitable roosting trees and adjacent foraging habitat) occurs in the study area along the Little Miami River and East Fork, their associated wooded riparian corridors and bottomlands, and wooded wetlands



located along their floodplains. Potential summer habitat for this species also occurs along Duck Creek, Dry Run, Hall Run, Salt Run, Shayler Run Tributary and a number of associated tributaries. Riparian areas along these smaller surface streams are only considered marginal for potential summer habitat due to natural limitations (these features provide limited foraging potential due to extended periods of low to no flow) and close proximity to human disturbances. A number of larger woodlands identified in the study area (Woodlands A through J; see above) also contain potential Indiana bat summer habitat (potential roosting trees).

- <u>Running Buffalo Clover:</u> This species grows in rich moist soils on areas that have a pattern of periodic disturbance such as mowing, trampling, or grazing. Remnant populations have been found in developed areas in orchards, cemeteries, pastures, woodlots, lawns and along old roads and trails. The ODNR Division of Natural Areas and Preserves reports two occurrences of this species in the general project vicinity, but well outside the current project study area boundaries. No detailed ecological survey for running buffalo clover was conducted as part of this study, however, potential habitat was noted to occur along the Little Miami River and East Fork riparian corridors and in several of the woodlands surveyed for the project, including Woodland E (Ault Park), Woodland C (Red Bank Woods) and portions of Woodlands A, F, H and I (i.e., along disturbed trails and/or riparian portions of these woodlands). More detailed survey for this species will take place during Tier 2 of the Eastern Corridor project when specific alignment studies are conducted.
- <u>Bald Eagle:</u> Information obtained from the Ohio Department of Natural Resources (ODNR) Division
 of Wildlife and the Kentucky Department of Fish and Wildlife Resources (phone conversations
 conducted for the ecological inventory) indicates that no bald eagle nest sites are known to occur in
 either Hamilton or Clermont Counties or on islands in the Ohio River in the project vicinity. No bald
 eagles or bald eagle nest sites were observed during ecological field surveys conducted for this
 project.



In addition, ODNR lists two federal candidate species from the general project vicinity, including rayed bean mussel (*Villosa fabalis*) and sheepnose mussel (*Plethobasus cyphyus*). Rayed bean mussel is listed for the East Fork Little Miami River and anywhere in is drainage where preferred habitat is found. Sheepnose mussel is listed for the Ohio River in Hamilton and Clermont Counties.

State Listed Species Encountered in Project Study Area

ODNR Natural Heritage Program information includes reports of 15 state listed species from within or adjacent to the Eastern Corridor detailed study area, including 2 plants, 7 mussels, 4 fish, 1 reptile and 1 bird (see Figure 4.5 for those species reported from within the detailed study area boundaries). Of these reported species, two were encountered during field surveys conducted for this study (carolina willow and red-eared slider), as further described below.

- <u>Carolina Willow (Salix caroliniana; State Threatened)</u>: Preferred habitats for this species includes rocky soil along riverbanks, gravel bars, sandy shores and low woods. Populations of this species were observed along the Little Miami River at two locations just downstream of its confluence with the East Fork. Carolina willow is reported by ODNR from an island in the middle of the Little Miami River located outside of (but immediately adjacent to) the study area just north of the project.
- <u>Red-Eared Slider (*Trachemys scripta elegans*; State Monitored):</u> This species is reported from a historic Little Miami River slough within the project study boundaries (see Figure 4.5). Sliders prefer quiet, soft, muddy-bottomed waters with suitable basking spots such as logs, rocks or stumps near the water. Numerous turtles were observed in the impounded muddy section of this slough that holds water perennially. Although the turtles in this impounded portion of the slough resembled the red-eared slider, individuals could not be positively identified during field surveys conducted for this project due to extremely muddy conditions of the impoundment.

State Species Reported as Occurring But Not Encountered During Field Surveys

Other state-listed species reported from the project area, but not encountered during Tier 1 field studies include the following:

- <u>Smooth Buttonweed (Spermacoce glabra; State Potentially Threatened)</u>: This plant species is reported by ODNR in the general area from four locations along the banks of the Ohio River. Preferred habitat includes swamps, wet woods and openings. In Ohio it is found mostly on muddy shores and low banks of the Ohio River. Potential habitat within the study area boundaries occurs along the Little Miami River and East Fork riparian corridor and bottomlands.
- <u>Few-Flowered Tick-Trefoil (Desmodium pauciflora; State Potentially Threatened)</u>: This plant species is reported by ODNR from Ault Park in proximity to Duck Creek Tributary #3, at the edge of the study area boundaries. Preferred habitat includes rich or alluvial woods, wooded banks and ravine bottoms. Potential habitat within the study area occurs along the Little Miami River and East Fork and several surveyed woodlands (i.e., sites containing steep ravines and/or alluvial bottoms), including Woodlands A, B, E, G, H, I and J.
- <u>Mussels: Elephant Ear (Elliptio crassidens; State monitored), Ohio Pigtoe (Pleurobema cordatum; State Endangered), Monkeyface (Quadrula metanerva; State Endangered), Butterfly (Ellipsaria lineolata; State Endangered), Threehorn Wartyback (Obliquaria reflexa; State Threatened), Deertoe (Truncilla truncata; State Special Interest), Wartyback (Quadrula nodulata; State Endangered):</u> These mussel species are reported in the study area by ODNR from various locations in the Ohio



River, Little Miami River and East Fork. Most of the known occurrences are from outside the project study area except: a known location of wartyback from the Little Miami River in the vicinity of Red Bank Road, a known location of elephant-ear from the East Fork near Red Bank Road, and a known location of deertoe from the East Fork in the vicinity of I-275. Preferred habitat for these species includes medium to large rivers in mud, sand or medium to fine gravel.

 <u>Mussel Bed (State Special Interest)</u>: Known mussel beds from ODNR Natural Heritage Database information occur in the Little Miami River in the project vicinity at the SR 28 bridge in Milford (outside the study area boundaries) and at two locations in the East Fork: in the vicinity of the I-275/US 50 interchange and further upstream in the vicinity of the Cincinnati Nature Center (both locations outside the project study area boundaries). Mussels have also been surveyed from the Little Miami River at Newtown Road. Species collected from the Little Miami River and East Fork from previous studies are described previously (see Chapter 4.1.4).

As noted above, potential habitat for mussels within the detailed study area boundaries occurs in both the Little Miami River and East Fork. Mussel surveys in these streams (as determined necessary) will take place during Tier 2 of the Eastern Corridor project when specific alignment studies are conducted.

Overall, mussels are considered to be indicator species for assessing water quality and general health of a stream, and are an integral component of the Ohio River and Little Miami River ecosystems. In general, freshwater mussels are a declining aquatic faunal group in the United States due to stream habitat and water quality degradation.

- <u>River Darter (Percina shumardii; State Threatened)</u>: This species is reported by ODNR from the Ohio River about 1.5 miles downstream from the I-471 bridge. Preferred habitat for the river darter includes the deeper lower ends of riffles in large and moderately sized streams and rivers. Potential habitat within the study area boundaries may occur in the Little Miami River.
- <u>Burbot (Lota lota; State Special Interest)</u>: This fish species is reported in the general area by ODNR from the Ohio River just downstream of the I-471 bridge and from the Little Miami River downstream of Newtown Road. Preferred habitat includes deep, cold water of rivers and lakes, and potential habitat within the study area boundaries occurs in both the Little Miami River and East Fork.
- <u>Mooneye (*Hiodon tergisus*; State Special Interest)</u>: This fish species is reported in the general area by ODNR from: the Ohio River just upstream from the I-471 bridge; from the Little Miami River at Beechmont Avenue; from the Little Miami River just upstream of Newtown Road; and from the Little Miami River at SR 28 (all reported occurrences are outside the project study area boundaries). The mooneye prefers clear water habitat of large streams, rivers, and lakes, and potential habitat within the study area boundaries occurs in both the Little Miami River and East Fork.
- <u>River Redhorse (*Moxostoma carinatum*; State Special Interest)</u>: This fish species is reported in the general area by ODNR from the Ohio River south of Columbia Parkway near Collins Avenue, from the Little Miami River at the Beechmont Avenue and SR 28 bridges, and from the East Fork just west of Olive Branch-Stonelick Road (all reported occurrences are outside the project study area boundaries). Preferred habitat includes moderate to swift waters of large rivers, lower portions of main tributaries and reservoirs and pools over clean gravel and rubble. The species is seldom found in deep water with mud, silt, or sand bottoms. Potential habitat for this species occurs within the study area boundaries along the Little Miami River along Round Bottom Road and the East Fork near I-275.
- <u>Sora (*Porzana carolina*; State Special Interest):</u> This bird species is reported in the general area by ODNR along the banks of the Little Miami River in the vicinity of the Round Bottom Road/Mount Carmel Road intersection. Preferred habitat in Ohio includes freshwater marshes, marshy ponds



and wet meadows. Potential habitat for this species is scattered within the study area boundaries, primarily along the Little Miami River and East Fork.

4.1.8. Farmland

Information concerning the locations of Agricultural Districts and Current Agricultural Use Value (CAUV) parcels in the project area was obtained from the Hamilton County and Clermont County auditors offices.

Agricultural lands comprise roughly 11% of the detailed study area. Agricultural row crop, which includes several large sod farms, occurs west of Newtown along the Little Miami River 100-year floodplain. Other smaller areas of agricultural land occur along Round Bottom Road, SR 32 and east of I-275 in the Eastgate area.

Agricultural Districts and Current Agricultural Use Value (CAUV) parcels in the project area are shown on Figure 4.6. All of the district parcels occur in Hamilton County and most are located between SR 32 and the Little Miami River, west of Newtown along the Little Miami River floodplain. One additional CAUV parcel occurs along I-275 just north of Clough Pike in the Eastgate vicinity.

4.1.9. Parks and Other Greenspaces

Parks and other greenspaces occurring in the Eastern Corridor were obtained from available GIS information (primary source: Eastern Corridor Land Use Vision Plan, Meisner and Associates, May 2002) and other available mapping, including information obtained from local municipalities and park districts. Existing facilities in the project study area are described below.

Public-Owned Parks and Greenspace

Thirty public-owned parks and seven public-owned greenspaces occur within the boundaries of the Eastern Corridor detailed study area (entirely or in part), as listed in Table 4.4. These facilities, and others immediately adjacent to the detailed study area, are displayed on Figure 4.7. In general, these facilities include state, county, township and city/village owned parks, athletic fields, golf courses, nature preserves and undeveloped or minimally developed (unnamed) greenspaces. Concentrations of these facilities in the project area occur along the Cincinnati riverfront area, in the vicinity of Lunken Airport, in the Mariemont and Newtown vicinities, and scattered in Anderson Township. Eighteen of these facilities may be potentially impacted by the project in that they occur, in part, within the estimated corridor widths of the various modal alternatives under consideration in the Eastern Corridor. Detailed descriptions of these 18 features and preliminary Section 4(f) evaluation are presented in Chapter 5.3 of this DEIS.



Not included in Table 4.4, nor the Section 4(f) discussion in Chapter 5.3, are public parks and greenspaces potentially affected by TSM projects under consideration for the Eastern Corridor. Qualitative discussion of potential impacts due to proposed TSM improvements are presented in Chapter 5.1.1 of this DEIS. TSM projects for the Eastern Corridor (and detailed impacts) will be further evaluated during Tier 2, as applicable.

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Park or Greenspace Name	Size (acres)	County	Owner	Description
Madisonville Recreation Center	8.1	Hamilton	Cincinnati Recreation Commission	Community center
Airport Playfield	374.4	Hamilton	Cincinnati Recreation Commission	Bike trail, golf course, picnic areas
Public Landing/Showboat	5.2	Hamilton	Cincinnati Recreation Commission	Parking, boat ramp, theater
Sawyer Point Proctor and Gamble Pavilion	8.3	Hamilton	Cincinnati Recreation Commission	Concert area, picnic areas
Yeatman's Cove	8.7	Hamilton	Cincinnati Recreation Commission	Concert area, picnic areas
Linwood Athletic Field	9.3	Hamilton	Cincinnati Recreation Commission	Athletic fields
Bicentennial Commons	11.0	Hamilton	Cincinnati Recreation Commission	Concert area, athletic fields
Fern Woods	14.7	Hamilton	Cincinnati Parks	Nature preserve/natural areas
Ault Park	224.1	Hamilton	Cincinnati Parks	City (regional) park
Eden Park Waterfront (Theodore M. Berry International Friendship Park)	18.8	Hamilton	Cincinnati Parks	Walkways, gardens, pavilion currently under construction
Lytle Park	2.7	Hamilton	Cincinnati Parks	City (neighborhood) park
Daniel Drake Park	66.3	Hamilton	Cincinnati Parks	City (neighborhood) park
Morris Park	0.6	Hamilton	Cincinnati Parks	City (neighborhood) park
Cincinnati Rec. Comm. Little Miami Scenic River Park (Armleder Little Miami Park)	97.5	Hamilton	Cincinnati Parks, Cincinnati Recreation Commission	City (regional) park
Otto Armleder Memorial Park (Armleder Little Miami Park)	224.7	Hamilton	Cincinnati Parks, Cincinnati Recreation Commission	City (regional) park
Little Miami Golf Center	273.4	Hamilton	Hamilton County Park District	Golf, lawn bowling
Greenspace – Rosslyn/Erie	2.1	Hamilton	City of Cincinnati	Greenspace
Greenspace - Lincoln Terrace	1.4	Hamilton	City of Cincinnati	Greenspace
Rakestraw Memorial Rec. Area	16.0	Hamilton	Cincinnati Recreation Commission	Athletic fields

Table 4.4. Public-Owned Parks and Greenspace in the Eastern Corridor Detailed Study Area



Table 4.4. Public-Owned Parks and Greenspace in the Eastern CorridorDetailed Study Area

Park or Greenspace Name	Size (acres)	County	Owner	Description
Mariemont Community Gardens	75.6	Hamilton	Village of Mariemont	Community garden, greenspace
Mariemont Pool/Dogwood Park	16.3	Hamilton	Village of Mariemont	Swimming/hiking trails
Miami Bluff Park (The Concourse)	11.5	Hamilton	Village of Mariemont	Greenspace, concourse overlook
Short Park (Robert W. Short Park)	22.3	Hamilton	Village of Newtown	Basketball, baseball, picnic areas, trails
Newtown Firefighters Memorial	0.31	Hamilton	Village of Newtown	Memorial, gazebo, benches
Village of Newtown Mini-Park	0.3	Hamilton	Village of Newtown	Greenspace, benches
Old Fort Greenspace Acquired Area	19.7	Hamilton	Anderson Township	Greenspace (former residential area)
Clear Creek Park	83.4	Hamilton	Anderson Township	Soccer fields
Greenspace - Batavia Road 1	33.9	Hamilton	Anderson Township	Greenspace
Greenspace - Batavia Road 2	2.4	Hamilton	Anderson Township	Greenspace
Anderson Township Greenspace	49.1	Hamilton	Anderson Township	Greenspace
Firehouse Fields	9.0	Hamilton	Anderson Township	Baseball and soccer fields
Anderson Lake Park	20.0	Hamilton	Anderson Township	Greenspace
Riverside Park	45.2	Hamilton	Anderson Township	Athletic fields, playground, trails
Broadwell Woods	68.7	Hamilton	Anderson Township	Nature preserve
Greenspace - Whiting Way	9.9	Hamilton	Anderson Township	Greenspace
Veterans Memorial Park	23.3	Clermont	Union Township	Athletic fields, trails, lake
Mt. Carmel Park	5.6	Clermont	Union Township	Soccer fields

Privately-Owned Greenspaces

Approximately 15 privately-owned recreational greenspaces occur within the Eastern Corridor study area boundaries (entirely or in part; see Figure 4.7). These facilities include private country clubs, golf courses, gun clubs/practice ranges, private ballfields and horse riding/boarding facilities.

<u>Horseshoe Bend Nature Preserve:</u> Also included in this category is one privately-owned nature preserve, Horseshoe Bend, located along both sides of the Little Miami River across from the Red Bank Road/Wooster Pike interchange area, and owned by the Little Miami Rivers, Incorporated. Tier 1 reconnaissance woodland surveys conducted for the project indicate that this floodplain woodland is dominated by a silver maple, cottonwood and



sycamore canopy, with an average canopy tree size of 18 inches in diameter at breast height (dbh), and scattered larger mature canopy trees (35+ inches in dbh). The understory ranges from open (under the wooded canopy) to scrubby (along the woodland edges), and is dominated by boxelder, elm, willow, elderberry and honeysuckle. A high-tension power line across the Little Miami River passes through the north edge of the Horseshoe Bend, where the wooded canopy is cleared and vegetation is dense and scrubby (elderberry and herbaceous cover). Flood debris (vegetation and other debris) is concentrated along the north and south edges of the woodland.

Secondary sources report that the Little Miami River in the Horseshoe Bend vicinity supports over 80 fish species, several state endangered fish and mussel species, and over 100 types of aquatic macroinvertebrates, and that the Horseshoe Bend itself provides foraging and/or nesting habitat for a variety of mammals, herpetofauna, and birds, including several rare migratory species (Heeden and Brand, 2000).

4.1.10. Hazardous Waste

An initial review of federal and state environmental records was conducted early in Tier 1 to identify suspect hazardous materials sites within the project study area. This review included a search of 16 total databases (twelve federal and four state databases) and results were reported in the Eastern Corridor Environmental Inventory Source Document (Balke American et al., March 2002). Twenty-two sites from this initial inventory were determined to be sites of hazardous materials concern, with 12 of the 22 sites identified as high risk (priority) hazardous materials sites. These 12 priority sites were then further evaluated to identify the potential for recognized environmental conditions. This additional evaluation consisted of a file review, including evaluation of the following literature (when available) for each of the priority sites: historical topographical maps, historical Sanborn Fire Insurance Maps, aerial photographs, water well reports, public files and environmental records review. Information from this file review is presented in: Results of Hazardous Materials Environmental Inventory (Corridor Inventory and File Review of Priority Sites), Eastern Corridor PE/EIS, Hamilton and Clermont Counties (H.C. Nutting Company, December 31, 2002).

Summary information from the initial hazardous materials inventory and file review information on existing priority hazardous material sites in the project study area is presented below.

Hazardous Materials Literature Review

The initial review of federal and state databases identified numerous hazardous materials database sites within the project study area (some sites multi-listed). Each of these sites was geographically plotted according to their applicable database and included in the project Environmental Inventory Source Document (Balke American et al., March 2002).

Databases with sites of hazardous materials concern included National Priority List (NPL) Sites, Comprehensive Environmental Recovery Compensation and Liability Act (CERCLA) Sites, Ohio Master List (MSL) Sites, Resource Conservation and Recovery Act Large Quantity Generators (RCRA LQG's), RCRA Transportation/Storage/Disposal Facilities (RCRA TSD's) and Solid Waste Facilities (SWF's). In addition, sites with the potential for a release and/or



impact of hazardous materials to the project study area (based on review of available secondary source information) were also determined to be areas of concern.

Of the database sites identified during the initial inventory, 20 sites of hazardous materials concern were identified within the boundaries of the Eastern Corridor detailed study area and 2 sites (Mentor Dump and Schulte Metal Finishing) occur just outside the boundaries; these 22 sites are shown on Figure 4.8 and summarized in Table 4.5.

Site ^[1]	Address	Regulatory Database/Concern
BASF	1720 Dana Avenue	MSL / CERCLA (Inactive) / RCRA Corrective Actions
Multicolor Corporation	4575 Eastern Avenue	MSL / CERCLA (Inactive) / RCRA Corrective Actions
Bway, Inc./Heekin Can Division/Milton Can Company, Inc.	8200 Broadwell Road	MSL / CERCLA / RCRA Corrective Actions / RCRA LQG
Nren	256 McCullough Street	RCRA LQG
Schulte Metal Finishing	4909 Charlemar Drive	RCRA LQG
Racking & Sharpening Services	4021 Erie Court	RCRA LQG
Creast Craft	4625 Red Bank Road	RCRA TSD
Electric Service Company	5315-5335 Hetzel Avenue	RCRA TSD
Cincinnati Steel Treating Co.	5701 Mariemont Avenue	RCRA Corrective Actions
Night Hawk Motor Transport	6810 East Plum Street	RCRA TSD
Senco Products	8450 Broadwell Road	RCRA LQG
Vivi Color Inc.	665 Cincinnati Batavia Road	RCRA LQG
Lucas Variety	3241 Omni Drive	RCRA LQG
Meijer Store #148	4445 Gleneste Withamsville Road	RCRA LQG
Hafner & Sons, Inc.	Wooster Pike & Red Bank Expressway	SWL
Burger Environmental, Inc.	7945 Batavia Pike (SR 32)	SWL
Newtown Landfill	Batavia Pike (SR 32)	SWL
Norwood Dump	Wooster Pike near Duck Creek	SWL
Anderson Township Landfill	Broadwell Road	SWL
Mentor Dump (located just outside the study area boundaries)	North of the Xavier University Cohen Center (north of Dana Avenue, west of Mentor Avenue)	SWL
Didier Taylor Refractories	8361 Broadwell Road	Industrial site with large amounts of chromium oxide and alusite
Gasoline spill (truck overturn)	5600 Wooster Pike	8,600 gallon gasoline release

Table 4.5. Sites of Potential Hazardous Materials Concern Identified in Eastern Corridor Study Area from Database Search



Table 4.5. Sites of Potential Hazardous Materials Concern Identified in Eastern Corridor Study Area from Database Search

Site ^[1] Address	Regulatory Database/Concern
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^[1] See Chapter 5, Tables 5.2 to 5.8, for list of concern sites within feasible alternative corridors.

Of the 22 sites of concern listed in the above table, 12 were determined to be high risk priority sites based on initial secondary source review; these primarily included large quantity generator sites and active or inactive solid waste landfills. These 12 priority sites were further evaluated to identify the potential for recognized environmental conditions, as presented below.

File Review of Priority Hazardous Materials Sites

Twelve sites identified as priority concern, based on information obtained from the initial hazardous materials inventory conducted for the project, were further evaluated to identify potential for recognized environmental conditions. This additional evaluation consisted of a file review, including evaluation of the following literature (when available) for each of the priority sites: historical topographical maps, historical Sanborn Fire Insurance Maps, aerial photographs, water well reports, public files and environmental records review. Information and conclusions for these twelve priority sites are reported in: Results of Hazardous Materials Environmental Inventory (Corridor Inventory and File Review of Priority Sites), Eastern Corridor PE/EIS, Hamilton and Clermont Counties (H.C. Nutting Company, December 31, 2002), and summarized below. The need for further environmental study (i.e., Phase 1 field studies) will be determined in Tier 2. The twelve priority concern sites are described below:

- H. Hafner & Sons, Incorporated is an active construction and demolition debris landfill at 2 Wooster Pike near the intersection with Red Bank Expressway in Hamilton County, Ohio. It occurs along the Little Miami River in the vicinity of Horseshoe Bend. According to available public documentation (presented in H.C. Nutting, December 31, 2002), quarterly groundwater monitoring has taken place at this site since 1998. Results indicate that groundwater quality has met primary drinking water standards during this time. Although various secondary contaminants have been detected (elevated levels of iron, manganese, sulfate and chloride), these contaminants are considered to only impact taste, odor, color and certain other aesthetic aspects of drinking water.
- Burger Environmental, Incorporated is an active construction and demolition debris landfill located at 7945 Batavia Pike (SR 32) in Newtown, Hamilton County, Ohio. According to available public documentation (presented in H.C. Nutting, December 31, 2002), quarterly groundwater monitoring has taken place at this site since 1998, except in 1999 when it was undertaken biannually. Results indicate that groundwater quality has met primary drinking water standards during this time for most parameters. Although various secondary contaminants have been detected (elevated levels of iron, manganese, sulfate and chloride), these contaminants are considered to only impact taste, odor, color and certain other aesthetic aspects of drinking water.
- <u>Newtown Landfill</u> is an active construction and demolition debris landfill located along Batavia Pike (SR 32) in Newtown, at the same vicinity (and immediately adjacent to) Burger Environmental Landfill (see above). According to available public documentation (presented in H.C. Nutting, December 31, 2002), groundwater monitoring has taken place at this site (variable intervals) since 1997. Results indicate that groundwater quality has met primary drinking water standards during this time for most parameters. Although various secondary contaminants have been detected (elevated



levels of iron, manganese, sulfate and chloride), these contaminants are considered to only impact taste, odor, color and certain other aesthetic aspects of drinking water.

- <u>Norwood Dump</u> is a closed solid waste landfill site used by the City of Norwood from 1946 to 1972. It is located along Duck Creek just downstream from the Wooster Pike bridge crossing (north of Beechmont Avenue) in Cincinnati, Hamilton County, Ohio. File review of the site (presented in H.C. Nutting, December 31, 2002) indicated that this facility has been filled with materials which included sanitary wastes, demolition materials, incinerator residue, industrial liquid wastes, industrial semi-liquid wastes, tires, shredded rubber, rubber conveyor belts, and miscellaneous organics. Reports of previous work performed at the site indicated that leachate, groundwater, and surface soils were contaminated by landfill. Explosive gas was also found to be present on portions of the site.
- Anderson Township Landfill is a closed solid waste facility located on the south side of Broadwell Road (Newtown vicinity) in Anderson Township, Hamilton County, Ohio. The facility is owned by Rumpke, Incorporated and was reported closed in 1986. File review (presented in H.C. Nutting, December 31, 2002) indicates that annual groundwater sampling is currently performed on the site and analytical results show that primary drinking water standards are met. Elevated levels of iron and manganese (secondary contaminants) have been found, however are considered to only impact taste, odor, color and other aesthetic effects of drinking water. Quarterly gas monitoring performed at the site has indicated that explosive gas is generally not detected.
- <u>Mentor Dump</u> is a closed solid waste facility located north of the Xavier University Cohen Center (north of Dana Avenue and west of Mentor Avenue) in Cincinnati, Hamilton County, Ohio. Historic topographic maps of the site (presented in H.C. Nutting, December 31, 2002) indicate that extensive filling took place sometime between 1912 and 1954. However, public files were not available for this facility and no information exists regarding any previous groundwater, soil and/or explosive gas monitoring.
- <u>BWAY, Incorporated</u> (formerly known as Milton Can Company and Heekin Can, Incorporated) is a large manufacturing facility that produces aluminum beverage cans. It is located at 8200 Broadwell Road (on the north side of Broadwell Road in the Newtown vicinity) in Cincinnati, Hamilton County, Ohio. File review (presented in H.C. Nutting, December 31, 2002) indicates that this facility is a large quantity generator of hazardous wastes and has received several violations, evaluations and enforcement actions by the OEPA. According to environmental database information, several hazardous substances were reportedly released onto site soils and water.
- <u>Senco Products, Incorporated</u> is a large manufacturing facility that produces fastening systems. It is located at 8450 Broadwell Road (on the north side of Broadwell Road, across from [east of] BWAY, Incorporated) in Cincinnati, Hamilton County, Ohio. File review of Senco Products (presented in H.C. Nutting, December 31, 2002) indicates that varying amounts of zinc compounds were reportedly released into water at this facility and, in 1988, a release of 329 gallons of xylol took place. While it was indicated that impacted soils from the spill were excavated, the potential for subsurface impact still exists.
- <u>Schulte Metal Finishing, Incorporated</u> is a metal coating facility located at 4909 Charlemar Drive (Oakley vicinity) in Cincinnati, Hamilton County, Ohio. A historical Sanborn Fire Insurance map from 1981 indicated that a "brass products factory" occupied this site. Schulte Metal Finishing was also found to be a large quantity generator of hazardous wastes, and had received several violations, evaluations and enforcement actions by the OEPA. Environmental database information further indicates that nickel compounds were reportedly released into water at the facility.
- <u>Didier Taylor Refractories Corporation</u> is a manufacturing facility located at 8361 Broadwell Road (on the south side of Broadwell Road, south of Senco Products and across from [east of] Anderson



Township Landfill) in Cincinnati, Hamilton County, Ohio. File review (presented in H.C. Nutting, December 31, 2002) indicates that large quantities of chromium oxide and aluminum oxide were reportedly produced at this facility. These substances are considered toxic and the potential for impact exists.

- <u>Cincinnati Steel Treating Company</u> is an industrial facility, which performs heat-treating processes for various metals, located at 5701 Mariemont Avenue in Cincinnati, Hamilton County, Ohio. Historical Sanborn Fire Insurance maps indicate that the site had historically been occupied by electrical transformer manufacturing and storage (potential PCB and oil impact), an incinerator (potential metal contamination) and petroleum oil storage tanks (potential subsurface impacts). In addition, a release of an unknown quantity of quench oil (due to pipeline rupture) was reported to have taken place at the facility on June 27, 1993, resulting in the potential for subsurface impact.
- <u>An approximately 8,600-gallon automotive gasoline release</u> due to a tractor-trailer overturn occurred at 5600 Wooster Pike on August 23, 1987. File review information (presented in H.C. Nutting, December 31, 2002) indicates that a majority of the release had burned off from fire and that absorbents were used to contain any remaining gasoline.

4.1.11. Air Quality and Noise/Vibration

<u>Air Quality</u>: Hamilton and Clermont Counties are located in the Cincinnati Air Quality Control Region and are under the OKI Regional Council of Governments, local Metropolitan Planning Organization (MPO) jurisdiction. The multi-modal transportation plan recommended in the Eastern Corridor Major Investment Study (MIS), components of which form the basis for alternatives development in this Tier 1 phase of the project, is included in OKI's recently adopted FY 2004-2007 Transportation Improvement Plan (TIP), in the currently adopted regional long range 2030 Regional Transportation Plan, and in the State of Ohio's Long Range Multi-Modal Transportation Plan. OKI has determined that projects in the TIP, STIP and long range plan (including the Eastern Corridor MIS Recommended Plan) are consistent with the air quality goals of the one-hour ozone maintenance plans of Ohio, Kentucky and Indiana. As such, the project is determined to be in conformity with regional air quality.

<u>Noise Associated with Proposed Roadway Improvements:</u> A screening-level analysis was conducted to determine estimates for the number and location of potential noise-sensitive receptors occurring along existing roadways and proposed highway alternatives under consideration in the Eastern Corridor. A noise-sensitive receptor is a land-use which is estimated to approach or exceed the Noise Abatement Criteria (NAC) as defined in the USDOT's Title 23 code of Federal Regulations (CFR) Part 772, which establishes design noise level/land use relationships for various types of land developments:



(23 CFR 772)
NOISE ABATEMENT CRITERIA

Activity <u>Category</u>	<u>L_{eq} (h)</u>	<u>L₁₀ (h)</u>	Description of Activity Category
A	57 (Exterior)	60 (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, open spaces, or historic districts, which are dedicated or recognized by appropriate local officials for activities requiring special quantities of serenity and quiet.
В	67 (Exterior)	70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, and parks which are not included in Category A and residences, motels, hotels, public meeting rooms, schools, churches, libraries, and hospitals.
С	72 (Exterior)	75 (Exterior)	Developed lands, properties or activities not included in Categories A or B above; these typically include businesses and other commercial properties.
D	N/A	N/A	Undeveloped lands

For this screening, receptors were classified under land use Activity Categories B and C to reflect the land use types present in the Eastern Corridor.

Noise-sensitive receptor estimates were developed using the FHWA Traffic Noise Model (TNM) Look-up Tables (FHWA, July 1998), a screening tool for simple applications of the FHWA TNM. Specifically, the Look-up Tables provide a reference of pre-calculated FHWA TNM sound propagation results for simple highway geometries based on traffic volume and speed, vehicle type, terrain type (hard/soft), and distance from roadway centerlines. This reference was used to determine which areas along existing or proposed roadway segments are estimated (or predicted) to experience sound levels that approach the NAC for Categories B and C under existing and Build conditions. Contours representing these areas were delineated on project mapping, and individual receptors within these areas were then identified. The estimates developed as a result of this screening process are presented in Chapter 5.1.4. Mapping (GIS) showing the location of potential receptors is on file at the project office.

It should be noted that due to the preliminary screening-level of this analysis, the number of noise receptors reported in this Tier 1 DEIS do not necessarily indicate noise impact, but represent areas of noise sensitivity. Noise analyses performed at a finer level of detail will be conducted in Tier 2 to determine specific noise impacts (and appropriate mitigation) related to roadway improvements [in accordance with FHWA Title 23 Code of Regulations Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", FHWA guidance entitled "Highway Traffic Noise Guidance Policies and Written Noise Policies", June 12, 1995, and the Ohio Department of Transportation Policy No. 21-002 (P) January 16, 2003, and Standard Procedures No. 417-001 (SP), September 17, 2001.



<u>Noise and Vibration Associated with Proposed Rail Transit</u>: Screening level analyses were conducted to determine an estimated number and location of potential noise and vibration receptors (buildings) occurring along the rail transit alternatives under consideration in the Eastern Corridor. These screening analyses were conducted according to procedures outlined in: FTA's Transit Noise and Vibration Impact Assessment Guidance Manual (April 1995), as summarized below.

Potential Noise Receptors Associated with Rail Transit

Potential noise receptors were identified by use of a standard table of impact distances (FTA, April 1995) to determine if noise from proposed rail transit may affect noise-sensitive sites. Potential noise sensitive buildings/sites were divided into three land use categories, including:

- Noise Category 1: Buildings and parks where quiet is an important element of intended use.
- Noise Category 2: Residences and buildings where people normally sleep, including homes, hospitals and hotels
- Noise Category 3: Institutional land uses with primarily daytime use, such as schools, libraries, churches and active parks.

Results of the noise screening for rail alternatives are presented in Chapters 5.1.3 and 5.1.4, and mapping (GIS) showing the location of potential receptors is on file at the project office. It should be noted that the number of noise receptors reported in this Tier 1 DEIS do not necessarily indicate noise impact, but represent noise sensitivity. More detailed noise analyses using FTA impact assessment guidelines will be conducted in Tier 2 of the Eastern Corridor study to determine specific noise impacts, and appropriate mitigation, related to rail transit.

Potential Vibration Receptors Associated with Rail Transit

Using FTA screening methods (April 1995), a standard table of impact distances was used to determine if ground-born vibration from proposed rail transit alternatives might affect certain types of vibration-sensitive land uses. Potential vibration-sensitive buildings were divided into three land use categories, including;

- Vibration Category 1: High sensitivity buildings where low ambient vibration is essential for operations occurring within the building, which may be well below levels associated with human annoyance. Examples include buildings associated with vibration-sensitive manufacturing and research, hospitals and laboratories with vibration-sensitive equipment, and university research operations.
- Vibration Category 2: Residences and buildings where people normally sleep, including homes, hospitals and hotels.
- Vibration Category 3: Includes schools, churches, other institutions and quiet offices that do not have vibration-sensitive equipment, but still have potential for activity interference.



Results of the vibration screening for rail alternatives are presented in Chapters 5.1.3 and 5.1.4. As with noise sensitivity, it should be noted that the number of vibration receptors reported in this Tier 1 DEIS do not necessarily indicate vibration impact, but represent vibration sensitivity. More detailed vibration analyses using FTA impact assessment guidelines will be conducted in Tier 2 of the Eastern Corridor study to determine specific vibration impacts, and appropriate mitigation, related to rail transit.

4.1.12. Visual Resources

The existing landscape of the project area is primarily residential, commercial and industrial development, with some agricultural land along the Little Miami River floodplain, semi-natural habitats (e.g. woodlands and wetlands) along the Little Miami and East Fork riparian corridors, and scattered woodlands. The existing major transportation network in the project area traverses slightly rolling to moderately steep terrain (to a lesser extent) bisecting dense concentrations of residential and commercial development along: 1) Columbia Parkway, Dana Avenue, Wasson Avenue, and Red Bank Road, 2) in the communities of Mariemont, Fairfax and Newtown, and 3) along SR 32 and I-275 in Clermont County in the Eastgate area. Heavy industrial development is concentrated along Columbia Parkway in the vicinity of Lunken Field, along Wooster Pike and Red Bank Road in the City of Fairfax, Duck Creek Road, SR 32 through the Village of Newtown, Round Bottom Road, and along Broadwell Road in the Ancor industrial development area.

For purposes of discussion, the visual resources are briefly described according to the six geographic areas of the Eastern Corridor (as described in Chapter 3.4.2). Visually sensitive resources are also identified within each of the six areas. Visually sensitive resources per Federal Highway Administration guidelines (FHWA, Office of Environmental Policy, undated) are defined as landscape components (landform, water, vegetation, manmade development, etc.), which are considered to have high visual quality. It should be recognized that high visual quality is not exclusively associated with natural landscapes, but can also be present in urban area landscapes. Some landscape components could be visually sensitive due to values that may or may not be related to visual excellence. These could be locations that are visually important for historic, scientific, or recreational reasons. Similarly, certain landscapes and resources may be important only to the local community.

Area #1: Wasson/Red Bank Road (from I-71/Xavier to Red Bank Road/US 50) - The Wasson/Red Bank Road area extends from Xavier University eastward along Wasson Road to Red Bank Road at US 50, and from the I-71/Red Bank Road interchange southward along Red Bank to US 50. It encompasses portions of the communities of Evanston, Norwood, O'Bryonville, Hyde Park, Oakley, Mt. Lookout, Madiera, Madisonville and Fairfax. Views from the proposed multi-modal transportation improvements in this area include mostly congested residential and commercial development with some areas of open greenspace. Less congested views in this area include the Withrow High School ball fields, Hyde Park County Club, Ault Park, and natural riparian areas along Duck Creek, including one woodland located between Madison Road and Duck Creek Road on the west side of Red Bank Road. The existing view from development adjacent to the current transportation network (the non-travelers view) consists of a combination of interstate roadway (I-71), federal routes (US 50), local streets, and railroad right-of-way. Three transportation hub areas (Xavier/Evanston hub, Oakley hub, and Madisonville hub) are also included as part of Area #1. The views from within each of the hub study areas are similar and include mostly congested residential and commercial development. Ault Park is identified as a visually sensitive resource within Area #1.



- Area #2: Ohio 32/Wooster West (from Red Bank/US 50 to Ancor/Mount Carmel Hill) The Ohio 32/Wooster West area extends from the Red Bank Road/US 50 interchange (Area #1) eastward across the Little Miami River, through Newtown to Mt. Carmel Road/SR 32 in Anderson Township. An important component of the transportation plan in this area is use of a multi-modal "corridor" with rail transit and bikeways paralleling the new SR 32 alignment (to maximize right-of-way efficiency and minimize new crossings in the sensitive river area). Views from the proposed multi-modal transportation improvements in this area include wide-open natural vistas along the Little Miami River corridor, open agricultural fields, disturbed industrial zones, built-up residential areas, and sloping wooded hillsides. The majority of views in this area are of open, more natural features, including the Little Miami River Horseshoe Bend area (view of woodlands, wetlands, bottomland floodplain, and the river), Clear Creek field, sod farm, Little Miami Golf Center, Indian Valley Golf Course, Avoca Park, and Mt. Carmel Hill (wooded). The existing view from development adjacent to the current transportation network (the non-travelers view) consists of a combination of federal routes (US 50), state routes (SR 32), local streets, and railroad right-of-way. Several visually sensitive resources are identified within Area #2, namely, the Little Miami River and associated natural features, Little Miami Golf Center (part of which lies within the Perin Village National Register District), Indian Valley Golf Course, Avoca Park, and large areas of wooded hillside along existing SR 32 the Mt. Carmel hill area (including Broadwell Woods).
- Area #3: Wooster East (from Ancor/Mount Carmel Hill to Milford) The Wooster East area extends from the Ancor/Mt. Carmel Hill vicinity (of Area #2) northeast to the existing I-275/US 50 interchange in Milford Township. It encompasses portions of Union and Miami Townships, and portions of the communities of Terrace Park and Indian Hill. The multi-modal transportation plan in this area is primarily transit-based (rail, bus and bikeway), with supplemental Transportation System Management (TSM) improvements on the existing roadway network. An important component of the plan in this area is a modal convergence point (rail, bus and existing highway) in the I-275/US 50 interchange (Milford) vicinity. Views from the proposed multi-modal transportation improvements in this area include a combination of natural river riparian features (Little Miami River and East Fork Little Miami River), open greenspace (Terrace Park Country Club) and sloping wooded hillsides, isolated residential development, and disturbed industrial/commercial development. The existing view from development adjacent to the current transportation network (the non-travelers view) consists of a combination of interstate roadway (I-275), federal routes (US 50), local streets, and railroad right-of-way. The Milford hub area is part of Area #3. The view from within this hub area includes mostly disturbed industrial and commercial areas. Both the Little Miami River and East Fork Little Miami River, and associated natural features are considered to be sensitive visual resources.
- Area #4: Eastern Avenue/Lunken (from Downtown to Lunken/US 50) The Eastern Avenue/Lunken area forms a narrow corridor beginning in downtown Cincinnati at the existing Riverfront Transit Center (under Second Street), and extending east following Eastern Avenue (US 52)/US 50 along the Ohio River to Lunken Airport, then extending north along US 50/Wilmer Avenue to the Red Bank/US 50 interchange area (Area #1). It follows along the edges of the East End, Columbia-Tusculum and Linwood neighborhoods. The multi-modal transportation plan in this area is primarily transit-based (rail, bus and bikeway), with supplemental Transportation System Management (TSM) improvements on the existing roadway network. An important component of the plan in this area is the transit tie-in to the existing downtown Riverfront Transit Center, linking the Eastern Corridor to downtown Cincinnati and potential connection to the proposed I-71 rail transit corridor. Views from the proposed multi-modal transportation improvements in this area include mostly congested residential, commercial and industrial development adjacent to the Ohio River, with some areas of more open greenspace (along portions of Duck Creek) and designed landscapes. The existing view from development adjacent to the current transportation network (the non-travelers view) consists of a combination of federal routes (US 50 and US 52), state routes (SR 125), local streets, and railroad right-of-way. Visually sensitive resources in Area #4 could include features in Yeatman's Cove, Sawyer Point Park, Schmidt Field, Alms Park and the Lunken Airport Playfield.



- Area #5: Eastern Avenue and Ohio 32/Eastgate (from Lunken/US 50 to I-275/Eastgate) This area covers eastern portions of the Eastern Avenue/Lunken area and the Ohio 32 area of the land use vision study, but focuses primarily on the SR 125 corridor in Anderson Township between US 50 and I-275, and including the former Beechmont Mall area. The multi-modal transportation plan in this area of the Eastern Corridor is primarily bus transit-based, with supplemental Transportation System Management (TSM) improvements on the existing roadway network. An important component of the plan in this area is a proposed bus transit hub located in the former Beechmont Mall area. Views from the proposed multi-modal transportation improvements in this area include open natural spaces (California Nature Preserve), recreational spaces (California Golf Course, Coney Island, Riverbend Music Center, River Downs), and disturbed residential and commercial development. The existing view from development adjacent to the current transportation network (the non-travelers view) consists of a combination of interstate roads (I-275), federal routes (US 52), state routes (SR 125), and local streets. The Beechmont hub is part of Area #5. The view from within the hub study area consists of heavily developed residential and commercial land use. Visually sensitive areas within Area #5 could include the California Nature Preserve, California Golf Course, Coney Island, and Riverbend Music Center (primarily applicable to proposed TSM improvements in this Area).
- Area #6: Ohio 32/Eastgate (from Ancor/Mt. Carmel Hill to Eastgate/Batavia) This area encompasses the Eastgate area of Union Township, extending along SR 32 from Mt. Carmel Road (Area #2) east to the new interchange at Olive Branch-Stonelick Road, and along I-275 from Barg Salt Run Road south to the existing SR 125 interchanges. The multi-modal transportation plan in this area focuses on new capacity and access changes and improvements associated with SR 32 and I-275, along with new rail transit, expanded bus, and Transportation System Management (TSM) improvements on the existing roadway network. Important components to the plan in this area include a major upgrade to the existing I-275/SR 32 interchange, establishment of a bus/rail transit hub in the Eastgate area, and upgrade of SR 32 to a limited access arterial roadway (from Area 2, east of I-275). Views from the proposed multi-modal transportation improvements in this area include mostly developed residential, commercial, and industrial areas, with some scattered areas of more open, less developed features, such as woodlands, streams and ponds. The existing view from development adjacent to the current transportation network (the non-travelers view) consists of a combination of interstate roads (I-275), state routes (SR 32), and local streets. The Eastgate hub is part of Area #6. The view from within the hub study area consists of a woodlot surrounded by commercial development. There are no visually sensitive resources considered within Area #6.

4.2. SOCIAL ENVIRONMENT

Information regarding land use, communities, employment and demographic conditions in the Eastern Corridor area presented in this DEIS were obtained from previous project documentation, including the Eastern Corridor Land Use Vision Plan (Meisner and Associates, May 2002) and the Eastern Corridor Vision Plan Economic Analysis (Economic Research Associates, January 2002). Summary information from these reports regarding the social environment in the Eastern Corridor is presented below.



4.2.1. Land Use and Development

Existing and Planned Land Use

The Eastern Corridor area is composed of a variety of land uses, including urban residential, suburban residential, commercial/retail, industrial, agricultural and greenspace/parks. Urban residential development is generally concentrated in Hamilton County, east of the Cincinnati business district along Eastern Avenue, and in and around the communities of Mariemont, Newtown, Norwood and Fairfax. Suburban residential land use is widely scattered throughout the study area, particularly east of the Little Miami River in Anderson Township and east of I-275 in Clermont County. Agricultural and greenspace areas are scattered in the study area, with concentrations along the Little Miami River floodplain and in the northeast and eastern portions of Clermont County. Industrial development is concentrated east of Newtown and in the Fairfax area, while commercial development (mostly retail and office) occurs in the Cincinnati business district and along the SR 32 corridor east of I-275 (Eastgate area).

Existing and planned (future) land use within the boundaries of the current Eastern Corridor detailed study area are shown on Figures 1.3 and 1.4 and summarized in Table 4.6 below.

Land Use Category	General Description	Existing Acreage	Land Use Vision Plan Acreage
Agriculture	Crop, dairy, stock or poultry production; example: sod farms along Little Miami River	852	745
Open Space	Passive or active outdoor recreational activities and related uses; example: Anderson Township soccer fields	725	1,163
Educational	School buildings and related structures; example: John P. Parker Elementary	78	77
Institutional	Facilities for public or private use with low to moderate intensity development; example: Anderson Hospital	198	188
Rural Estate Residential	Densities of 1 unit per 5 acres; example: Indian Hill	192	265
Low Density Residential	Densities of 1 unit per acre; example: along Mt Carmel Road near Broadwell	303	342
Low-Medium Density Residential	Densities from 1 to 2.17 units per acre; example: Ivy Hills (upper)	364	325
Medium Density Residential	Densities from 2.17 to 4.35 units per acre; example: Ivy Hills (base)	167	166
Medium-High Density Residential	Densities from 4.35 to 7.26 units per acre; example: Mariemont south of Wooster Pike	116	130
High Density Residential	Densities greater than 7.26 units per acre; example: Fairfax north of Wooster Pike	112	166
Multi-Family Residential	Apartments or condominiums at high densities; example: Drexel Apartments across from Hyde Park Plaza	229	219
Mobile Homes	Mobile home units at high densities; example: Romar Villa (Milford)	4	3

Table 4.6. Existing and Planned (Future) Land Use within the Eastern Corridor Detailed Study Area Boundaries



Land Use Category	General Description	Existing Acreage	Land Use Vision Plan Acreage
Mixed Use	Two or more uses within same building (e.g., apartments above retail) or same area (e.g., multi-family housing near retail) to create pedestrian oriented communities with both day and evening activities; example: Old Milford	5	816
Commercial	Retail, office and industrial uses; example: Eastgate	1,069	1,045
Office	Office buildings recommended	108	217
Office/Industrial	Allows both office and industrial uses, but discourages retail	0	668
Light Industrial	Small scale uses such as warehouses, storage, limited manufacturing, research, etc., without offensive emissions or nuisance; example: Coca-Cola distribution plant	396	199
Heavy Industrial	Intensive manufacturing with moderate to high requirements for freight transportation; example: Senco Products	507	155
Public Utilities	Gas, cable, electric, water, sewer or other utilities; example: MSD treatment plant	35	26
Transportation	Roadway/railroad right-of-way	1,052	1,021
Vacant Agriculture	Previous agricultural use, but currently vacant	62	0
Vacant Industrial	Previous industrial use, but currently vacant	333	3
Vacant Residential	Previous residential use, but currently vacant	540	2
Vacant Commercial	Previous commercial use, but currently vacant	493	2

Table 4.6. Existing and Planned (Future) Land Use within the Eastern Corridor Detailed Study Area Boundaries

Source: Eastern Corridor Land Use Vision Plan, Meisner and Associates, May 2002; acreages reported in above table are for the current 14 square mile Eastern Corridor study area.

Predominant existing land uses in the detailed study area consist of residential (18.7%), commercial (14.8%), transportation right-of-way (13.2%) and industrial (11.4%). Agricultural land and open space comprise 10.7% and 9.1% of the existing land use in the detailed study area, respectively, and vacant land comprises about 13% of the detailed study area.

The largest increases in land use are in the categories of open space, mixed use and office/industrial use. Mixed land use and office/industrial use, as described in the table above, are new categories in the Eastern Corridor land use vision plan, developed to allow flexibility to local jurisdictions in determining specific land use patterns in a particular area.



Zoning

General zoning in the Eastern Corridor vicinity is depicted on Figure 4.9. This map, developed for the Eastern Corridor Land Use Vision Plan (Meisner and Associates, May 2002), groups together similar zoning categories with different specific characteristics (due to the large number of jurisdictions involved and differences in specific zoning terms and descriptions). In general, predominant zoning categories within the current study area boundaries consist of residential, manufacturing/industrial, business and, along the Little Miami and Ohio Rivers, riverfront and riverfront recreational-residential-commercial.

Development Trends

The Eastern Corridor Vision Plan Economic Analysis (Economics Research Associates, January 2002) included an examination of baseline real estate demand estimates for major property types in the Cincinnati metropolitan area, and for the 70 square mile study area evaluated for the Eastern Corridor Land Use Vision Plan (Meisner and Associates, May 2002; see Chapter 1). The amount of demand was presented as the additional building space needed each year, and, for metropolitan Cincinnati, the typical amount of building space leased or sold (absorbed) each year during the 1990's was presented for comparison.

Future real estate demands for the Cincinnati metropolitan area, presented in Table 4.7 below, are based on historic market trends, current position in the real estate cycle and underlying demographic and economic factors in the area.

		ncinnati						
Property Type	Average Annual Future Estimates							
Property Type	1990's Typical	0-5 Years	6-10 Years	11-20 Years				
Office (square feet)	625,000	300,000	800,000	625,000				
Retail (square feet)	Mixed	200,000	900,000	700,000				
Industrial (square feet)	4,300,000	3,500,000	2,000,000	4,300,000				
Single Family (units)	9,300	10,000	7,000	9,300				
Multi-Family (units)	1,200	2,500	500	1,200				
Hotel (rooms)	375	150	400	375				
Source: Economics Res	earch Associates, Jar	uary 2002						

Table 4.7. Net Annual Real Estate Demand (Absorption) for Metropolitan Cincinnati

Real estate demand projections for the Eastern Corridor area, presented in Table 4.8 below, are based on overall metropolitan baseline figures (assuming changes within the Eastern Corridor in themselves will not affect the overall market position of the metropolitan area), historic and potential future household movement, relative access, and regional development patterns. Economics Research Associates (January 2002) noted in their report that demand projections for the Eastern Corridor are only net indications of demand, and do not account for the details of all potential changes in property types, submarkets, development patterns, etc. that may occur within and between the many different political jurisdictions comprising the study area, and should only be used as guidance for the project and proposed implementation strategies.

Property	roperty 0-5 Years				5-10 Years			10-20 Years		
Туре	Capt.	Ave/Yr	Buildout	Capt.	Ave/Yr	Buildout	Capt.	Ave/Yr	Buildout	
Office (sq. ft.)	8%	24,000	120,000	8%	64,000	440,000	8%	50,000	690,000	
Retail (sq. ft.)	-10%	-20,000	-100,000	3%	27,000	35,000	3%	21,000	140,000	
Industrial (sq. ft.)	5%	175,000	875,000	5%	100,000	1,375,000	5%	215,000	2,450,000	
Single Family (units)	15%	1,500	7,500	5%	350	9,250	5%	465	11,575	
Multi-Family (units)	5%	125	625	8%	40	825	8%	96	1,305	
Hospitality (rooms)	10%	15	75	10%	40	275	10%	38	463	

Table 4.8. Net Building Space Demand (Absorption) for theEastern Corridor Area

¹¹ The area referred to in this table is the 70 square mile study area evaluated for the Eastern Corridor land use vision plan (not the current 14 square mile Eastern Corridor detailed study area).

Capt. (Capture) – Percent of metropolitan real estate space demanded that is likely to be developed within the Eastern Corridor.

Ave/Yr – Average amount of building space demanded each year for the 0-5, 5-10 and 10-20 year periods.

Buildout – Total amount of building space demanded by the end of 5 years, 10 years and 20 years, respectively Source: Economics Research Associates, January 2002.

4.2.2. Demographic Conditions

Population in General Project Area

Population in the project vicinity, i.e., in the approximately 165 square mile Eastern Corridor MIS study area encompassing portions of Hamilton and Clermont Counties, was about 221,000 persons in 1995, and is expected to increase to about 236,000 persons by 2030 (an estimated 7% increase).

Meisner and Associates (May, 2002) evaluated land use within a smaller, approximately 70 square mile study area for the Eastern Corridor land use vision plan (ECLUVP). The ECLUVP study area encompassed portions of 17 jurisdictions (portions of about 28 communities/neighborhoods), divided into five main focus areas (see below). Population within this 70 square mile study area according to 2000 census data is 127,033 persons.

Community Demographics

Descriptions of communities/neighborhoods in the Eastern Corridor and associated demographic conditions and trends are presented in detail (by focus area) in the Eastern Corridor Vision Plan Economic Analysis (Economics Research Associates, January 2002) and in the Eastern Corridor Land Use Vision Plan (Meisner and Associates, May 2002). Summary information from these studies is presented in Table 4.9 below.





ECLUVP	Description of		General Focus		
Focus Area	Communities	1990 Census	2000 Census	Annual Change	Area Trends
	Oakley - mixed use with older commercial properties and institutions.	Population: 31,920	Population: 30,193	-0.6%	Population declined while households
	<u>Hyde Park</u> - mid to upper income homes with generally younger population compared to Oakley.	Households: 14,929	Households: 15,129	0.1%	increased from 1990 to 2000.
	<u>Evanston</u> - mostly residential with some vacant retail and commercial areas: includes	Ave. HH Size: 2.14	Ave. HH Size: 2.00	-0.8%	Contains severa disconnected areas of density,
Wasson Focus Area	Xavier University. <u>Columbia Township</u> – area of	Ave. HH Inc: \$39,136	Ave. HH Inc: n/a	n/a	population increase and
	commercial development along Ridge Road and Highland Avenue;	Male: 44.6% Fem: 55.4%	Male: 45.2% Fem: 54.8%	-0.5% -0.7%	decline, ethnicity and other factors
	<u>Norwood</u> – contains mid-rise office and retail space along I-71 (Rookwood Commons).	White: 72.4% Black: 26.8% Other: 0.9%	White: 69.8% Black: 26.9% Other: 3.3%	-0.9% -0.5% 15.4%	Lowest share of population unde 18 compared to
		Hispanic: 0.7% < 18: 20.0% > 65 17.7%	Hispanic: 1.5% < 18: 18.4% > 65: 15.2%	8.0% -1.5% -2.3%	other focus areas.
	<u>Madisonville</u> – struggling urban community with central commercial corridor, small lot	Population: 27,510	Population: 24,510	-1.3%	Population losse from 1990 to 2000.
	single family and mixed-use development. Fairfax – older residential suburb	Households: 11,333	Households: 10,910	-0.4%	Highest minority
	with well-kept middle-income homes; complex local road connections and careworn	Ave. HH Size: 2.43	Ave. HH Size: 2.25	-0.9%	compared to other focus areas.
Red Bank Focus Area	commercial strip along US 50. <u>Columbia Township</u> – narrow strip of unincorporated Hamilton	Ave. HH Inc: \$29,283	Ave. HH Inc: n/a	n/a	
	County characterized by mix of established residential	Male: 45.2% Fem: 54.8%	Male: 45.6% Fem: 54.4%	-1.2% -1.4%	
	neighborhoods. <u>Madeira</u> – large affluent residential suburb between	White: 45.4% Black: 53.7% Other: 0.8%	White: 41.9% Black: 54.6% Other: 3.5%	-2.1% -1.1% 15.8%	
	Silverton and Indian Hill.	Hispanic: 0.4% < 18: 25.0% > 65: 16.5%	Hispanic: 0.9% < 18: 24.0% > 65: 15.8%	7.7% -1.7% -1.8%	
	<u>Milford</u> - historic river town with commercial storefronts surrounded by aging residential	Population: 14,728	Population: 16,084	1.0%	Least dense compared to other focus
	areas; new retail development occurs along Exit 59, I-275 to SR	Households: 6,095	Households: 6,617	0.9%	areas.
Wooster Focus Area	131; <u>Miami Township</u> – Park 50 Tech Center along I-275 has low-rise	Ave. HH Size: 2.42	Ave. HH Size: 2.43	0.1%	Only focus area to experience increase in
	office and industrial flex buildings with land assets still available for development.	Ave. HH Inc: \$46,322	Ave. HH Inc: n/a	n/a	percentage of children as well increase in
	<u>Columbia Township</u> – mix of commercial and residential uses along US 50.	Male: 46.3% Fem: 53.7%	Male: 46.6% Fem: 53.4%	1.1% 0.9%	household size (mostly Terrace Park).

Table 4.9. Demographic Information for Communities in the Eastern Corridor Area ^[1]



ECLUVP	Description of		- General Focus			
Focus Area	Communities	1990 Census	2000 Census	Annual Change	Area Trends	
	<u>Terrace Park</u> – upper income suburb (small lots) along Little Miami River. <u>Indian Hill</u> – mid to high income suburb with large lots and	White: 98.6% Black: 1.0% Other: 0.4% Hispanic: 0.5% < 18: 24.0%	White: 97.4% Black: 1.2% Other: 1.4% Hispanic: 0.9% < 18: 26.2%	0.9% 3.2% 15.5% 8.4% 2.0%	Household incomes slightly lower than SR 32 focus area.	
	restricted accesses. <u>Mariemont</u> – historic planned community with attractive village center.	> 65 16.3%	> 65: 16.0%	0.8%	iocus alea.	
	<u>Anderson Township</u> – comprises majority of focus area; mostly suburban single-family	Population: 30,688	Population: 38,036	2.4%	Covers broadest geographic area.	
	residences and scattered agricultural land. <u>Little Miami River basin</u> - sod	Households: 11,116	Households: 14,692	3.1%	Has highest average household	
	farms and recreational areas along the LMR with restricted development due to floodplain,	Ave. HH Size: 2.76	Ave. HH Size: 2.59	-0.7%	income and largest average household size.	
Ohio SR 32	environmental, and access issues. <u>Newtown</u> – older community	Ave. HH Inc: \$46,879	Ave. HH Inc: n/a	n/a	Anderson Township has	
Focus Area	surrounded by expanding	Male: 48.9%	Male: 49.3%	2.5%	largest	
7.100	metropolitan Cincinnati; congestion and access issues.	Fem: 51.1% White: 98.6%	Fem: 50.7% White: 96.2%	2.3% 2.2%	population gains from 1990 to	
	<u>Union Township</u> – notable	Black: 0.5%	Black: 0.9%	8.6%	2000.	
	commercial development along	Other: 0.9%	Other: 2.9%	16.7%		
	SR 32 at Eastgate. Mt. Carmel/Summerside – west	Hispanic: 0.6% < 18: 28.0%	Hispanic: 1.1% < 18: 27.0%	8.5% 2.0%	Has smallest percentage of	
	of I-275; mostly suburban with	> 65: 7.4%	> 65: 9.0%	4.6%	elderly people	
	some higher density residential and commercial areas.				compared to other focus areas.	
	Cincinnati Central Business District (CBD) – at west end of focus area; includes multi-modal	Population: 18,630	Population: 18,210	-0.3%	Households increased from 1990 to 2000	
	hub being developed under	Households:	Households:		despite slight	
	Second Street. East End – composed of several	8,331	8,628	0.4%	decline in population,	
	separate neighborhoods along	Ave. HH Size:	Ave. HH Size:		possibly the	
Eastern	Eastern Avenue and new residential development between	2.24	2.11	-0.6%	result of new housing along	
Avenue / Lunken Focus	Columbia Parkway and the Ohio River. <u>Lunken Airfield</u> – general	Ave. HH Inc: \$35,332	Ave. HH Inc: n/a	n/a	the Ohio River. Most other trend	
Area	aviation airport surrounded by	Male: 46.5%	Male: 47.6%	0.0%	in this focus are	
	industrial areas (to west), high-	Fem: 53.5%	Fem: 52.4%	-0.5%	are typical of the	
	end establishments associated with marinas (to south) and	White: 95.3% Black: 3.9%	White: 92.9% Black: 4.4%	-0.5% 1.1%	Cincinnati regio overall.	
	recreational areas (to north).	Other: 0.8%	Other: 2.8%	13.8%	5.0.0	
	Linwood – north of Lunken	Hispanic: 0.5%	Hispanic: 1.1%	8.5%		
	Airfield and separated by topography and limited access.	< 18: 22.6% > 65: 15.6%	< 18: 20.6% > 65: 14.6%	-1.3% -1.0%		
	<u>California</u> – mostly single family	- 00. 10.070	- 00. 14.070	1.070		

Table 4.9. Demographic Information for Communities in the Eastern Corridor Area ^[1]



ECLUVP Focus Area	Description of		General Focus		
	Communities	1990 Census	2000 Census	Annual Change	Area Trends
	homes on small lots; separated from other areas by various features. <u>Mount Washington</u> – hilltop				
	community of mixed-income homes with generally older population				
	<u>Columbia-Tusculum</u> – historic community along Eastern Avenue overlooking Ohio River.				

Table 4.9. Demographic Information for Communities in the Eastern Corridor Area ^[1]
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^[1] Source: ECLUVP, Meisner and Associates, May, 2002; reported demographics are by focus area; all focus areas combined cover an approximately 70 square mile study area evaluated for the ECLUVP.

4.2.3. Employment and Economic Conditions

Employment in the project vicinity, i.e., in the approximately 165 square mile Eastern Corridor MIS study area encompassing portions of Hamilton and Clermont Counties, was about 103,000 persons employed in 1995, and is expected to increase to about 122,000 employed in the area by 2030 (a 19% increase).

Major employment and economic centers in the Eastern Corridor area are shown on Figure 2.11 and are previously described in Chapter 2 of this DEIS.

4.2.4. Community Facilities and Services

School Districts

The Eastern Corridor encompasses portions of six school districts as shown in Figure 4.10. Summary information for these districts is presented in Table 4.10 below.

Table 4.10. Eastern Corridor School Districts								
1999-2000 Data	State Average	Indian Hill	Mariemont	Cincinnati	Forest Hills	Milford	West Clermont	
State Rating (out of 27)	15	26	27	5	25	20	18	
State Designation		Effective	Effective	Academic Emergency	Continuous Improvemt.	Continuous Improvemt.	Continuous Improvemt.	
Enrollment	2,835	2,139	1,668	43,874	7,501	5,553	9,116	
Median HH Income	\$29,363	\$57,332	\$38,445	\$24,559	\$43,136	\$36,377	\$32,107	
Student / Teacher Ratio	18.1 / 1	15.7 / 1	16.5 / 1	18.0 / 1	19.8 / 1	20.7 / 1	19.7 / 1	
Spending per Pupil	\$7,057	\$10,606	\$8,336	\$8,170	\$6,462	\$6,200	\$5,484	



1999-2000 Data	State Average	Indian Hill	Mariemont	Cincinnati	Forest Hills	Milford	West Clermont
Local Funding Share	50.4%	86.0%	74.4%	52.0%	61.9%	57.9%	53.3%
Source: Ohio De	epartment of	Transportatior	۱				

Table 4.10. Eastern Corridor School Districts

Service (Police and Fire) Districts

The Eastern Corridor study area encompasses portions of 11 police districts, including City of Cincinnati Police Districts One, Two and Four, Village of Newtown Police Department, Union Township Police Department, City of Milford Police Department, Village of Mariemont Police Department, Clermont County Sheriff (serving Batavia Township), Village of Fairfax Police Department, City of Norwood Police Department, and the Hamilton County Sheriff (serving Anderson Township).

Fire divisions serving different portions of the Eastern Corridor include (10 total): City of Cincinnati Fire Department Districts 1 and 4, Newtown Fire Department, Anderson Township Fire and Rescue, Milford/Milford Township Fire Department, Batavia Township Fire Department, Mariemont Fire Department, Fairfax/Madison Place Fire Department, Norwood Fire Department and Union Township Fire Department.

4.2.5. Environmental Justice

Executive Order 12898 states that low-income and minority populations must be included in the planning process to promote nondiscrimination in Federal programs. Elderly and disabled populations are also considered when addressing environmental justice issues. Environmental Justice communities/populations in the Eastern Corridor Study Area were identified using 2000 Census Tract data in accordance with the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) Policy for Environmental Justice (OKI 2001). The Environmental Justice target groups identified in the Eastern Corridor Study Area are as follows: 1) minority, 2) low-income, 3) elderly, 4) persons with disabilities and 5) zero-car households. 2000 Census Tracts meeting target group criteria in the Eastern Corridor Study Area are identified in Figures 4.11 through 4.15. Assurance of thorough involvement of Environmental Justice communities and populations throughout the transportation decision-making process is further detailed in Chapter 6.

Key environmental justice populations/communities are scattered throughout the Eastern Corridor study area, including portions of downtown Cincinnati, Madisonville, Evanston/Norwood, Camp Dennison, East End, Oakley, Milford, Fairfax, Anderson Township, Mariemont, and Batavia. Environmental justice is further described in Chapter 6 of this DEIS.

4.3. CULTURAL RESOURCES

As described previously in this DEIS (Chapter 1), coordination was conducted with environmental resource agencies early in project development to determine the appropriate methods (level of effort) to be conducted for key environmental features (including cultural



resources) during Tier 1 of the Eastern Corridor project. The methods described here for cultural resources are based on environmental work plans developed during this agency coordination process.

Cultural resources methods conducted for Tier 1 are described in detail in Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives, Gray and Pape, Incorporated, December 30, 2002. Key tasks included the following:

- Development of comprehensive <u>historical contexts</u> for archaeological and history/architecture resources; these contexts consisted of two types – <u>county</u> contexts (for Hamilton and Clermont Counties) and <u>neighborhood</u> contexts (for specific communities in Hamilton and Clermont Counties within the Eastern Corridor study area). Overall, historical contexts will be used to support future resource-based recommendations including assessment of resource significance and eligibility during Tier 2 of the Eastern Corridor project and, for archaeological resources, to support the justification of alternative survey methods used during Tier 2 of the project,
- 2. For <u>history/architecture resources</u>, the findings of literature review, historical research, windshield survey and description of current condition of the built environment were used to identify properties in the Eastern Corridor study area that are currently listed in the National Register, and identify resources that may exhibit National Register potential (but specific determination of National Register eligibility not to be evaluated until Tier 2 [alignment specific] work).
- 3. For <u>archaeological resources</u>, the results of predictive modeling based on soils survey information, historic maps and previously recorded sites, were used to determine probability (sensitivity) for the presence of archaeological sites within the study area, designated as either high, medium, low or no (write-off) probability.

History/architecture and archaeological sensitivity information for the study area was organized and summarized by neighborhood (community-specific) historical contexts developed in Task 1 above.

More detailed field studies for history/architecture and archaeological resources (i.e., Phase I studies involving on-site data collection and determination of NR eligibility) will be conducted during Tier 2 of the Eastern Corridor study on a project-by-project basis.

Descriptions of existing cultural resources in the project study area based on Tier 1 studies is presented below.

4.3.1. Historical Contexts

Historical contexts were developed for Hamilton and Clermont Counties, and for neighborhood (community-specific) areas in these counties within the Eastern Corridor study area, and were presented in Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives, Gray and Pape, Incorporated, December 30, 2002.

In general, the historical contexts for Hamilton and Clermont Counties consist of a thematic base and include presentation of both prehistoric and historic periods. The prehistoric period



is presented in chronological segments from the Paleoindian occupation of Ohio and through the Archaic, Woodland, Mississippian and Protohistoric periods, and the historic period focuses on general patterns of historical development in Hamilton and Clermont Counties according to a series of themes including: American settlement, transportation, agriculture, industrial development, suburbanization, and architecture.

The historical contexts for specific neighborhoods and communities within the project study area include description of historical patterns of development for each community, and a summary of the archaeological and history/architecture resources occurring within each community's boundaries based on Tier 1 studies conducted for this project using the data collection methods described above. For Hamilton County, specific communities comprising in the historical context include the CBD-Riverfront, East End (including Fulton, Pendleton and Columbia-Tusculum), East Walnut Hills, Linwood, Avondale, North Avondale, Evanston, Norwood, Hyde Park, Oakley, Mt. Lookout, Columbia Township, Fairfax, Madisonville, Silverton, Mariemont, Anderson Township and Newtown. For Clermont County, specific communities include Milford, Union Township and Mt. Carmel.

4.3.2. National Register Architectural Resources

The National Register of Historic Places is the federal government's official list of properties recognized as worthy of preservation for their local, state or national significance in American history, architecture, archaeology, engineering or culture. The National Register, authorized under the National Historic Preservation Act of 1966, is a program of the U.S. Department of the Interior, National Park Service, and is administered at the local level by the Ohio Historic Preservation Office.

National Register architectural resources occurring within the boundaries of Eastern Corridor detailed study area identified during Tier 1 are summarized below:

- Approximately 151 previously inventoried architectural resources were identified within the study area boundaries; of these, 19 individual properties and five historic districts are currently listed in the National Register of Historic Places (NR or NRHP); these NR historic resources are shown on Figure 4.16.
- Of the 19 NR Individual Properties:
 - Nine are located in the East End/Columbia-Tusculum area (Police Station No. 6, Houston House, LuNeack House, Hoodin Building, Spencer Town Hall, Stites House, McKinley School, Fulton-Presbyterian Cemetery, and Columbia Baptist Cemetery),
 - Three are located in Newtown (Joseph Martin House, Odd Fellow's Cemetery Mound and William Edwards Farmhouse),
 - Three are located in the CBD-Riverfront area (Roebling Suspension Bridge, Showboat Majestic [see above] and Louisville and Nashville Railroad Bridge),
 - Two are located in the Mariemont/Fairfax area (Joseph Ferris House and Mariemont Embankment and Village Site),
 - One is located in Evanston (Coca-Cola Bottling Corporation), and



- o One is located in Milford (Promont House).
- The five <u>NR Historic Districts</u> include: Lytle Park Historic District (downtown Cincinnati), Columbia-Tusculum Historic District, Mariemont Historic District, Madison-Stewart Historic District, and the Cincinnati Gas Lamps District (covers several communities).
- Of the National Register architectural resources occurring within the study area boundaries, six are potentially impacted by the feasible alternatives under consideration within the Eastern Corridor. These potentially impacted resources are described below, and potential impacts are summarized in Chapter 5.3.3 of this DEIS.
 - <u>Mariemont Historic District</u>: The Mariemont Historical District was listed on the National Register of Historic Places in 1979 as a premier planned community and association with important planners and architects. Fairfax, Columbia Township, and the Little Miami River bind the historic district. The Architectural District consists, in general, of properties containing buildings designed specifically for the planned community of Mariemont as built by Mary Emery in the 1920s, the business district in Old Town, the present Village Square, certain parks within the village including the islands on Wooster Pike, and the original street lighting. The Village of Mariemont is also listed as a Native American archaeological site.
 - <u>Cincinnati Street Gas Lamps District</u>: The Cincinnati Street Gas Lamps District encompasses gas lamps at various locations throughout the city, centered in the Hyde Park, Evanston and Oakley neighborhoods of Cincinnati. The street lamps represent a 19th century landscape. The district was listed on the National Register of Historic Places in 1978.
 - <u>Hoodin Building</u>: The Hoodin Building is located on Eastern Avenue in Columbia-Tusculum. The site was listed on the National Register of Historic Places in 1979 as an architecturally significant resource and part of the Columbia-Tusculum Multiple Resource Area. The period of significance for this site is from 1875-1899.
 - <u>Columbia Baptist Cemetery (Memorial Pioneer Cemetery)</u>: The Columbia Baptist Cemetery is located on the north side of Wilmer Road and east of Airport Road in Columbia-Tusculum. The cemetery is the oldest in Hamilton County with gravestones dating from 1797 to 1890. The cemetery contains the graves of Columbia's first settlers and is associated with the Columbia Baptist Church, which was the first congregation in the Northwest Territory. This site is the final resting place of Revolutionary and Civil War veterans. This site was listed on the National Register in 1979. The Cincinnati Park Board currently maintains the cemetery.
 - <u>Fulton-Presbyterian Cemetery</u>: The Fulton-Presbyterian Cemetery is located off of Carrel Street in the East End neighborhood. The cemetery was listed on the NRHP in 1979. This site is associated with military and social history and is one of the first cemeteries in Columbia. The gravestones at this cemetery date back to the early 1800's. The cemetery is currently abandoned and in disrepair.
 - <u>Odd Fellow's Cemetery Mound</u>: Odd Fellow's Cemetery Mound (also known as Mound no.9, Group C) was added to the National Register of Historic Places in 1973. The cemetery is located in Newtown on Round Bottom Road and is built around an old Adena burial mound. This site is listed on the National Register as yielding Prehistoric information and cultural affiliation. The cemetery was historically used as a burial mound. The Flagspring Cemetery, another Odd Fellows cemetery, is an active cemetery located at the same site of the burial mound.



4.3.3. National Register Archaeological Resources and Archaeological Sensitivity

Key findings from Tier 1 archaeological studies for the project include the following:

- Approximately 63 previously inventoried archaeological features occur within the study area boundaries; two of these are archaeological districts currently listed on the National Register, including the Hahn Field Archaeological District and the Perin Village Site. Both are located in the Newtown vicinity, as shown on Figure 4.16, and described below. Both are potentially impacted by the feasible alternatives under consideration within the Eastern Corridor, as summarized in Chapter 5.3.3.a of this DEIS.
 - O Hahn Field Archaeological District: The Hahn Field Archaeological District is located north of SR 32 on the northwest side of Newtown. The rectangular-shaped district covers approximately 690 acres. The district was listed on the National Register in 1974. The district's historic use includes burials and a range of activity areas dating to the late Woodland and Fort Ancient cultural periods. The district is multi-component containing a number of concentration areas. This site once contained at least two mounds that are no longer present. Excavations have revealed burial sites and a range of additional features within the district boundaries. The Hahn Field Site Cemetery, once located on the floodplain of the Little Miami River, is a previously recorded archaeological site that is part of the archaeological district. Currently, the majority of the area is primarily used for agriculture and recreation activities. Further studies conducted during Tier 2 will be required to determine the occurrence and location of archaeological resources present in this area, and possible refinement of the National Register boundaries may be proposed for this site.
 - <u>Perin Village Site</u>: Perin Village is located in Newtown in Hamilton County west of Church Street and Valley Avenue. The site was listed in the NRHP in 1977 as an extensive Middle Woodland period and Hopewell village site. Currently, this site is used as a golf center.
- Assessment of the potential for the presence of archaeological sites within the detailed study area (using methods noted above) indicates that approximately 40% of the study area has high probability for archaeological resources, 14% has moderate probability, 20% of the area has low probability and 26% of the detailed study area can be considered write-off (highly disturbed) (see Figure 4.17). Communities with a concentration of high probability areas for archaeological sites within the detailed study boundaries (>50%) include East End, Mariemont, Anderson Township, and the proposed Madisonville bus hub area. Communities with a concentration of low probability and write-off areas within the detailed study boundaries (>50%) include Oakley, Fairfax, Madisonville, Union Township and the proposed Milford bus hub and Anderson bus hub areas. The Village of Newtown has approximately 50% high probability and 50% low probability/write-off for archaeological potential within the detailed study area boundaries.

Archaeological Probability in the Little Miami River Crossing Area

The crossing of the Little Miami River (LMR) by the relocated SR 32 alternative raises several environmental and cultural resource issues. Due to the highly sensitive nature of this area and unique archaeological conditions, a preliminary evaluation of the Little Miami River floodplain area in the vicinity of the project was conducted to identify an expected distribution of archaeological sensitivity, as documented in Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives (Gray and Pape, December 2002).



Gray and Pape (December 2002) reports that there are over twenty previously recorded archaeological sites along the Little Miami River floodplain in the project vicinity, yet the extents of the sites are not well documented. More archaeological sites are likely to be in the area than site forms indicate. Their preliminary conclusions regarding the likelihood of encountering archaeological resources along the Little Miami River floodplain in the project vicinity vicinity include the following:

- there is a low archaeological probability in the western meander zone of the project study area (Horseshoe Bend area),
- there is a moderate-high to high probability for prehistoric and historic cultural resources in remaining portions of the floodplain within the project study area, and
- cultural resources can be expected to occur and buried resources are likely to occur.

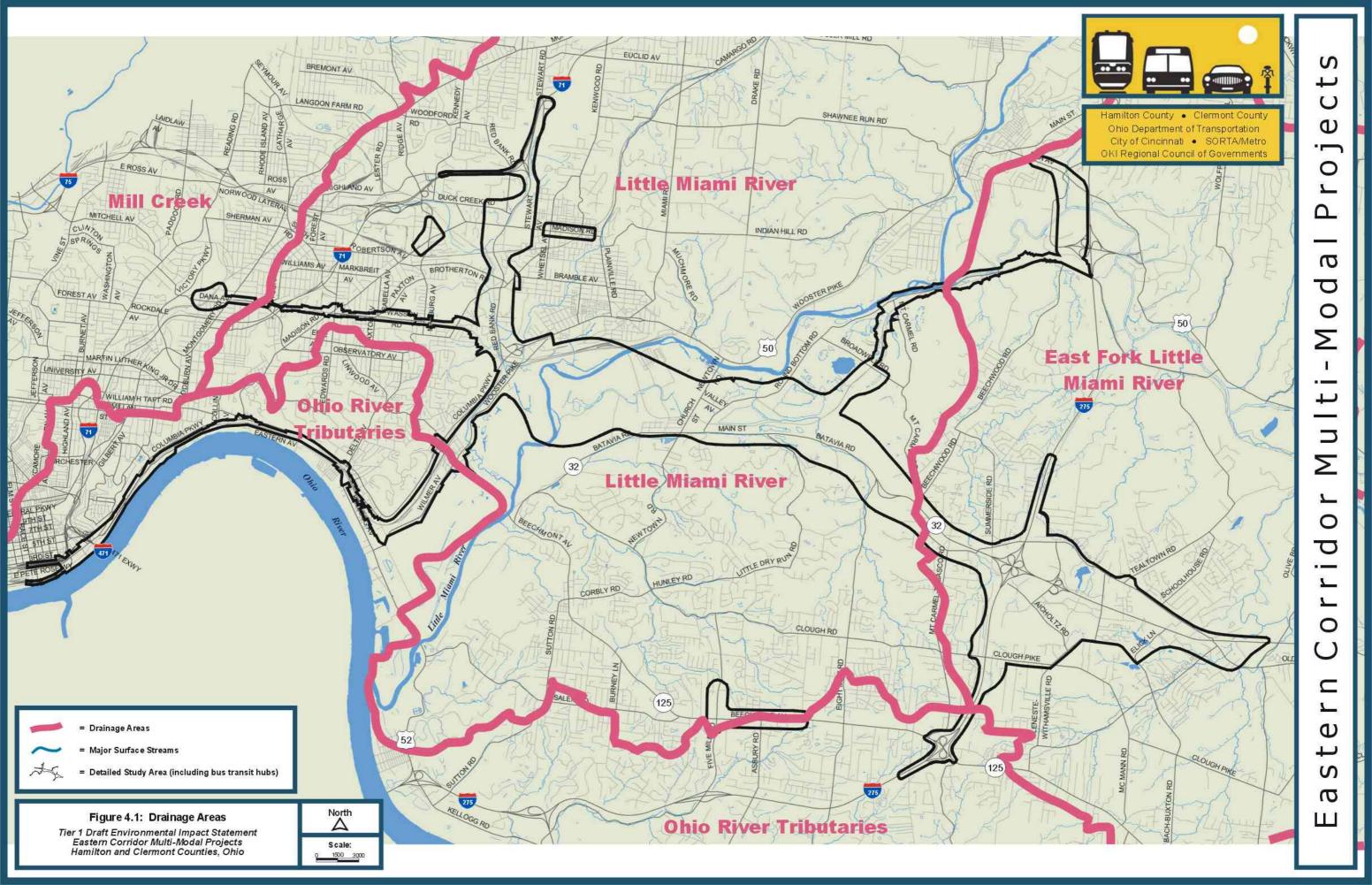
4.3.4. Other Cultural Resources

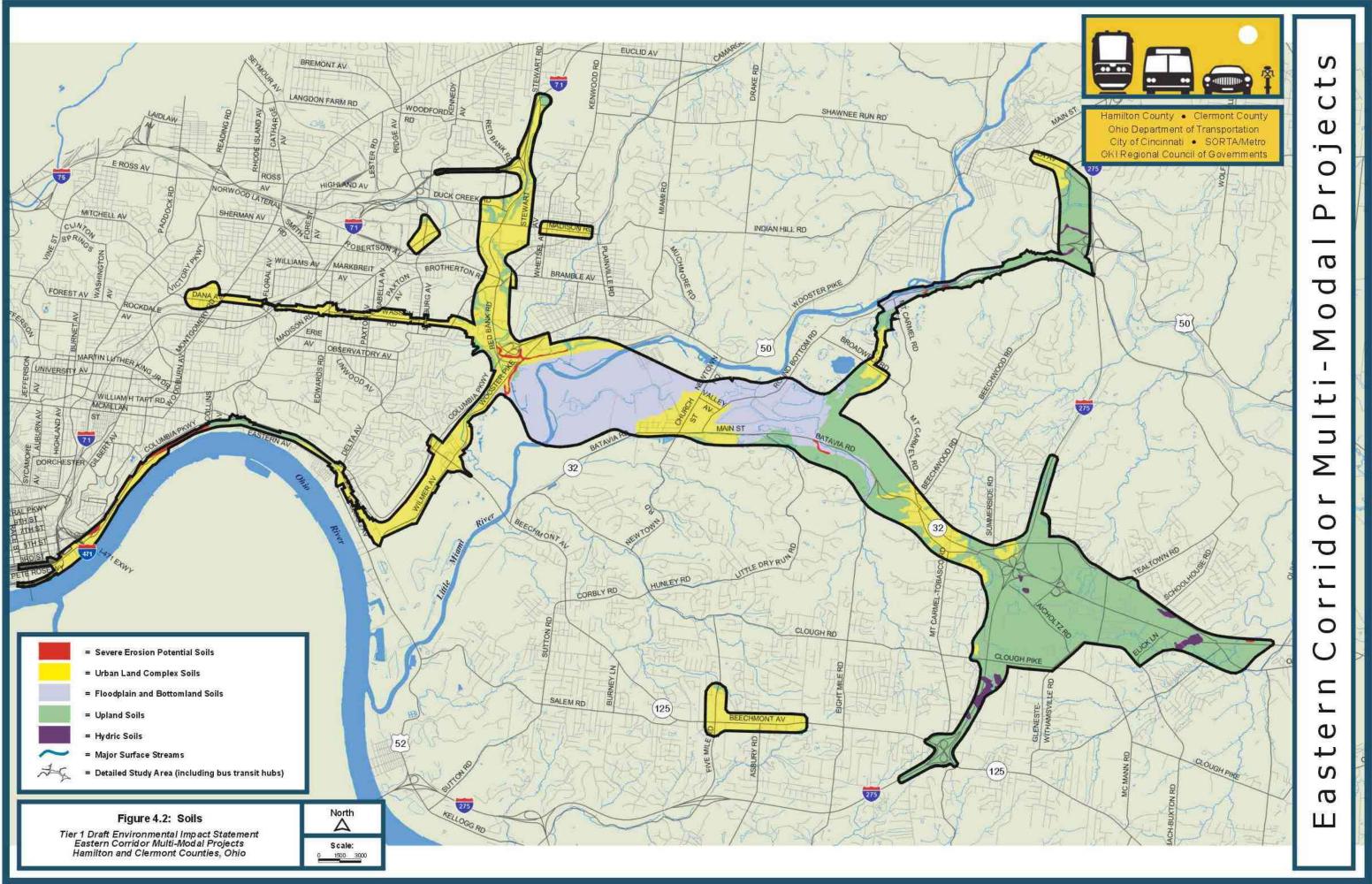
Approximately 60 other cultural resources that are not currently listed on the National Register were also identified in the study area boundaries (see Figure 4.18). Included in this category are previously inventoried historic sites (Ohio Historic Inventory sites), previously inventoried archaeological sites (Ohio Archaeological Inventory sites), and sites exhibiting potential NR characteristics, as identified during Tier 1 cultural resources field studies and presented in Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives, Gray and Pape, Incorporated, December 30, 2002.

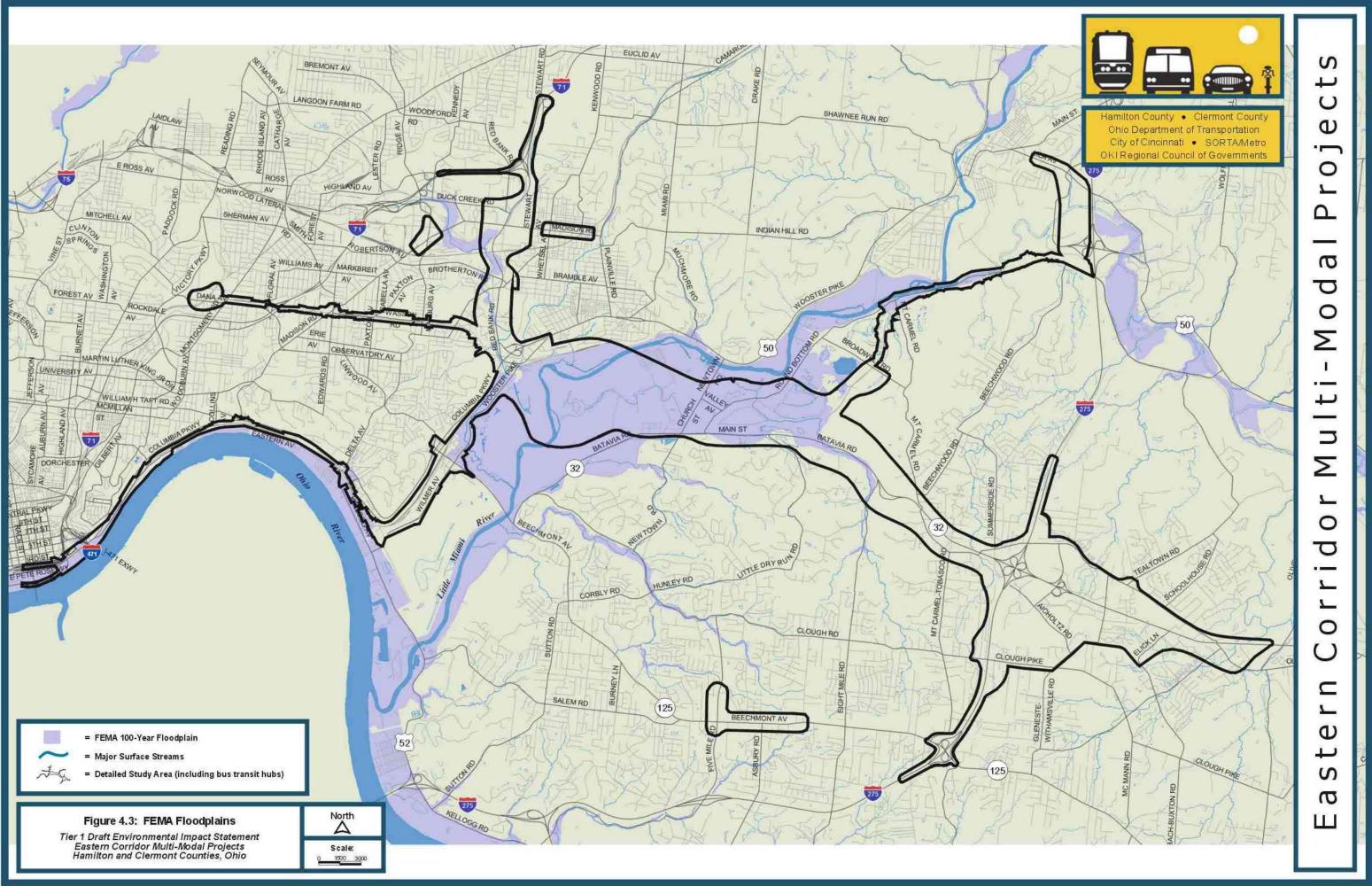
It is not known if any of these other cultural resources are eligible for the National Register. Additional Phase I field work and final assessment for any impacted features will be conducted during Tier 2 on a project-by-project basis. The locations of these other cultural resources are shown on Figure 4.18 (Note: the location of individual archaeological sites are not shown since this information is environmentally sensitive).

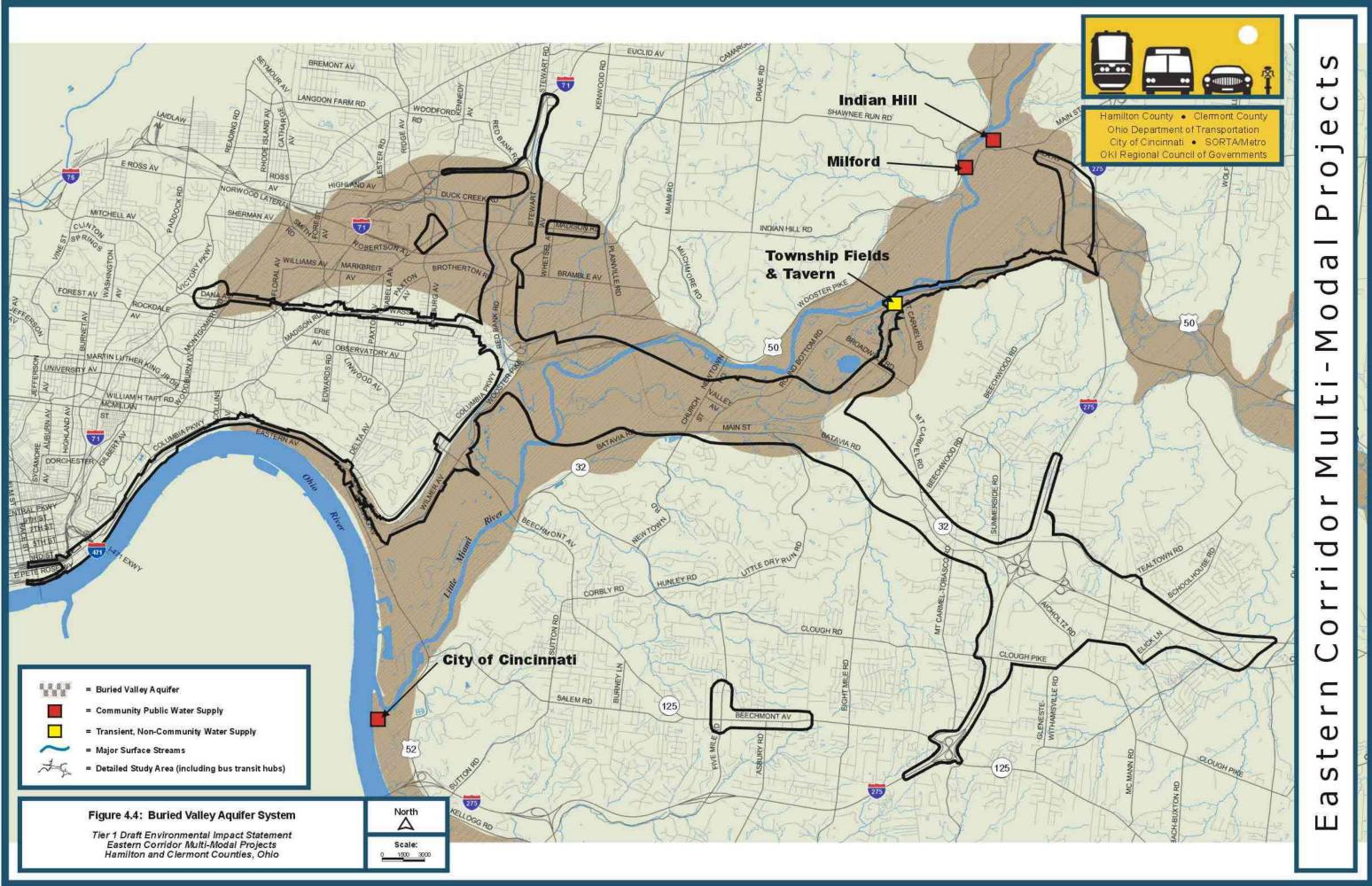
Historic Bridges

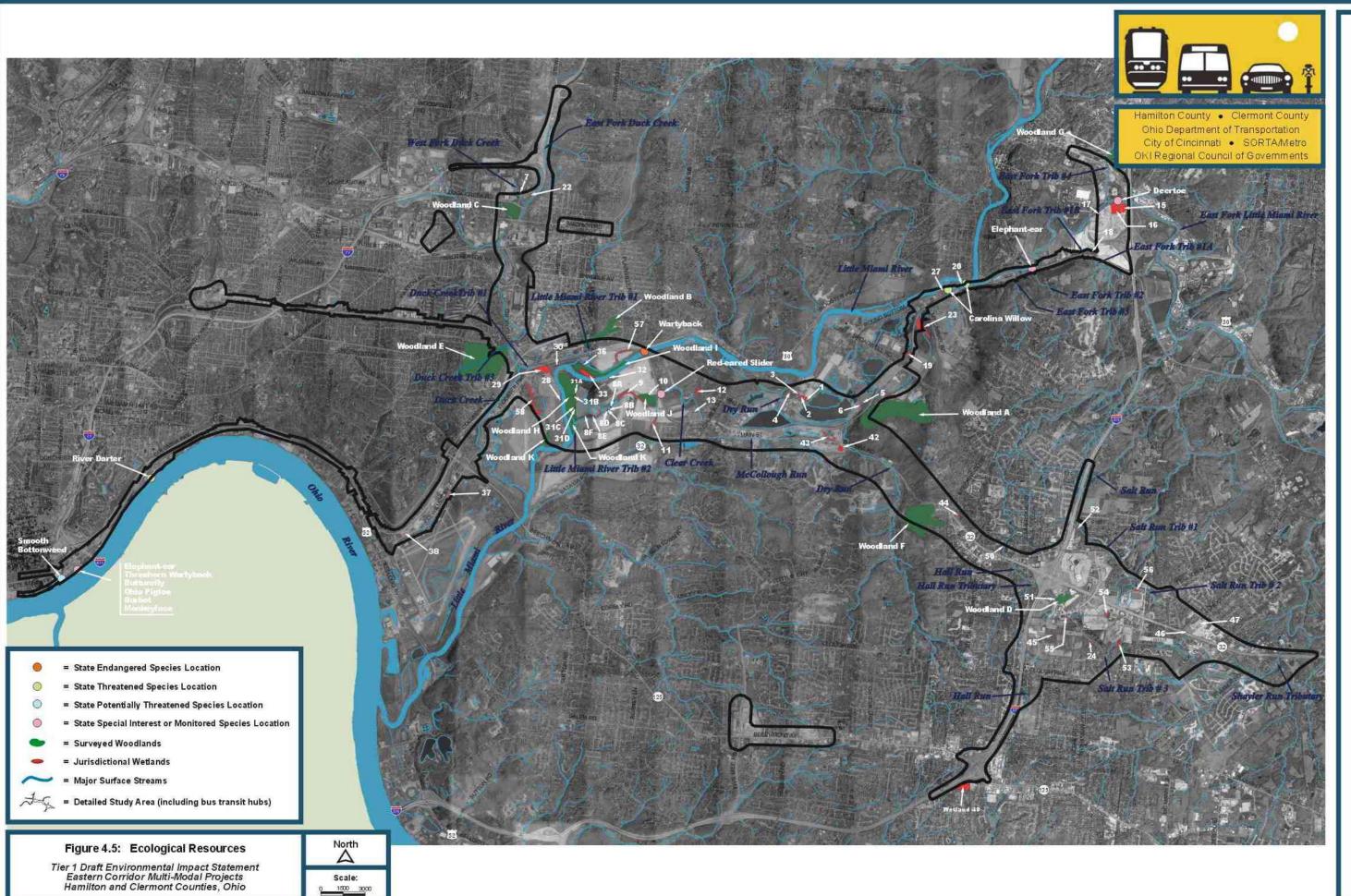
The Second Ohio Historic Bridge Inventory, Evaluation and Preservation Plan (Ohio Department of Transportation, 1990) was reviewed to determine if any structures listed or identified as eligible for listing in the National Register are located in the project detailed study area. Overall, 12 bridges in Hamilton County and 3 bridges in Clermont County are included in the Ohio Historic Bridge Inventory. Only one of these, the Roebling Suspension Bridge, occurs within the Eastern Corridor detailed study area; this structure is currently listed in the National Register, as noted in Chapter 4.3.2 above. No other National Register, Selected, or Reserve Pool structures listed in the Historic Bridge Inventory occur in the detailed study area.



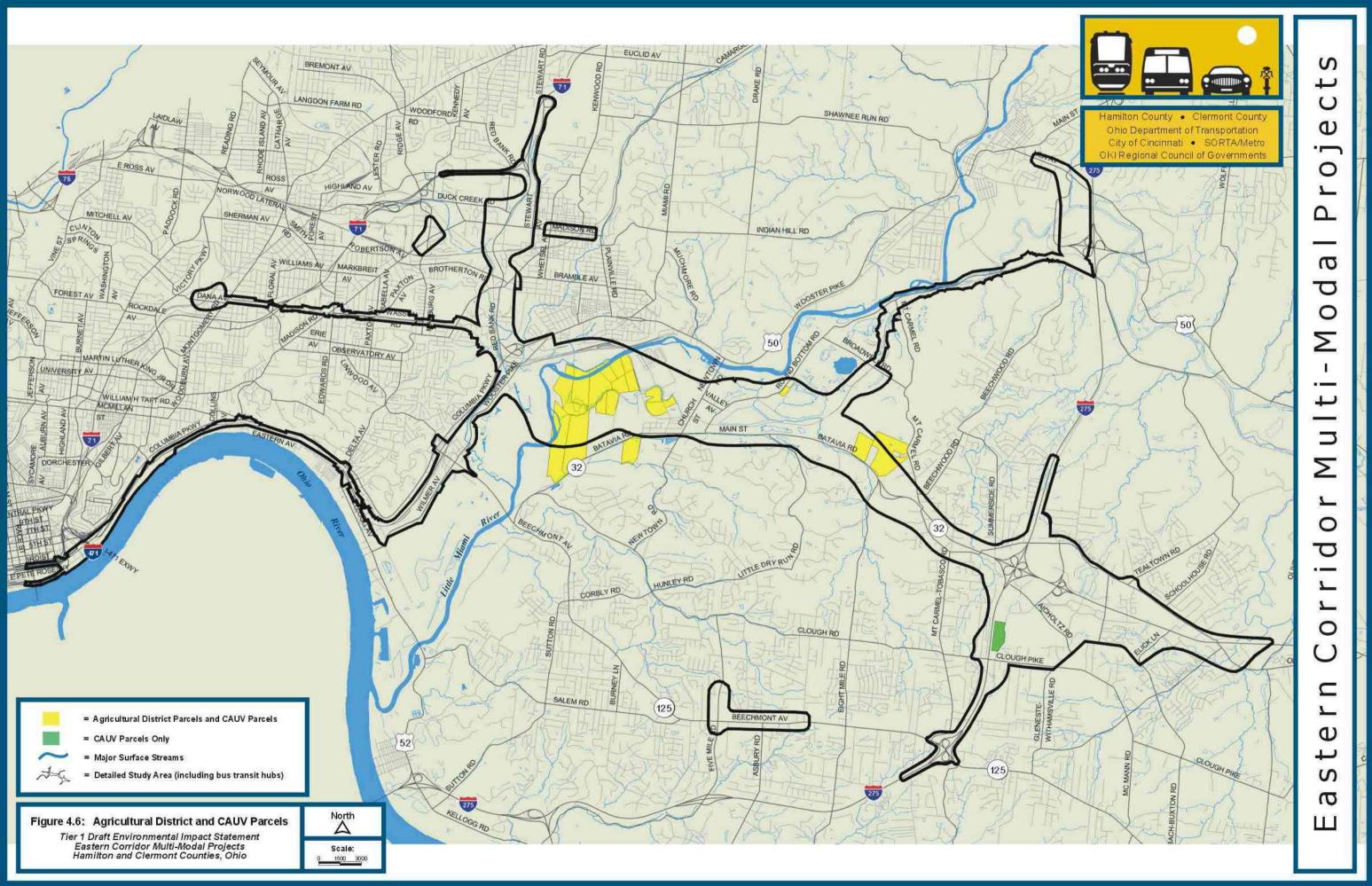


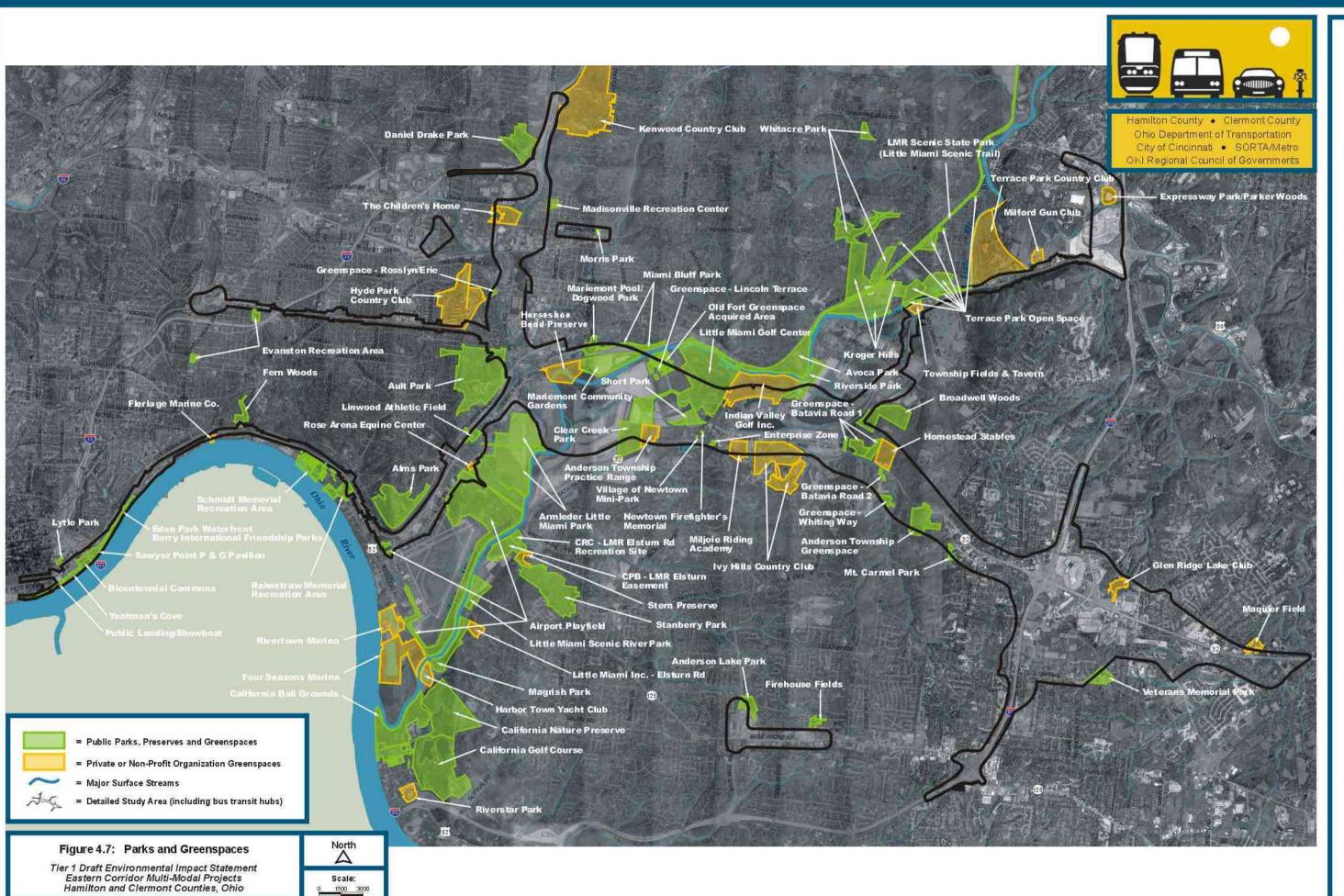




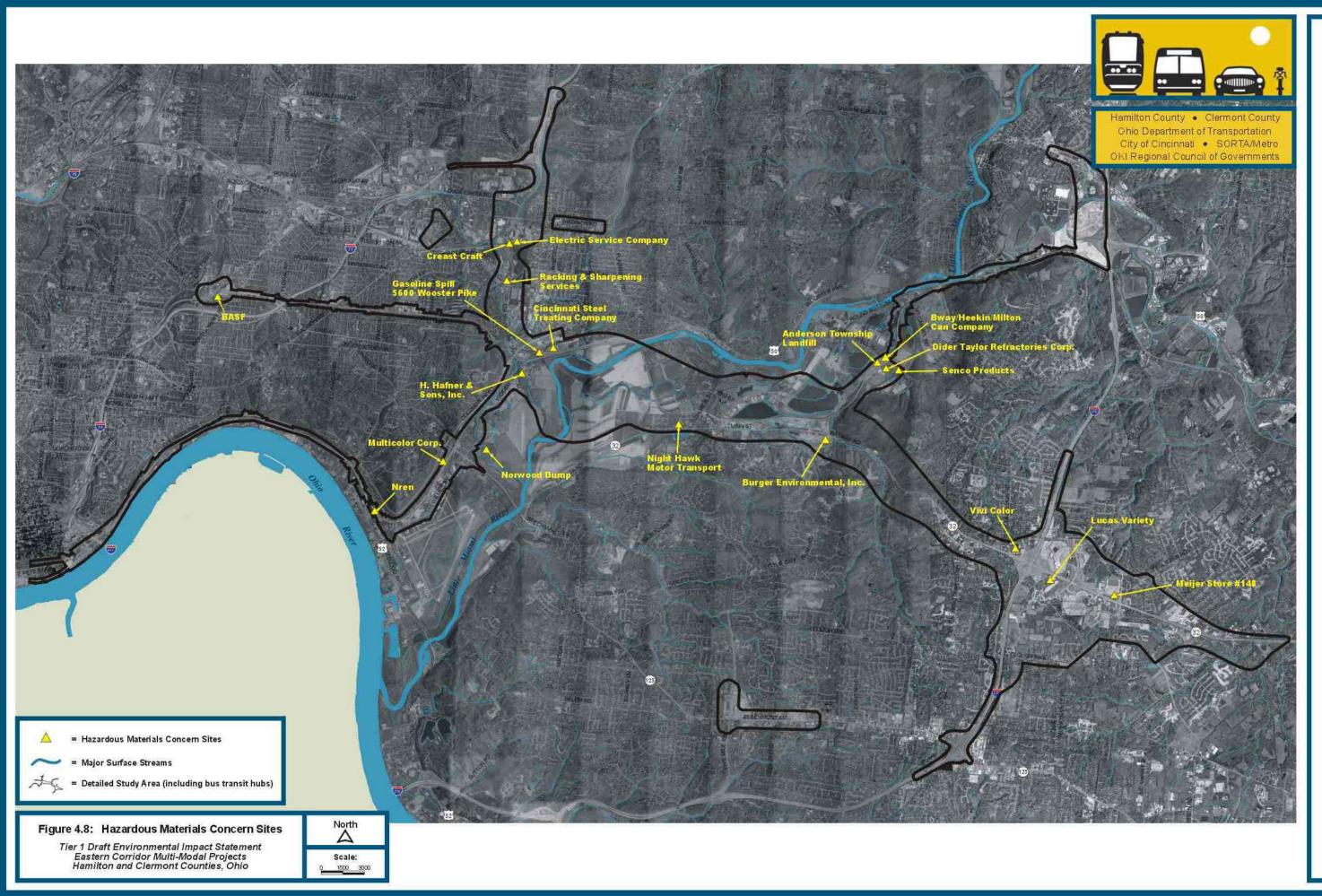


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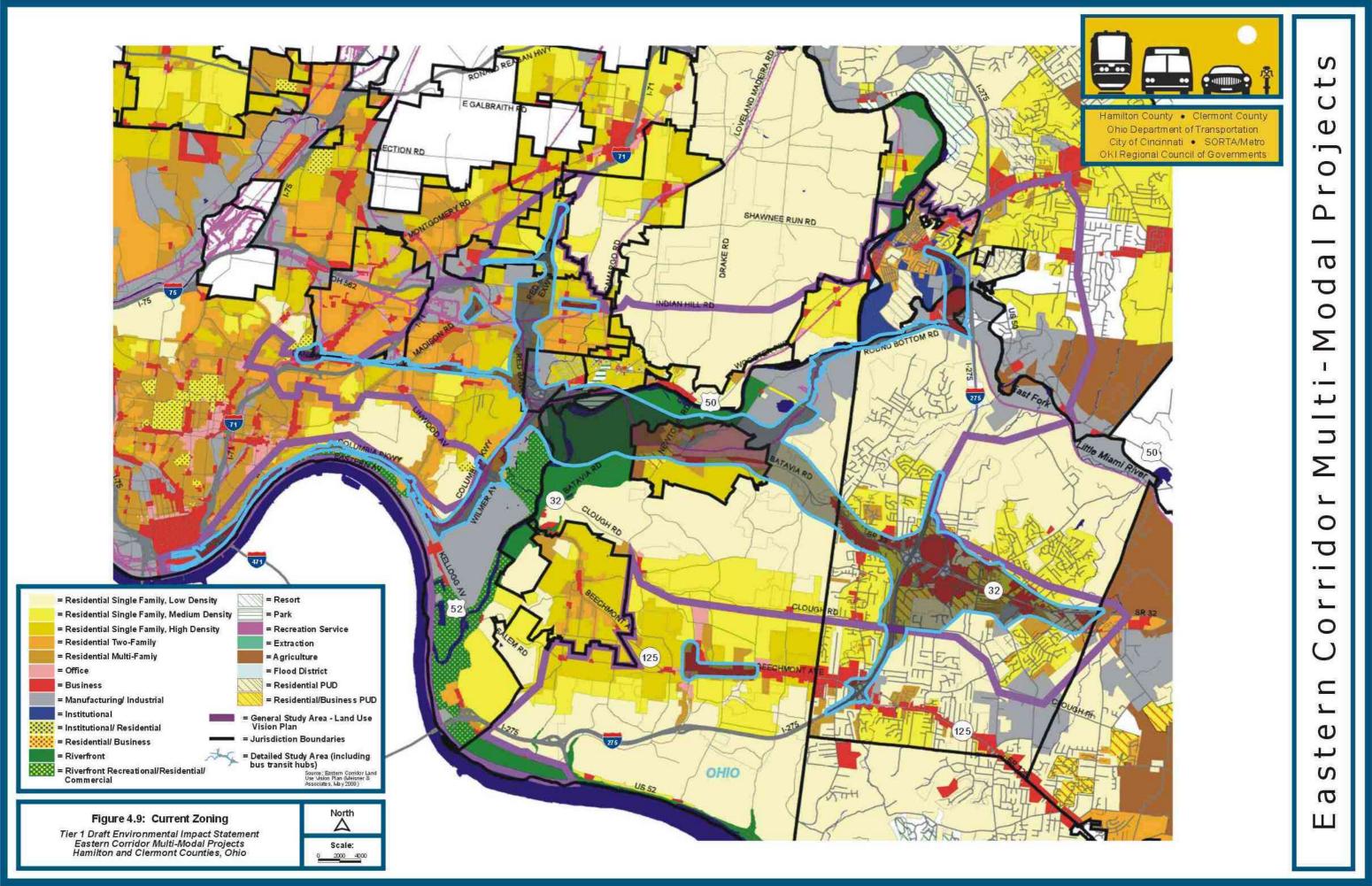


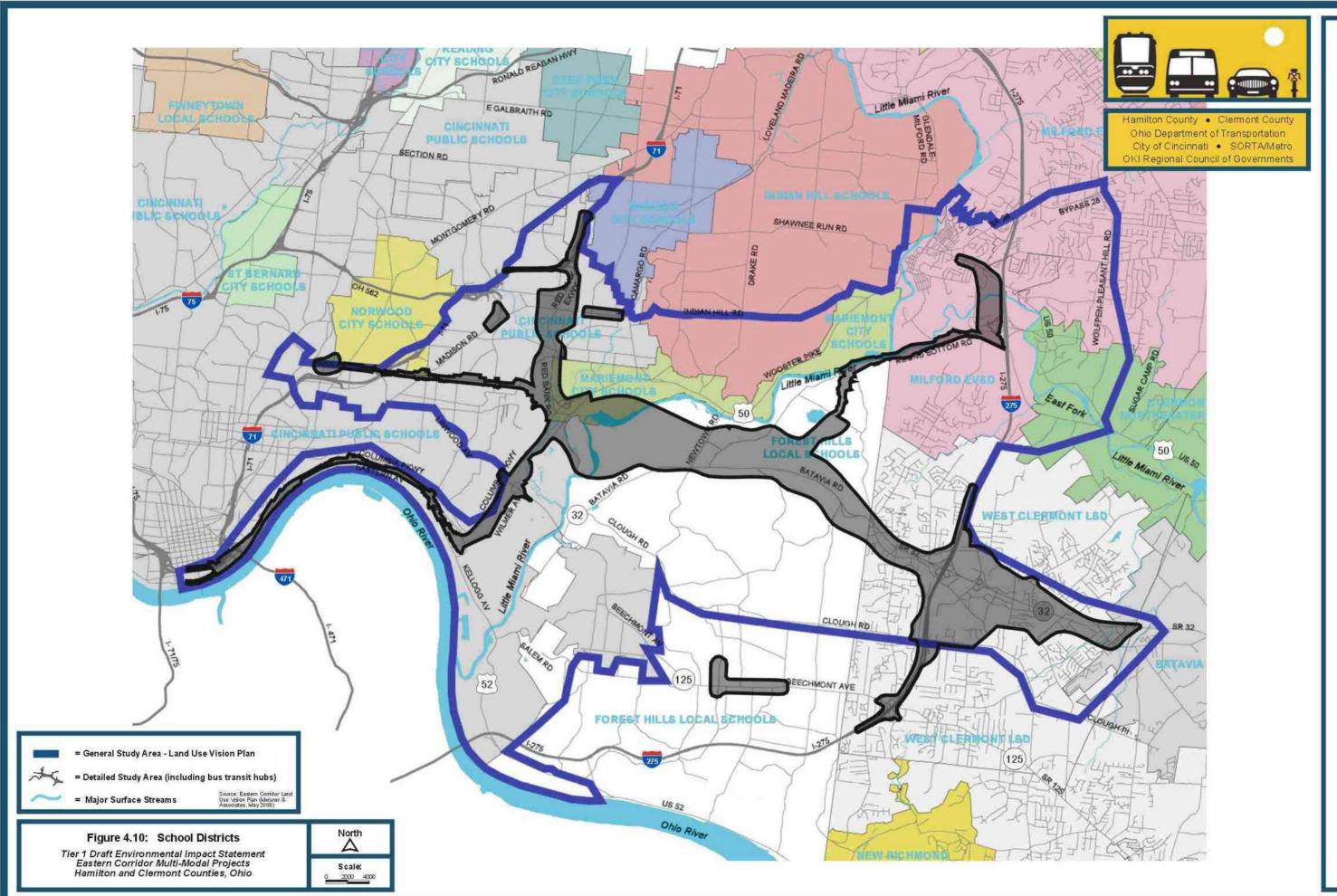


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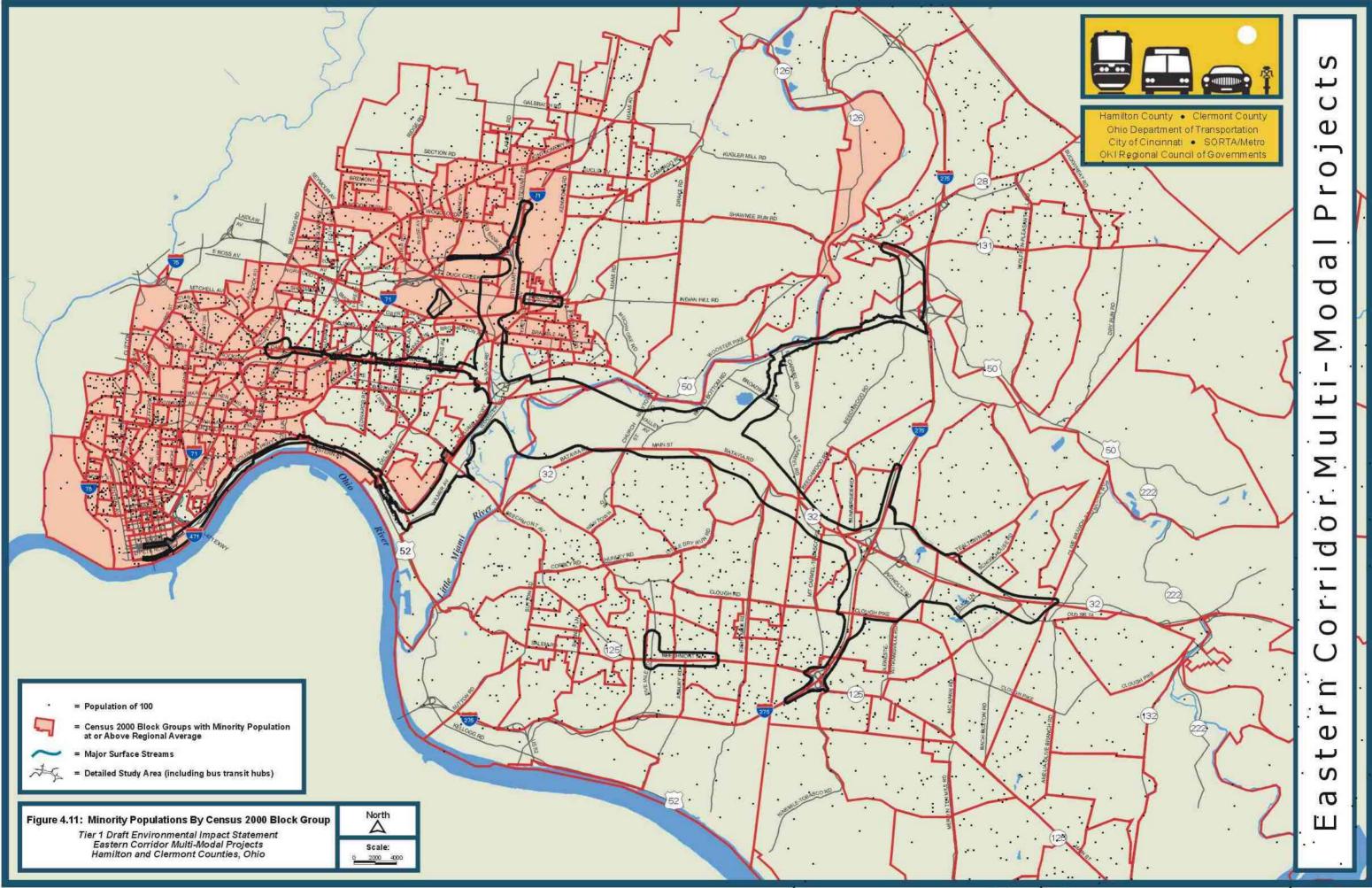


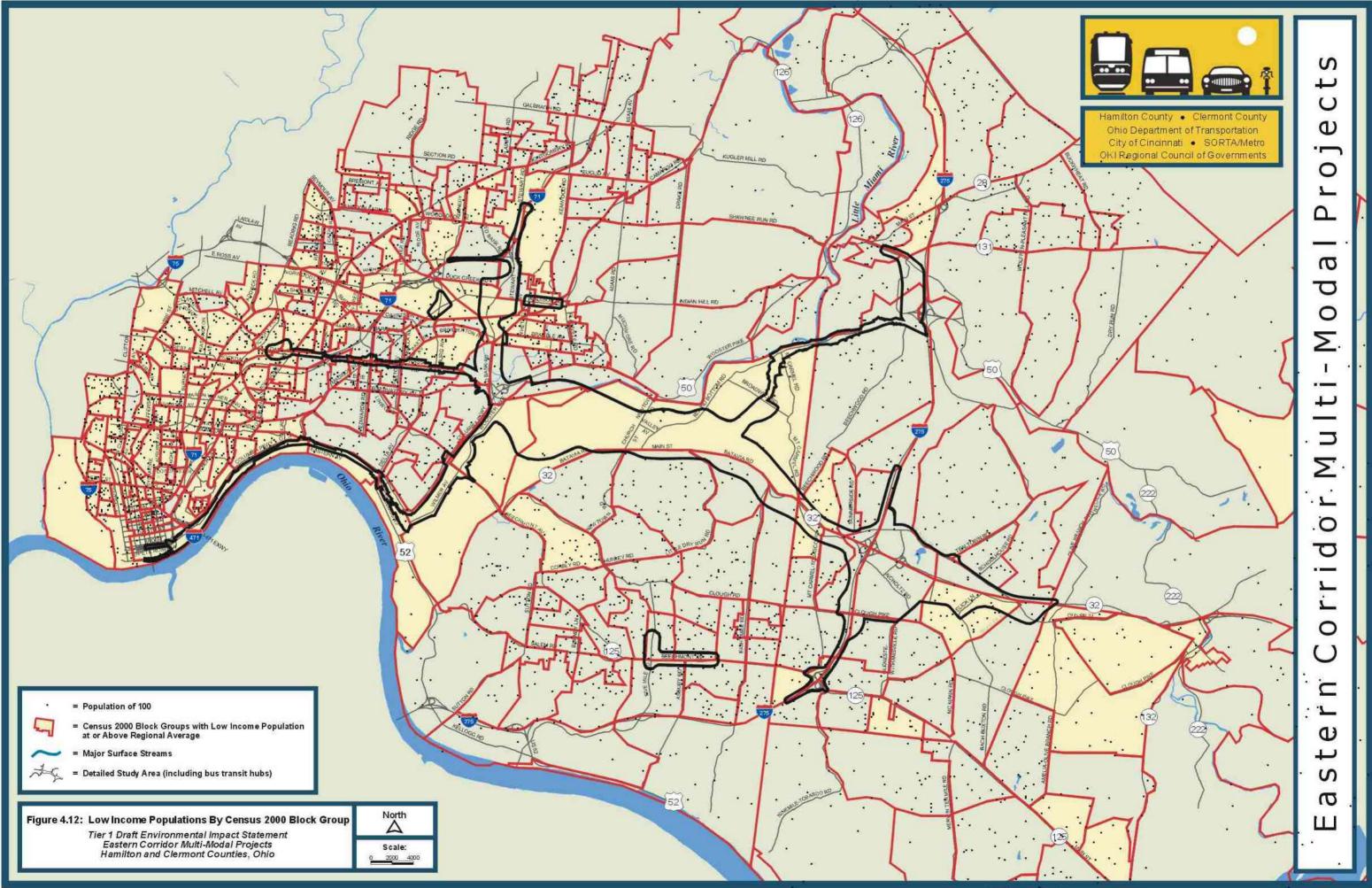
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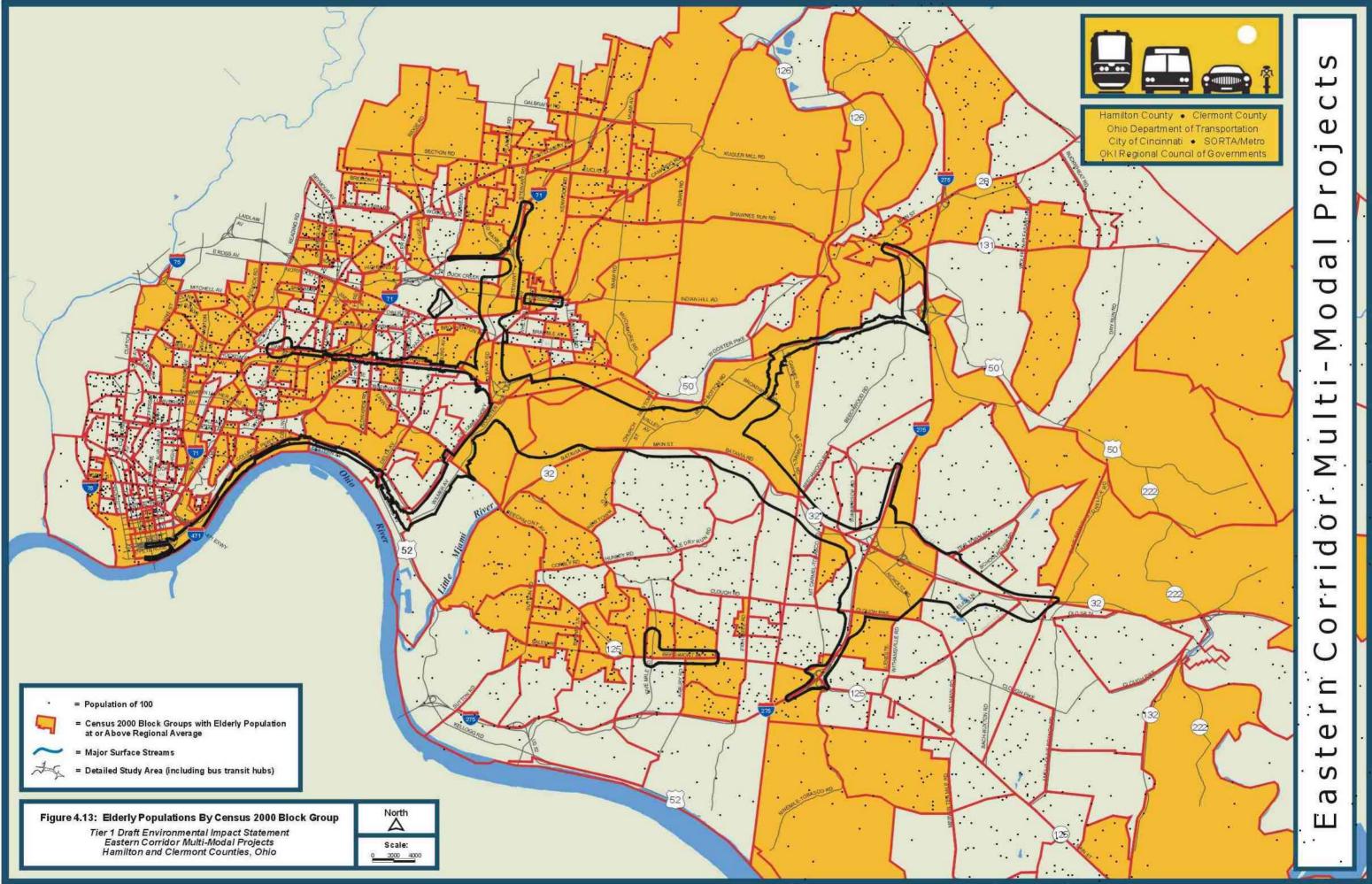


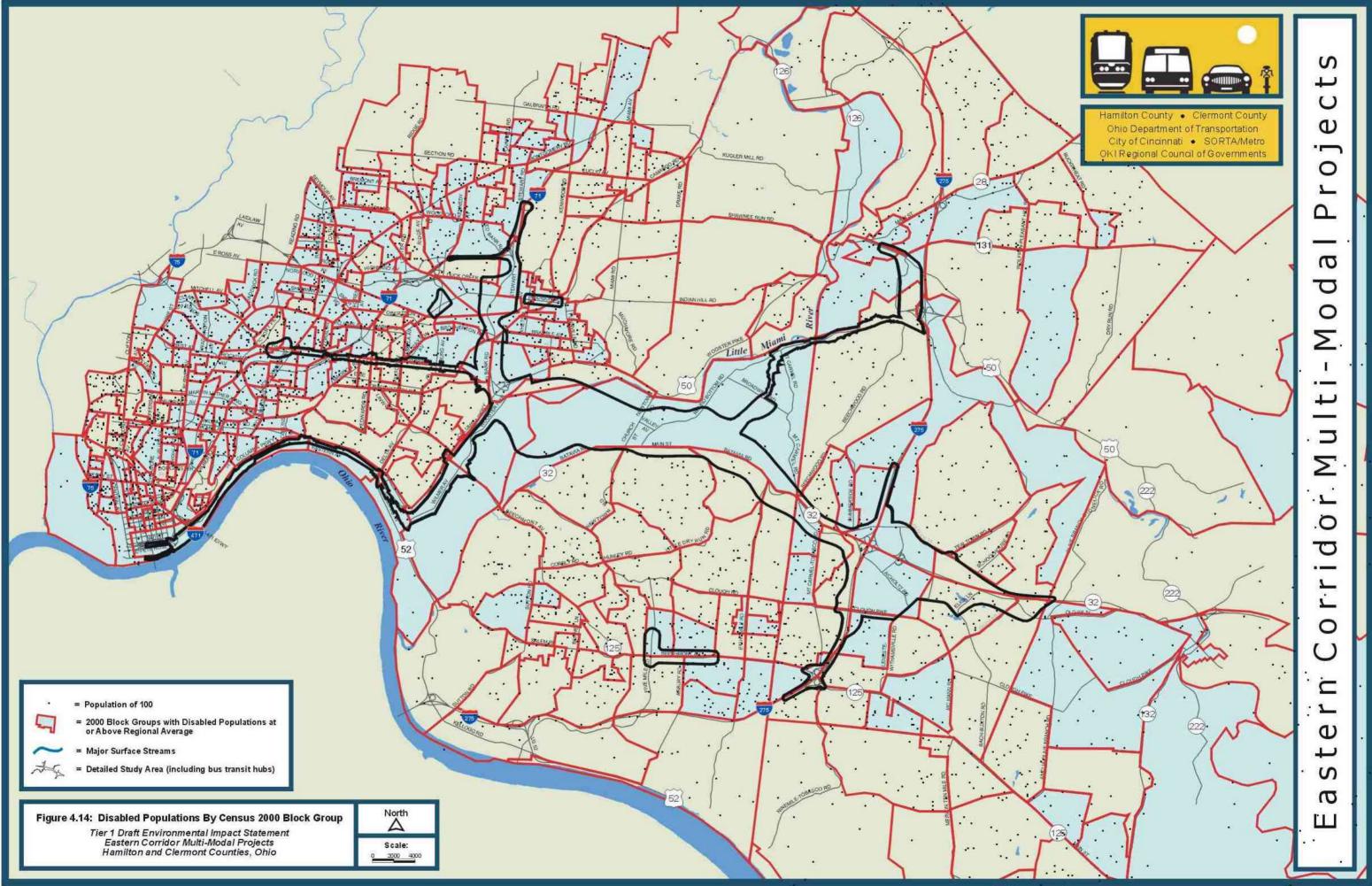


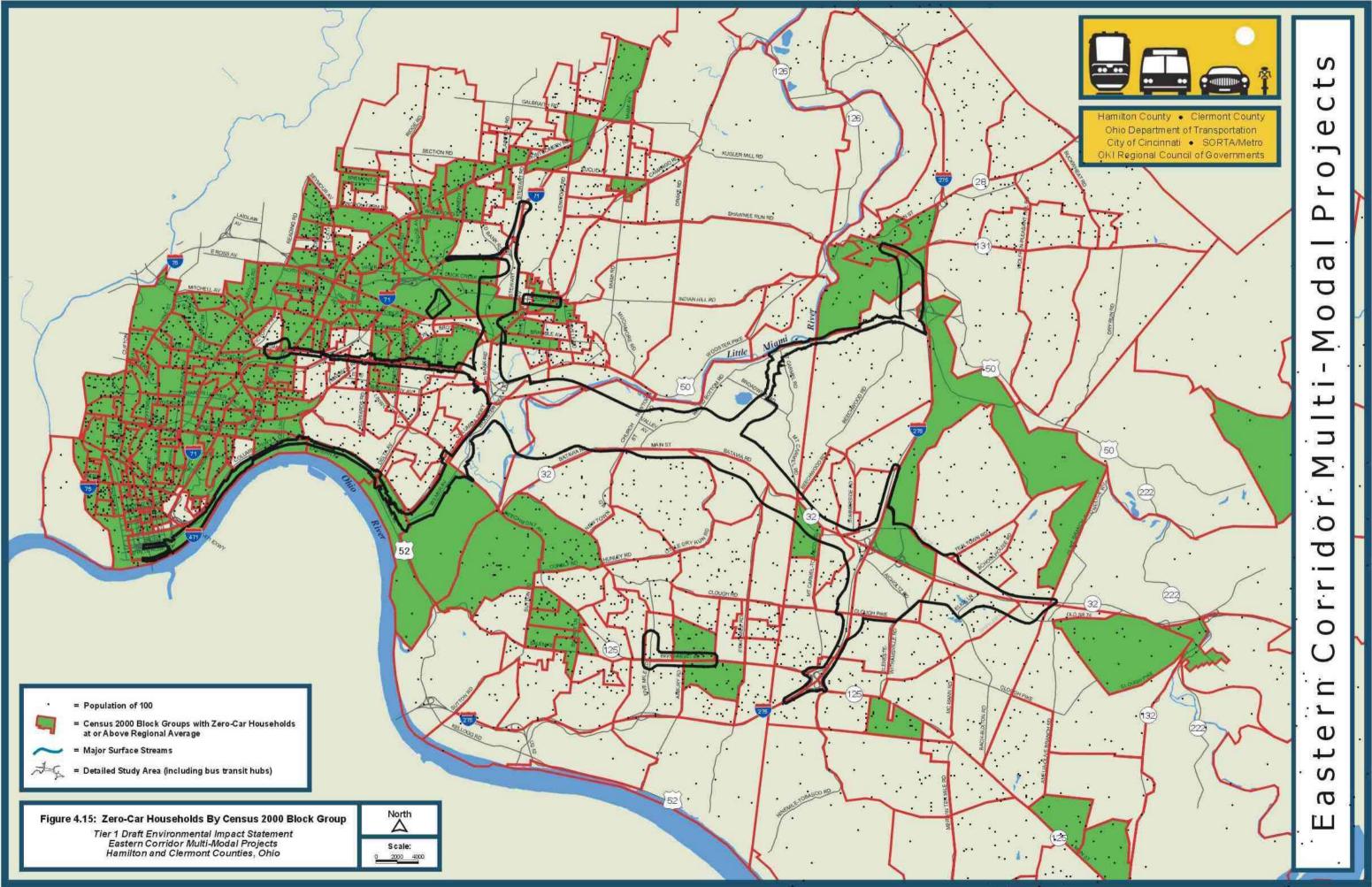
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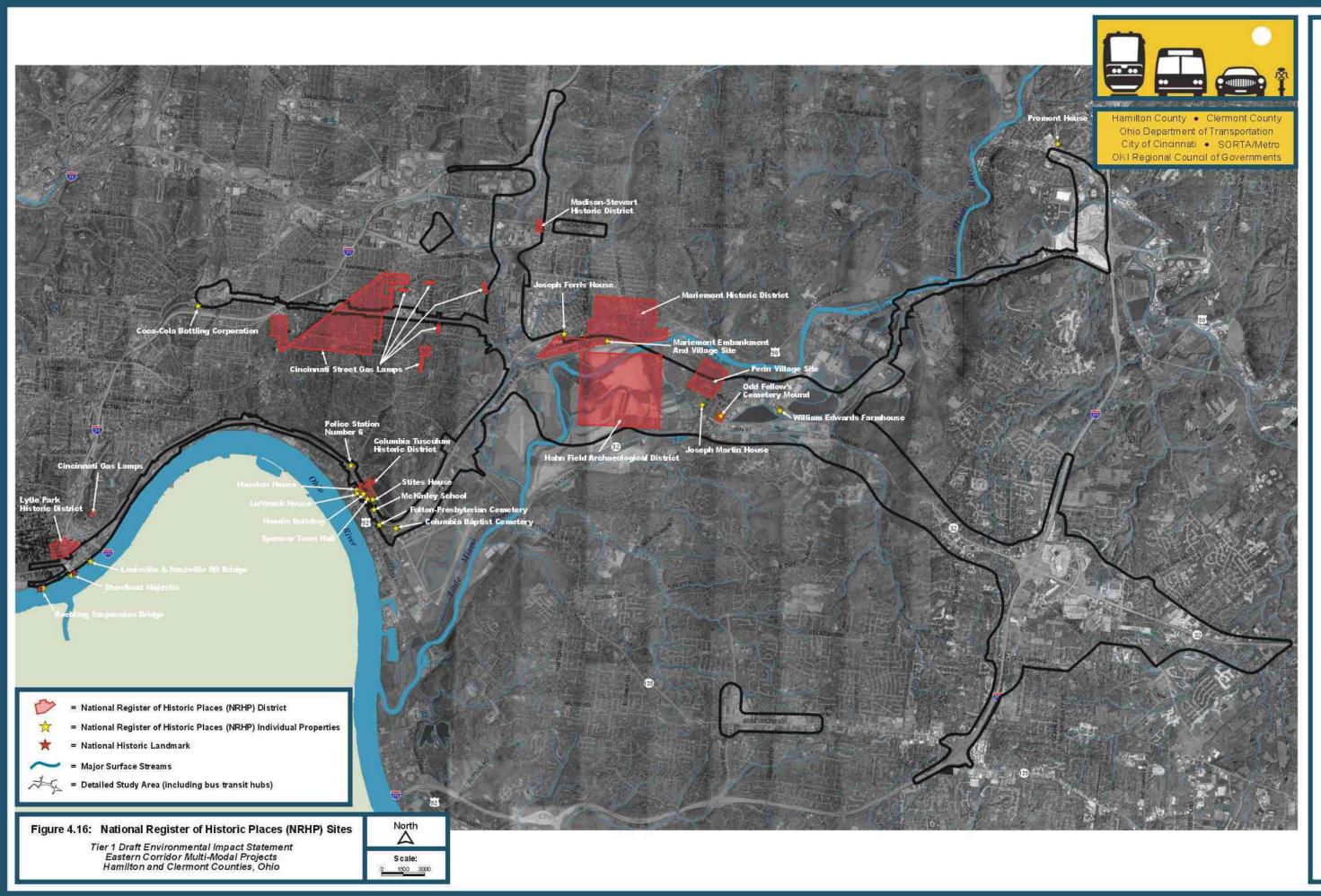




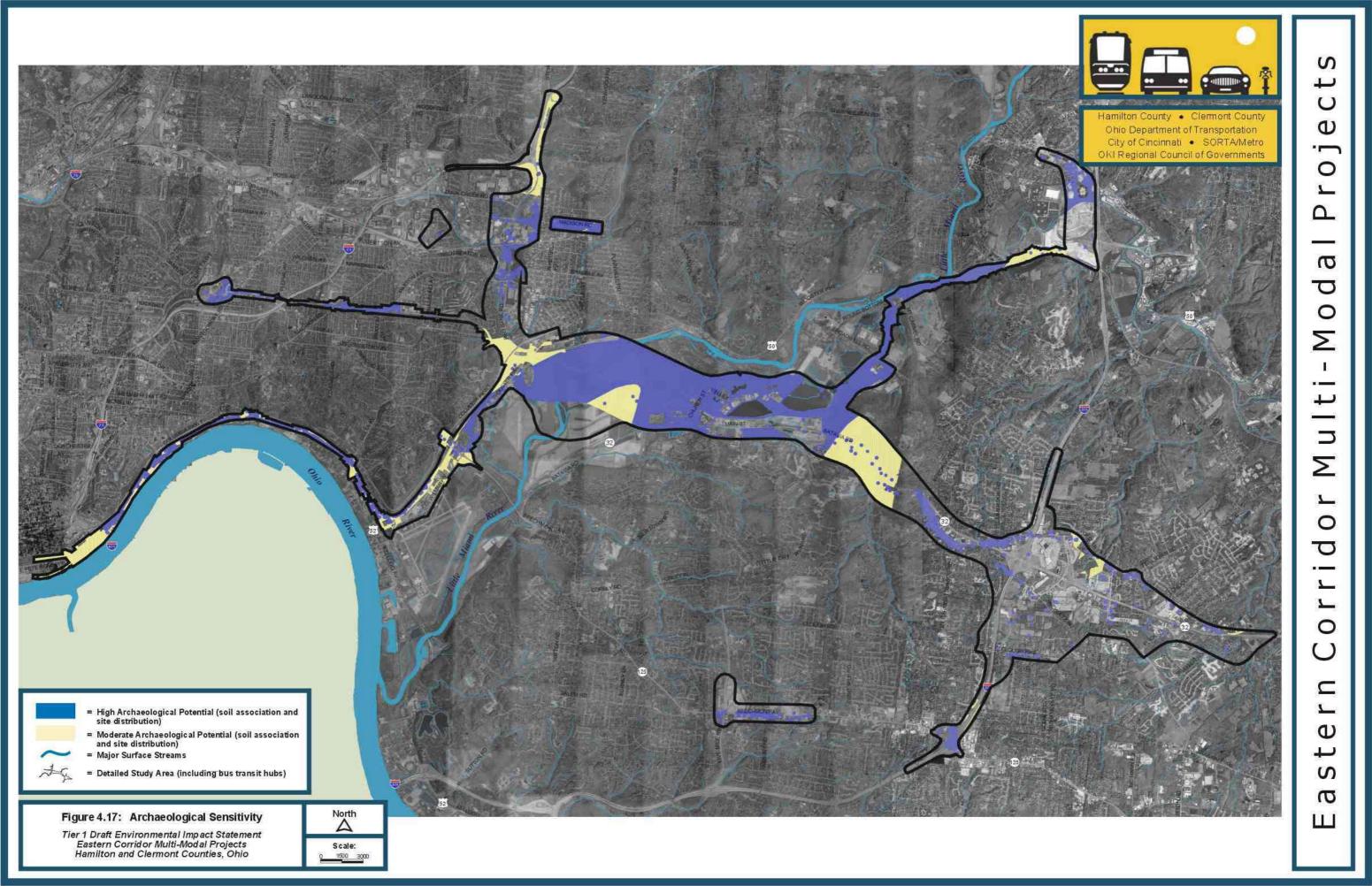


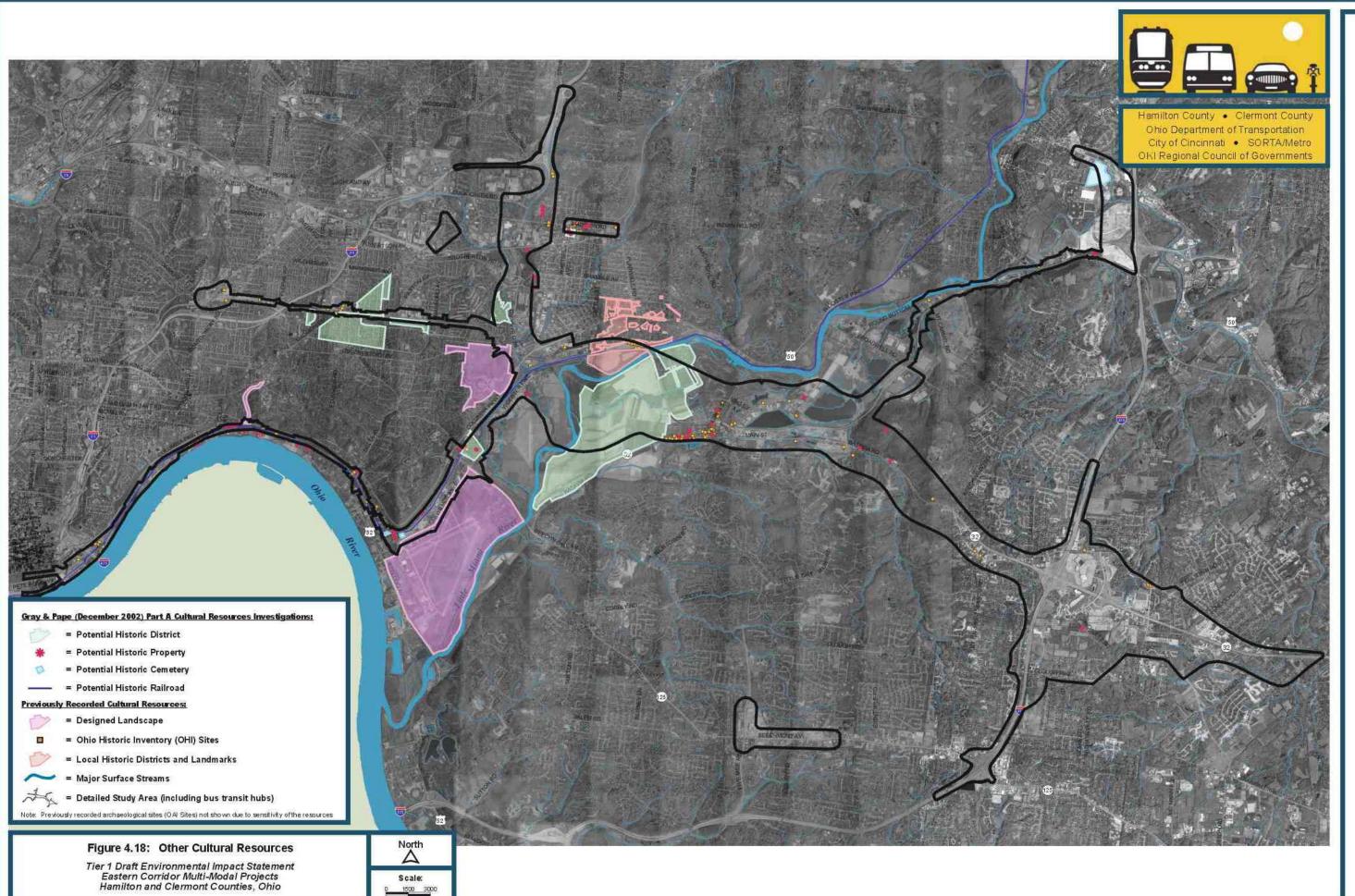






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Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

CHAPTER 5 ENVIRONMENTAL CONSEQUENCES



CHAPTER 5 ENVIRONMENTAL CONSEQUENCES

This chapter presents a preliminary assessment of the range of impacts to key environmental resources affected by feasible alternatives under consideration in the Eastern Corridor.

Similar to the way feasible alternatives are presented in Chapter 3 of this Tier 1 document, preliminary impact assessment information in Chapter 5 is presented in two ways: by mode and by geographic area in the Eastern Corridor, as noted below.

Chapter 5 Organization

Section 5.1 summarizes preliminary impacts of feasible alternatives by mode, presented in a series of impact tables for each of the modal categories, including Transportation System Management (TSM), bus, rail, highway and bikeway. Feasible alternatives by mode are described in Chapter 3.4.1.

Section 5.2 summarizes preliminary impacts of feasible multi-modal alternatives by each of six geographic areas within the Eastern Corridor. As noted in Chapter 3.4.2, feasible alternatives were developed with the goal of creating a multi-modal solution for the Eastern Corridor that supported, to the extent practicable, priority goals that were identified by specific focus group areas through the land use vision process. Whereas Section 5.1 summarizes the ranges of impacts for the different modes, Section 5.2 presents a discussion of what impacts can be expected by all of the modes under consideration within a geographic area, and highlights key environmental concerns specific to that area based on information obtained from Tier 1 work to date. Included in Section 5.2 for each area of the Eastern Corridor are:

- a brief recap of multi-modal components comprising the area,
- a brief summary of existing conditions,
- discussion of key environmental issues and impacts specific to the area,
- summary of mitigation that may be required as the project further develops, and
- discussion of secondary and cumulative impacts issues, including fit of feasible alternatives in the area with the Eastern Corridor land use vision plan

Section 5.3 presents a summary of Section 4(f) resources potentially impacted by feasible alternatives under consideration for the Eastern Corridor. Included are descriptions of known Section 4(f) resources, and preliminary assessment of potential impact.

Section 5.4 and Section 5.5 summarize Section 6(f) - Land and Water Conservation Fund and Section 1010 - Urban Park and Recreation Recovery, and Section 7 - Wild and Scenic Rivers resources and applicability for the project, respectively.

Section 5.6 presents a preliminary evaluation of expected secondary and cumulative impacts of the multi-modal transportation improvements proposed for the Eastern Corridor.

Section 5.7 presents a discussion of expected consequences of the No Build alternative.



General Assessment Methods

Preliminary impacts were determined by overlaying feasible alternative corridors onto GIS mapping of environmental resources based on information collected during Eastern Corridor Tier 1 studies and available secondary source information, as presented in Chapter 4. Corridor widths used for assessing impacts vary by mode and location, and are specified by mode and/or alternative alignment in Chapter 5.1.

Tier 1 studies used as the basis for the environmental data from which impacts were assessed include: Ecological Resources Inventory Report (Balke American, February 2003), Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives (Gray and Pape, Inc., December 2002), Results of Hazardous Materials Environmental Study (Corridor Inventory and File Review of Priority Sites), Eastern Corridor PE/EIS (H.C. Nutting Company, December 2002) and Addendum to Tier 1 Environmental Studies (Balke American, June 2003).

As noted in Chapter 3.4, feasible alternatives developed in Tier 1 are not specific alignment locations, but alternative corridors that will be further developed and evaluated during Tier 2. Sufficient preliminary engineering work was conducted in Tier 1 to understand the general spatial requirements of the various modal alternatives, but alignment location and configuration details have not been established. In addition, access details have not been developed for the Tier 1 work, including intersection, interchange, bus/rail hubs and other ancillary connections. Instead, access points for all modes have been treated equally, i.e., general spatial requirements have been identified in order to establish an approximate footprint area.

Consequently, the quantities presented in this Tier 1 document are based on conservative estimates of corridor widths for the purpose of presenting an overview of the range of likely impacts expected by the different modes and multi-modal alternatives being considered for the Eastern Corridor. Actual impacts will be different (may be higher or, more likely, lower) once alignment location and configuration is more specifically determined in Tier 2, and detailed design is developed.

For TSM projects and preliminary transit stations being considered for the Eastern Corridor, a qualitative impact assessment only was conducted for Tier 1. Qualitative assessment was based on review of available secondary source information collected for the project, as presented in the Eastern Corridor Environmental Inventory Source Document (March 15, 2002), and information collected during Tier 1 field studies where available.

Description of Environmental Resources Used in Preliminary Impact Assessment

Preliminary impacts for feasible alternatives are reported by mode in a series of impact tables included in Chapter 5.1. Key environmental features/resources that were used in the preliminary impact assessment are defined in Table 5.1. More detailed descriptions of these resources and the results of Tier 1 field studies are presented in Chapter 4 of this DEIS.



Preliminary Impact Assessment	
Environmental Impact Category	Description and Information Source
	Ecological Features and Hazardous Materials
USGS Streams in Alternative Corridor	Number of different USGS blueline features (perennial and intermittent) occurring within the estimated corridor width (impact footprint) of the modal alternative.
Estimated Stream Length within Alternative Corridor Width	Linear feet of total stream occurring within the estimated corridor width of the modal alternative, all USGS features combined, and excluding existing culverted sections of streams; stream lengths are reported as "crossings" or "parallel"; crossings are likely unavoidable impacts (alignment crosses perpendicular to stream), although impacted lengths may be substantially less when more specific structure information becomes available during Tier 2 work; "parallel" lengths are the most uncertain at this stage in terms of impact they may be avoided, or rechanneled only in part when more detailed information becomes available during Tier 2 work.
Floodplain	Acres of encroachment on FEMA designated 100-year floodplain within the estimated corridor width of the modal alternative.
Sole Source Aquifer	Acres of encroachment on the USEPA Buried Valley Aquifer System (BVAS) Sole Source Aquifer within the estimated corridor width of the modal alternative.
Public Water Supplies	Number of OEPA-registered individual public water supply wells (Community and Non-Community Water Systems; OEPA, May 14, 1998) occurring within the estimated corridor width of the modal alternative.
Wetlands	Acres of Tier 1 field-verified wetlands (described in Eastern Corridor Ecological Resources Inventory Report, Balke American, February 2003) occurring within the estimated corridor width of the modal alternative; Category 1 wetlands are limited quality features, Category 2 wetlands are moderate quality and Category 3 features are high quality wetlands.
Surveyed Woodlands	Acres of Tier 1 field-verified large continuous woodland tracts (described in Eastern Corridor Ecological Resources Inventory Report, Balke American, February 2003) occurring within the estimated corridor width of the modal alternative. NOTE: this category does not include acreage of all woodlands occurring within a modal alternative corridor.
Known Federal/State Listed species	Number of known occurrences of Federal or State listed threatened, endangered, Federal candidate or State special concern species occurring within the estimated corridor width of the modal alternative; occurrence information based on ODNR Natural Heritage Database records and data collected during Tier 1 field studies.
Parks and Greenspace	Number and total acreage, within the modal alternative corridor, of state, county, township and city/village owned parks, athletic fields, golf courses, nature preserves and undeveloped or minimally developed greenspaces and large tracts of privately-owned greenspaces, including preserves, country clubs, golf courses, gun clubs, practice ranges and horse riding facilities.
Hazardous Material Concern Sites	Number of hazardous materials concern sites occurring within the estimated corridor width of the modal alternative; sites of concern identified as those listed in one or more of the following databases (per ODOT Office of Environmental Services, Environmental Site Assessment Guidelines, September 1999): National Priority List (NPL) Sites, Comprehensive Environmental Recovery Compensation and Liability Act (CERCLA) Sites, Ohio Master List (MSL) Sites, Resource Conservation and Recovery Act Large Quantity Generators (RCRA LQG's), RCRA Transportation Storage Disposal Facilities (RCRA TSD's), Solid Waste Facilities (SWF's), or any sites with the potential for a release and/or impact of hazardous materials; approximately 16 databases searched as

Table 5.1. Description of Environmental Features Evaluated in Tier 1 Preliminary Impact Assessment



Environmentel	
Environmental Impact Category	Description and Information Source
	presented in Results of Hazardous Materials Environmental Inventory (Corridor Inventory and File Review of Priority Sites), Eastern Corridor PE/EIS, Hamilton and Clermont Counties (H.C. Nutting Company, December 31, 2002).
	Land Use
Residential Use	Acres of existing residential land use occurring within the estimated corridor width of the modal alternative, including rural estate, low density, low medium density, medium density, medium high density, high density, multi-family and vacant residential land use categories as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002).
Commercial Use	Acres of existing commercial land use occurring within the estimated corridor width of the modal alternative, including commercial, vacant commercial and office land use categories as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002).
Industrial Use	Acres of existing industrial land use occurring within the estimated corridor width of the modal alternative, including heavy, light and vacant industrial land use categories as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002).
Agricultural Use	Acres of existing agricultural and vacant agricultural land uses occurring within the estimated corridor width of the modal alternative, as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002).
Agricultural District Parcels	Number of parcels designated as Agricultural District occurring within the estimated corridor width of the modal alternative; agricultural district boundary information was obtained from the Hamilton County and Clermont County auditor's offices.
Existing Transportation Use	Acres of existing transportation land use occurring within the estimated corridor width of the modal alternative, as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002).
Educational Use	Acres of existing educational use occurring within the estimated corridor width of the modal alternative, as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002); primarily includes school and board of education properties.
Institutional Use	Acres of existing institutional use occurring within the estimated corridor width of the modal alternative, as defined and GIS mapped in the Eastern Corridor land use vision plan (Meisner & Associates, May 2002); primarily includes church properties.
	Cultural Resources
National Register Properties	Number of individual historic or archaeological properties currently listed on the National Register of Historic Places occurring within the estimated corridor width of the modal alternative.
National Register Districts	Number of historic or archaeological districts currently listed on the National Register of Historic Places occurring within the estimated corridor width of the modal alternative.
Other Historic or Archaeological Resources	Number of other cultural resources occurring within the estimated corridor width of the modal alternative that are not currently listed on the National Register; it is not known if these resources are eligible for the National Register (additional Phase I field work required; to be conducted during Tier 2); included in this category are previously inventoried historic sites (Ohio Historic Inventory [OHI] sites), previously inventoried archaeological sites (Ohio Archaeological Inventory

Table 5.1. Description of Environmental Features Evaluated in Tier 1 Preliminary Impact Assessment



Environmental Impact Category	Description and Information Source
	[OHI] sites), previously inventoried archaeological sites (Ohio Archaeological Inventory [OAI] sites), and sites exhibiting potential NR characteristics, as identified during Tier 1 cultural resources field studies and presented in Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives, Gray and Pape, Incorporated, December 30, 2002.
Archaeological Sensitivity	Acres of high, medium and low probability (sensitivity) for the presence of archaeological sites occurring within the estimated corridor width of the modal alternative, from the results of predictive modeling based on soils survey information, historic maps and previously recorded sites, as presented in Cultural Resources Context Information in Support of the PE/EIS Part A Development and Identification of Feasible Alternatives, Gray and Pape, Incorporated, December 30, 2002.
	Socioeconomic Factors
Potential Residential Displacements	Approximate number of households occurring within the estimated corridor width of the modal alternative that may be displaced; in general, these are residential parcels with a main living structure (house) occurring either entirely or partially within the modal alternative corridor.
Potential Business / Industrial Displacements	Approximate number of commercial and industrial businesses occurring within the estimated corridor width of the modal alternative that may be displaced; in general, these are commercial and industrial parcels with a main business or warehouse structure occurring either entirely or partially within the modal alternative corridor.
Environmental Justice	Occurrence in the alternative corridor general vicinity of 2000 Census Block Groups with population at or above the Regional Average for: Low Income, Minority, Elderly, Persons with Disabilities or Zero Car Households; these populations are identified as environmental justice target groups in accordance with the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) Policy for Environmental Justice (OKI 2001).
Air Quality	The project is located in the Cincinnati Air Quality Control Region under local metropolitan planning organization (OKI) jurisdiction, and is in OKI's recently adopted FY 2004-2007 Transportation Improvement Program (TIP). The TIP is consistent with the currently adopted 2030 Regional Transportation Plan, which is in conformity regarding air quality.
Noise Associated with Roadway Improvements	Estimated number of potentially impacted noise receptors (buildings) occurring along proposed roadway improvements based on FHWA Traffic Noise Model TNM Look-up Table screening methodology. Category A receptors include tracts of land where quiet serves an important public need, as dedicated or recognized by appropriate local officials (e.g., an amphitheater or portions of a park). Category B receptors include residential, motel, public meeting room, school, church, library, and hospital buildings, and active recreational areas such as picnic areas and playgrounds. Category C receptors include buildings on developed land not included in Category B, such as commercial and retail buildings. GIS mapping showing the location of potential receptors is on file at the project office.
	It should be noted that the number of highway noise receptors reported in this Tier 1 DEIS do not necessarily indicate noise impact, but represent noise sensitivity. More detailed noise analyses using FHWA and ODOT guidelines will be conducted in Tier 2 of the Eastern Corridor study to determine specific noise impacts, and appropriate mitigation, related to highway noise.

Table 5.1. Description of Environmental Features Evaluated in Tier 1Preliminary Impact Assessment



Environmental Impact Category	Description and Information Source
Noise and Vibration Associated with Rail Transit	<u>Noise:</u> estimated number of potentially impacted noise receptors (buildings) occurring along the rail transit alternative based on FTA screening methodology (FTA Transit Noise and Vibration Impact Assessment Guidance Manual, April 1995). Noise Category 1 receptors include buildings and parks where quiet is an important element of intended use; Noise Category 2 receptors include residences and buildings where people normally sleep, including homes, hospitals and hotels; and Noise Category 3 receptors include institutional land uses with primarily daytime use, such as schools, libraries, churches and active parks. GIS mapping showing the location of potential receptors is on file.
	<u>Vibration:</u> estimated number of potentially impacted vibration receptors occurring along the rail transit alternative based on FTA screening methodology. Vibration Category 1 receptors include high sensitivity buildings where low ambient vibration is essential for operations occurring within the building, including buildings associated with vibration sensitive manufacturing and research, hospitals and laboratories with vibration-sensitive equipment, and university research operations; Vibration Category 2 receptors include residences and buildings where people normally sleep, including homes, hospitals and hotels; Vibration Category 3 receptors include schools, churches, other institutions and quiet offices that do not have vibration-sensitive equipment, but still have potential for activity interference. GIS mapping showing the location of potential receptors is on file at the project office.
	It should be noted that the number of rail noise and vibration receptors reported in this Tier 1 DEIS do not necessarily indicate noise or vibration impact, but represent noise or vibration sensitivity. More detailed noise and vibration analyses using FTA impact assessment guidelines will be conducted in Tier 2 of the Eastern Corridor study to determine specific noise and vibration impacts, and appropriate mitigation, related to rail transit.
Visually Sensitive Resources	Feature(s) or resource(s) identified as high quality based on FHWA guidelines (FHWA, Office of Environmental Policy, undated); in general, these include visually sensitive landscapes (landform, water, vegetation, manmade development, etc.) which are considered to have high visual quality, locations that are visually important for historic, scientific, or recreational reasons, or locations that are locally important.

Table 5.1. Description of Environmental Features Evaluated in Tier 1Preliminary Impact Assessment

5.1. PRELIMINARY IMPACT ASSESSMENT BY MODE

5.1.1. Preliminary Impact Assessment For TSM

As noted in Chapter 3.4.1, TSM core projects were selected from a list of 187 projects included in the overall Eastern Corridor TSM framework, based on anticipated improvement to the multi-modal transportation services within the Eastern Corridor, ability to meet transportation needs such as safety and congestion, and other issues such as funding availability and project readiness. The core TSM list will be updated during Tier 2 as the project financial strategy is finalized and priorities for TSM are refined. TSM projects include use of operational strategies such as improved signal timing, exiting roadway corridor improvements, as well as use of transportation demand management (TDM) strategies for changing travel behavior (such as new park-and-rides).



Preliminary impact assessment for the 55 TSM core projects in the Eastern Corridor area was made by qualitative review of available secondary source information, as presented in the Eastern Corridor Environmental Inventory Source Document (March 15, 2002), and information collected during Tier 1 field studies where available. Summary of environmental concerns by TSM project are presented in Table 5.2.

TSM Project	Management (TSM) by Project Environmental Concerns in General Vicinity
	Intersection Improvements
Edwards, Madison and Wasson Road	Other cultural resources (Ohio Historic Inventory [OHI] sites and potential district), National Register District (Cincinnati Street Gas Lamps), environmental justice
Edwards, Markbreit and Williams	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, architectural sensitivity, environmental justice
28 th , Millsbrae and Robertson	Buried Valley Aquifer Sys tem (BVAS) Sole Source Aquifer, architectural sensitivity, environmental justice
Madison and Plainville Road	Stream (headwater tributary to Duck Creek), Buried Valley Aquifer System (BVAS) Sole Source Aquifer, other cultural resources (OHI sites), environmental justice
Brotherton, Erie and Murray	Buried Valley Aquifer system (BVAS) Sole source Aquifer, archaeological sensitivity, environmental justice
Columbia Parkway at Delta/Tusculum/ Stanley	Ohio River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, National Register District (Columbia Tusculum Multiple Resource Area) and other cultural resources (local historic district), moderate archaeological sensitivity, environmental justice
Delta Avenue at Eastern and Kellogg intersection, replace railroad bridge	Ohio River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Rakestraw Memorial Rec. Area), National Register Individual property (Police Station #6), other cultural resources (OHI sites and potential individual properties), moderate archaeological sensitivity, environmental justice
Five Mile Road/Nimitzview	Parks and public lands (American Legion Post #318)
Asbury Road and Beechmont	Environmental justice
Clough Pike at Shayler Road	Stream (Shayler Run tributary), NWI wetland, environmental justice
Clough Pike at McMann Road	Environmental justice
Clough Pike at Mt. Carmel Road	Other cultural resources (OHI site)
Clough Pike at SR 32	Little Miami River 100-year floodplain, other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice
Old SR 74 at Rumpke	Other cultural resources (Ohio Historic Inventory [OHI] site), environmental justice
Gleneste-Withamsville at SR 125	Other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice
	Roadway Corridor Improvements

Table 5.2.	Qualitative Impact Assessment for Transportation System
	Management (TSM) by Project



Table 5.2. Qualitative Impact Assessment for Transportation SystemManagement (TSM) by Project

TSM Project	Environmental Concerns in General Vicinity
Dana Avenue from I-71 to Victory Parkway	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Evanston Recreational Area, Victory Parkway, St. Xavier University), other cultural resources (OHI sites), environmental justice
Edwards Road north of Hyde Park Square	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, National Register District (Cincinnati Street Gas Lamps), other cultural resources (OHI sites and potential district), architectural sensitivity, environmental justice
Ridge Avenue between Madison to Highland	Stream (West Fork Duck Creek headwater), West Fork Duck Creek 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, other cultural resources (OHI sites), environmental justice
Kennedy Connector (Duck Creek to Ridge)	Stream (West Fork Duck Creek headwater), West Fork Duck Creek 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Union Baptist Cemetery, Cincinnati Unknown Site-Preserved-Duck Creek Rd), architectural sensitivity, environmental justice
Red Bank from US 50 to Fair Lane	Stream (Duck Creek), Duck Creek 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, environmental justice
Red Bank from Fair Lane to Brotherton	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, environmental justice
Red Bank from Brotherton to Hetzel	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, hazardous material concern site (Electric Service Company), environmental justice
US 50 (Wooster Pike) in Fairfax	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, National Register District (Mariemont Historic District), National Register Individual property (Ferris, Joseph house), other cultural resources (OHI sites), architectural sensitivity, environmental justice
Safety improvements on US 50 between Walton Creek and Newtown Road	Stream (Little Miami River tributary), Little Miami River 100-year floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, environmental justice
Traffic signal coordination - Newtown Road between SR 32 and Valley Drive	Little Miami River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Little Miami Golf Center), National Register District (Perin Village Site), National Register Individual property (James Martin House), other cultural resources (OHI sites), high archaeological sensitivity, environmental justice
Valley Drive at Church Street and at Round Bottom Road (signals)	Little Miami River 100-year floodplain, other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice
SR 32/Round Bottom Road improvements	Little Miami River 100-year floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, National Register property (Odd Fellow's Cemetery Mound), other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice
Eight Mile Road from SR 32 south to top of the Hill	Stream (Dry Run), Dry Run 100-year floodplain
Clough Pike from Wolfangle Road to SR 32	Stream (Clough Creek), Clough Creek 100-year floodplain, National Register Individual property, other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice



Table 5.2. Qualitative Impact Assessment for Transportation SystemManagement (TSM) by Project

TSM Project	Environmental Concerns in General Vicinity
Newtown Road from Clough Pike to Ragland	Other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice
Ragland Road and Turpin Road upgrade	Other cultural resources (Ohio Historic Inventory [OHI] sites), environmental justice
Signal timing and coordination along SR 125 (Beechmont Avenue) – Hamilton County	Little Miami River and Duck Creek 100-year floodplains, Buried Valley Aquifer System (BVAS) Sole Source Aquifer
Beechmont Avenue lighting/safety – Anderson Township	Little Miami River and Duck Creek 100-year floodplains, Buried Valley Aquifer System (BVAS) Sole Source Aquifer
US 50 through Terrace Park (corridor improvement/bike path)	Streams (two Little Miami River tributaries), Buried Valley Aquifer System (BVAS) Sole Source Aquifer, NWI mapped wetland, quality forested area (Kroger Woods), parks and public lands (Whiteacre Park, Little Miami Scenic State Park, Terrace Park, Indian Hill Greenspace), other cultural resources (OHI sites), high to moderate archaeological sensitivity, environmental justice
Signal safety upgrade at Wooster Pike (US 50) – Terrace Park	Buried Valley Aquifer System (BVAS) Sole Source Aquifer
Beechwood Road extension at Round Bottom Road	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, NWI mapped wetlands, other cultural resources (OHI site), moderate archaeological sensitivity
SR 28 from I-275 to Bypass 28	Stream (Horner Run tributary), parks and public lands (Miami Township Site, Milford Board of Education), other cultural resources (OHI sites), environmental justice
Wolfpen Pleasant Hill to SR 131	Stream (Wolfpen Run), environmental justice
US 50 in Milford (bridge work and signals)	Streams (Little Miami River), Buried Valley Aquifer System (BVAS) Sole Source Aquifer, state-listed species (mussel), Local Historic District (Milford), other cultural resources (OHI sites), parkland (Little Miami Scenic Trail)
US 52 (Eastern Avenue) reconstruction Eggleston to Rookwood railroad overpass	Parks and public lands (Eden Park Waterfront), other cultural resources (potential railroad), designed landscape (Eden Park), moderate archaeological sensitivity, environmental justice
Kellogg Avenue from Delta to Congress	Ohio River 100-year floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parkland (Rakestraw Memorial Recreation Area), National Register Individual property (Hoodin Building), environmental justice



Table 5.2.	Qualitative Impact Assessment for Transportation System
	Management (TSM) by Project

TSM Project	Environmental Concerns in General Vicinity
Kellogg Avenue from Stanley Avenue to Salem	Streams (Little Miami River and two LMR tributaries), Ohio River and Little Miami River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, NWI mapped wetlands, quality forested areas (Margrish Preserve, California Woods), parks and public lands (California Golf Course, California Nature Preserve, California Ball Grounds, Riverstar Park, Harbor Town Yacht Club, Shelter Cove Marina, Magrish Recreational Area, Four Seasons Marina, Rivertown Marina, Rakestraw Park, Airport Playfield), other cultural resources (OHI sites), designed landscape (Lunken Airport), moderate archaeological sensitivity, env. justice
Kellogg Avenue from Salem to I-275	Streams (Ohio River tributary, Three Mile Creek, Four Mile Creek), Ohio River, Three Mile Creek, and Four Mile Creek 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Coney Island, Riverbend, River Downs), NWI mapped wetland, moderate archaeological sensitivity
Wilmer Avenue	Buried Valley Aquifer System (BVAS) Sole Source Aquifer, wetlands (Wetlands 37 and 38), parks and public lands (Airport playfield), National Register Individual property (Columbia Baptist Cemetery), other cultural resources (OHI site, potential cemetery and district), designed landscape (Lunken Airport), moderate archaeological sensitivity, environmental justice
Wooster Pike from Beechmont to Red Bank Road	Streams (Duck Creek and Duck Creek tributary), Duck Creek and Little Miami River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, wetlands (Wetlands 29 and 58), parks and public lands (Rose Arena Equine Center, Armleder Little Miami Park, Linwood Athletic Field), National Register District (Mariemont Historic District), other cultural resources (potential district, OHI sites), designed landscape (Lunken Airport), high to moderate archaeological sensitivity, environmental justice
Old SR 74 (Schoolhouse Road to SR 32)	Stream (Shayler Run), residential area
Old SR 74 (Summerside to Gleneste-Withamsville)	Stream (Salt Run tributary), hazardous materials concern site (Vivi Color), other cultural resources (OHI site), environmental justice
Aicholtz Road improvements	Wetland, other cultural resources (potential historic property), environmental justice
Merwin Ten Mile Road to Ferris Road	Stream (Shayler Run headwater tributary)
	More Frequent Bus Service
US 50	Localized noise and air quality impacts
SR 125	Localized noise and air quality impacts
	Park and Ride Facilities
Newtown Road and US 50	Parks and public lands (Indian Hill Greenspace, Avoca Park), moderate to high archaeological sensitivity, environmental justice
I-275 at SR 125	Low to moderate archaeological sensitivity, environmental justice
	Interchange Improvements
Beechmont Avenue/Wilmer Avenue/ Wooster Pike	Duck Creek 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Airport Playfield, Armleder Little Miami Park, Rose Arena Equine Center), other cultural resources (potential district), designed landscape (Lunken Airport), moderate archaeological sensitivity, environmental justice



Table 5.2. Qualitative Impact Assessment for Transportation System	
Management (TSM) by Project	

TSM Project	Environmental Concerns in General Vicinity
Beechmont and US 50 (Columbia Parkway)	Duck Creek 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Airport Playfield, Armleder Little Miami Park, Rose Arena Equine Center), other cultural resources (potential district), designed landscape (Lunken Airport), moderate archaeological sensitivity, environmental justice

5.1.2. Preliminary Impact Assessment For Expanded Bus

The expanded bus plan for the Eastern Corridor, described in Chapter 3.4.1, contains three main components, including: primary bus routes, new community circulator routes, and transit hubs.

No direct impacts are expected as a result of the expansion of primary bus routes or development of new circulator routes in that all routes will occur on existing roadways (no new construction). The main impacts associated with the expanded bus routes are expected to consist of localized air quality impacts and increased noise, especially along new circulator routes where bus transit does not currently exist. These impacts will be further evaluated in Tier 2 of the Eastern Corridor study.

Transit hubs will require new construction and right-of-way takes, that vary by proposed hub type as described in Chapter 3.4.1. Preliminary impacts associated with each of the transit hubs are summarized in Table 5.3. Impact footprint for the different hub types were determined from kit-of-parts information included in the MetroMoves Regional Transit Plan (June 2002). In general, the kit-of-parts identifies common elements included in a hub, along with the size and number of each element needed, for calculation of an estimated footprint (square footage) needed for each of the hubs by location.

	bie 5.3. Qualitative			
Bus Hub	Hub Type and Facilities	Area Required	Preliminary Bus Hub Placement	Environmental Concerns
Anderson / Beechmont Hub	Off-Street with Park- and-Ride	197,760 ft ² (4.5 ac)	Former Beechmont Mall, at corner of Beechmont and Five	Minimal (previously developed site); noise concerns
	6 off-street bays; 250 park-and-ride spaces		Mile Roads	
Avondale Hub	On-Street Stop/Storefront	96,610 ft ² (2.2 ac)	Northwest corner of Reading Road and Rockdale Avenue	Minimal (previously developed site); noise concerns
	4 on-street stops and 1 off-street bay			
Cincinnati Riverfront Transit Center	Use existing facility	No new right-of-way (existing facility)	Existing Riverfront Transit Center under Second Street	Minimal (previously developed site); noise concerns

Table 5.3. Qualitative Impact Assessment for Bus Hubs



Bus Hub	Hub Type and Facilities	Area Required	Preliminary Bus Hub Placement	Environmental Concerns
Eastgate Hub	Off-Street with Park- and-Ride (bus and rail) 3 off-street bays; 300 park-and-ride spaces	186,920 ft ² (4.3 ac)	Along Aicholtz (north side) between Eastgate Boulevard and Eastgate Square Drive, in vicinity of SE quadrant of I- 275/SR 32 interchange	Encroaches on existing woodlot; noise concerns
Madisonville Hub	On-Street Mini Hub 4 on-street stops	5,440 ft ² (0.12 ac)	North side of Madison Road between Ravenna Street and Whetsel Avenue	Minimal (previously developed site); noise concerns
Milford Hub	Off-Street with Park- and-Ride (bus and rail) 3 off-street bays; 200 park-and-ride spaces	143,360 ft ² (3.3 ac)	Along existing Norfolk Southern corridor (proposed Oasis rail line) between Round Bottom Road and Chamber Drive, in vicinity of SW quadrant of I- 275/US 50 interchange	Encroaches on currently vacant lot (minimal impacts expected); noise concerns
Newtown Transit Station	Off-Street with Park- and-Ride (bus and rail) 3 off-street bays; 200 park-and-ride spaces	143,360 ft ² (3.3 ac)	Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)	Station will be placed to avoid / minimize impacts to constraints along this stretch of Newtown Road to the extent possible, including NR properties / districts residential and commercial development, public parks, and private greenspaces
Oakley Hub	On Street Mini Hub with Parking 4 on-street stops; 50 park-and-ride spaces	49,000 ft ² (1.12 ac)	Northwest corner of Madison Road and Ridge Avenue	Minimal (previously developed site); noise concerns
Red Bank/Fairfax Transit Station	Off-Street with Park- and-Ride (bus and rail) 3 off-street bays; 200 park-and-ride spaces	143,360 ft ² (3.3 ac)	Along Wooster Pike, just east of proposed new Red Bank/US 50 /Wooster Pike interchange (between Wooster Pike and the Little Miami River)	Encroaches on existing landfill; also floodplain, aquifer, adjacent wetland, cultural resources (high archaeologica sensitivity) concerns

Table 5.3. Qualitative Impact Assessment for Bus Hubs

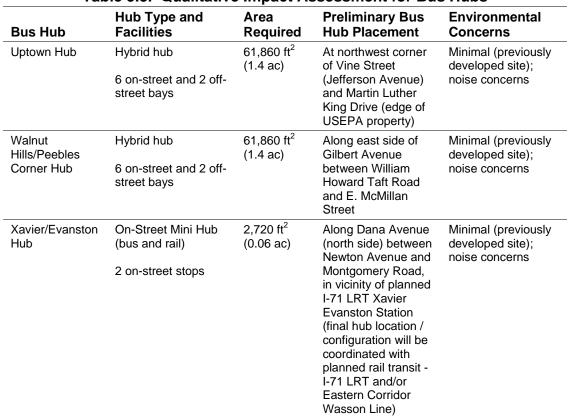


Table 5.3.	Qualitative In	npact Assessmen	t for Bus Hubs
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5.1.3. Preliminary Impact Assessment For Rail Transit

Oasis and Wasson Rail Corridors

Rail transit alternatives, described in Chapter 3.4.1 of this DEIS, include the <u>Oasis Line</u> (DMU), extending from downtown Cincinnati to the US 50/I-275 interchange area in Milford, and the future <u>Wasson Line</u> (light rail), extending from the Xavier/Evanston area to the SR 32/I-275 interchange area in Eastgate.

Portions of both these rail corridors run parallel to the proposed relocated SR 32 highway corridor. This contiguous highway/rail transit corridor begins at the proposed new interchange at Red Bank/US 50/Wooster Pike (and includes a shared crossing of the Little Miami River for both highway and rail) to the Ancor area for the Oasis Line and to the Eastgate area for the future Wasson Line. Impacts for these portions of rail transit are included with preliminary impacts for highway, described in Chapter 5.1.4 of this DEIS. Rail impacts included in Table 5.4 are for independent segments of the Oasis and Wasson Lines that follow existing rail corridors (i.e., rail line segments not included with the relocated SR 32 highway alternatives), and, for the future Wasson Line, the new rail segment required to tie-in to the proposed transit station at Eastgate. The estimated rail corridor width used for determining impacts was 100 feet, mostly centered on the existing rail alignment, but offset at some locations along the Oasis Line, including the Lunken Alternative and the Oasis Line from Ancor to Milford. Not



included are estimated impacts for proposed rail stations (qualitative impact assessment only; described separately).

Rail transit alternatives developed in Tier 1 are not exact alignment locations, but alternative corridors that will be further developed and evaluated during Tier 2. Consequently, the quantities presented in this Tier 1 document are based on conservative estimates of corridor widths for the purpose of presenting a comparative overview of the range of impacts expected by rail transit alternatives being considered for the Eastern Corridor. Variants and combinations of corridor elements are possible in Tier 2 within the overall alternatives configuration and impact ranges reported in Tier 1. Actual impacts will be different (may be higher or, more likely, lower) once alignment location and configuration is more specifically determined during Tier 2, and appropriate design details are developed.

Impact Category		Oasis Line (100' corridor width)				Wasso (100' corrie	
(see Table 5.1 for category description)	Unit	Riverfront - Boathouse (two altern.)	Boathouse to Red Bank	Lunken Alternative	Ancor to Milford	Xavier / Evanston - Red Bank	Eastgate Area
Ecological Features an	d Hazard	ous Materials					
USGS Streams	#	0	1 (Duck Creek)	1 (Duck Creek)	2 (East Fork tributaries)	1 (Duck Creek tributary)	1 (Hall Run)
Estimated Stream Length within Alternative Corridor (crossing/parallel)	linear feet	0	0 / 780	200 / 0	150 / 0	230 / 0	100 / 0
Floodplain	acres	6 to 25	20.3	9.6	3.9	0	0
Sole Source Aquifer (BVAS)	acres	0	29.3	28.7	42.9	10.0	0
Public Water Supplies	#	0	0	0	1 (Township Fields & Tavern)	0	0
Wetlands	acres	0	0	0	0.1 (Category 1)	0	0
Surveyed Woodlands	acres	0	0	0	1.3	2.1	0.5
Known Federal/State Listed Species	#	0	0	0	0	0	0
Parks and Greenspace (* indicates public owned facility/Section 4(f) resource described in Chapter 5.3)	# / acres	3 to 5 / 3 to 6 ac (Eden Park Waterfront*, Sawyer Point*, Bicentennial Commons*, Yeatman's Cove*, Public Landing*)	2 / 5.0 ac (Eden Park Waterfront*, Linwood Athletic Field*)	1 / 2.2 ac (Airport Playfield*)	1 / 1.1 ac (Township Fields & Tavern)	2 / 3.0 ac (Ault Park*, Hyde Park Country Club)	0

Table 5.4. Preliminary Impact Assessment for Rail Transit (for segments independent from proposed SR 32 highway improvement)



Table 5.4. Preliminary Impact Assessment for Rail Transit(for segments independent from proposed SR 32 highway improvement)

Impact Category		Oasis Line (100' corridor width)				Wasso (100' corrie	
(see Table 5.1 for category description)	Unit	Riverfront - Boathouse (two altern.)	Boathouse to Red Bank	Lunken Alternative	Ancor to Milford	Xavier / Evanston - Red Bank	Eastgate Area
Hazardous Material Concern Sites	#	0	2 (NREN, Hafner & Sons)	1 (Norwood Dump)	3 (Bway/ Heekin/ Milton Can Company, Anderson Township Landfill, Didier Taylor Refract)	1 (BASF)	0
Land Use and Farmland	d	Γ				Γ	
Residential Use	acres	0 to 0.2	17.5	0.6	7.1	3.3	9.7
Commercial Use	acres	4 to 8	3.1	1.7	2.1	3.3	8.4
Industrial Use	acres	0.1 to 3	14.6	2.5	15.7	1.5	0
Agricultural Use	acres	0	0	0	2.4	0	1.1
Agr. District Parcels	#	0	0	0	0	0	0
Existing Transportation Use	acres	5 to 10	42.2	12.6	18.1	35.1	3.4
Educational Use	acres	0	0	0	0	0	0
Institutional Use	acres	0	1 (church and cemetery)	0.1 (church)	0	0.1 (church)	0
Cultural Resources							
National Register Property (Section 4(f) resource described in Chapter 5.3)	#	0	3 (Hoodin Building, Fulton Cemetery, Columbia Cemetery; NOTE: all likely avoidable)	1 (Fulton Cemetery; likely avoidable)	0	0	0
National Register District (Section 4(f) resource described in Chapter 5.3)	#	0	0	0	0	1 (Cincinnati Street Gas Lamps)	0
Other Historic or Archaeological Resources	#	2	10	3	5	6	0 to 1
Archaeological Sensitivity (High, Moderate, Low)	acres	1, 8 to 25, 0	49, 29, 5	4, 4, 20	36, 9, 3	17, 4, 24	3, 0, 20
Socioeconomic Factors	S						
Potential Residential Displacement	#	0	19	0	2	5, plus one multi-family	7 to 13
Potential Commercial and Industrial Displacement	#	0	0	1	1	3	1 to 4
Potential Institutional Displacement	#	0	1 (church)	0	0	1 (church)	1



Table 5.4. Preliminary Impact Assessment for Rail Transit (for segments independent from proposed SR 32 highway improvement)

Impact Category		Oasis Line (100' corridor width)				Wasson Line (100' corridor width)	
(see Table 5.1 for category description)	Unit	Riverfront - Boathouse (two altern.)	Boathouse to Red Bank	Lunken Alternative	Ancor to Milford	Xavier / Evanston - Red Bank	Eastgate Area
Environmental Justice	2000 Cen. Pop.	low income, minority, elderly, zero car, disability					
Air Quality, Noise and \	/isual Re	sources					
Air Quality		Regional Conformity	Regional Conformity	Regional Conformity	Regional Conformity	Regional Conformity	Regional Conformity
Rail Noise – Potentially Impacted Receptors Cat 1 = high sensitive Cat 2 = mod sensitive Cat 3 = low sensitive (see Table 5.1)	#	Cat 1=1 to 2 Cat 2=5 to 9 Cat 3=5 to 8	Cat 1=10 Cat 2=636 Cat 3=32	Cat 1=2 Cat 2=111 Cat 3=7	Cat 1=1 Cat 2=23 Cat 3=4	Cat 1=1 Cat 2=770 Cat 3=10	Cat 1=0 Cat 2 =21 to 40 Cat 3=0 to 2
Vibration – Potentially Impacted Receptors Cat 1 = high sensitive Cat 2 = mod sensitive Cat 3 = low sensitive (see Table 5.1)	#	Cat 1=0 Cat 2=1 to 2 Cat 3=0 to 2	Cat 1=9 Cat 2=272 Cat 3=5	Cat 1=5 Cat 2=24 Cat 3=1	Cat 1=0 Cat 2=12 Cat 3=0	Cat 1=0 Cat 2=269 Cat 3=3	Cat 1=1 Cat 2=79 to 106 Cat 3=7 to 8
Visually Sensitive Resources		Existing parks along riverfront	Schmidt Field, Lunken Airport Playfield	Lunken Airport Playfield	Little Miami River, East Fork LMR	Ault Park	none

Preliminary Rail Stations

Preliminary impact assessment for proposed rail station locations was made by qualitative review of available secondary source information collected for the project as presented in the Eastern Corridor Environmental Inventory Source Document (March 15, 2002), and from information collected during Tier 1 field studies. Summary of general environmental concerns for rail stations by rail line are presented in Table 5.5.

Table 5.5. Qualitative Impact Assessment for Rail Stations

General Rail Station Location	Preliminary Rail Station Placement	Environmental Concerns
	Oasis Line (listed west to east)	
Cincinnati Riverfront Transit Center - Riverfront Transit Center (a bus/rail transit hub)	Existing Riverfront Transit Center under Second Street in downtown Cincinnati	Minimal (previously developed site); noise concerns (expected to be limited to within the existing underground transit facility)



General Rail Station Location	Preliminary Rail Station Placement	Environmental Concerns
East Riverfront Station - Sawyer Point/Adams Landing area - Intersection of Eastern Avenue (US 52) and Adams Crossing SE Quadrant	Just east of the Montgomery Inn Boathouse between the existing railroad alignment and the existing parking lot for the Boathouse and Theodore Berry International Friendship Park, with access off of Eastern Avenue	Minimal (if placed between existing rail and parking lot); potential encroachment on public parkland (Theodore Berry International Friendship Park)
Pendleton/East End Station - Eastern Avenue (US 52) and Columbia Parkway (US 50) near intersection with Torrance Parkway	Along existing railroad alignment, approximately 600 feet east of the intersection of Columbia Parkway (US 50) and Torrance Parkway	Severe topography; woodland impacts
Columbia/Tusculum Station - Intersection of Columbia Parkway and Delta Avenue SW Quadrant	Just west of existing railroad overpass over Delta Avenue and south of Walworth Avenue	Potential impacts to existing residences along Walworth Avenue; adjacent to public parkland (Rakestraw Memorial Recreational Area) and new school; noise impact concerns
Lunken Airport Station - opposite Lunken Airport along Wilmer Avenue or existing railroad	Along west side of Wilmer Avenue just north of Columbia Baptist Cemetery (across from Lunken Airport terminals)	Previously disturbed site (new development); adjacent to and possible encroachment on Category 1 wetland (limited)
Beechmont Station - Intersection of Beechmont Avenue (SR 125) and Wilmer/Wooster Pike SW Quadrant	At-grade below the existing Beechmont Avenue Viaduct (at intersection of existing rail alignment with Beechmont Avenue); final location of this station and access details are dependent upon potential US 50/ Beechmont/Wilmer interchange modifications proposed for this vicinity (an Eastern Corridor TSM project) and final rail alignment location (i.e., on existing rail or new alignment).	Previously disturbed site (development); clips edge of hazardous materials concern site (Multicolor Corporation)
Red Bank/Fairfax Transit Station - In vicinity of proposed Red Bank/US 50/Wooster interchange (a bus/rail transit hub; same location as Wasson Line station)	Along Wooster Pike, just east of proposed new Red Bank/US 50/Wooster Pike interchange (between Wooster Pike and the Little Miami River)	Encroaches on existing landfill; also floodplain, aquifer, adjacent wetland, cultural resources (high archaeological sensitivity) concerns
Newtown Transit Station - In vicinity of Newtown Road - Intersection of relocated SR 32 with Newtown Road (a bus/rail transit hub, same location as Wasson Line station)	Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)	Station will be placed to avoid/minimize impacts to constraints along this stretch of Newtown Road to the extent practicable, including NR properties and districts, residential and commercial development, public parks, and private greenspaces; noise impact concerns

Table 5.5. Qualitative Impact Assessment for Rail Stations



LocationPlacementEnvironmental ConcernsAncor Station - Near intersection of proposed Wasson Rail Line and Broadwell RoadAlong proposed Wasson Line on the south side of the point where wasta facility (Anderson Township Landfill), a hazmat concern siteEncroaches on a closed solid wasta facility (Anderson Township Landfill), a hazmat concern siteMilord Hub - In vicinity of existing Norfolk Southern bus/rail transit hub)Along existing Norfolk Southern Road and Chamber Drive, in vicinity of SW quadrant of I- 275/US 50 interchangeEncroaches on currently vacan to (minimal impacts expected); noise concernsXavier/Evanston Hub - In vicinity of proposed I-71 LRT station (a bus/rail transit hub)Along Dana Avenue (north side) between Round Neenue and Montgomery Road, in vicinity of proposed I-71 LRT Avier Evanston Station (final hub location/configuration will be coordinated/integrated with proposed I-71 LRT and/or Eastern Corridor Wasson Line)Encroaches on National Register District (Cincinnati Street Gas Lamp); potential impact to two commercial properties along Wasson Road Station - Intersection of Wasson Road and Paxton Avenue and Wasson Road Avenue SE QuadrantAlong existing rail alignment at the southeast corner of Paxton Along Wooster Pike, just east of Station - In vicinity of proposed Proposed rew Red Bank/US So/Wooster Pike interchange Wotown Road a bus/rail transit thue same location as Oasis Line station)Along Wooster Pike, just east of southeast corner of Paxton Along Newtown Road, generally between Valley Avenue and SR avenue and Wasson RoadEncroaches on existing landfill; alof fill and fill; alof fill and commercial register District (Sncinnati Str	General Rail Station	Preliminary Rail Station	
Intersection of proposed Wasson Rail Line and Broadwell Road Milford Hub - In vicinity of existing J-275/US 50 interchange SW Quadrant (a bus/rail transit hub) vicinity of SW quadrant of I- 275/US 50 interchange Wasson Line (listed west to east) Xavier/Evanston Hub - In vicinity of proposed I-71 LRT station (a bus/rail transit hub) vicinity of proposed I-71 LRT station (a bus/rail transit hub) Newtown Station - Intersection of Madison and Wasson Roads SE Quadrant Madag and Charles Driven Station - Intersection of Madison and Wasson Roads SE Quadrant Masson Road and Paxton Avenue SE Quadrant Matter Station - Intersection Masson Road and Paxton Avenue SE Quadrant Matter Station - Intersection Masson Road and Paxton Avenue SE Quadrant Masson Road and Paxton Avenue SE Quadrant Matter Station - Intersection Masson Road and Paxton Avenue SE Quadrant Matter Station - Intersection Masson Road and Paxton Avenue SE Quadrant Matter Station - Intersection of Matter Station - Intersection Masson Road and Paxton Avenue SE Quadrant Matter Station - Intersection of Matter Station - Intersection of Paxina Avenue SC Quadrant (a bus/rail transit hub; St			Environmental Concerns
existing I-275/US 50 interchange SW Quadrant (a bus/rail transit hub) bus/rail transit hub) Savier/Evanston Hub - In vicinity of SW quadrant of I- 275/US 50 interchange Wasson Line (listed west to east) Xavier/Evanston Hub - In vicinity of proposed I-71 LRT station (a bus/rail transit hub) Margoney Road, in vicinity of proposed I-71 LRT and/or Eastern Corridor Wasson Line) Rookwood Station - Intersection of Madison and Wasson Roads SE Quadrant Wasson Road and Paxton Avenue SE Quadrant Red Bank/Fairfax Transit Station - In vicinity of Proposed and Paxton Avenue SE Quadrant Red Bank/Fairfax Transit Line station) Red Bank/Fairfax Transit Line station) Red Bank/Fairfax Transit Red Bank/Fairfax Transit Line station) Newtown Road (a bus/rail transit) Newtown Road (a bus/rail transit)	Ancor Station - Near intersection of proposed Wasson Rail Line and Broadwell Road	the south side of the point where	waste facility (Anderson Township Landfill), a hazmat
Xavier/Evanston Hub - In vicinity of proposed I-71 LRT station (a bus/rail transit hub)Along Dana Avenue (north side) between Newton Avenue and Montgomery Road, in vicinity of proposed I-71 LRT Xavier Evanston Station (final hub location/configuration will be coordinated/integrated with proposed rail transit in the area - I-71 LRT and/or Eastern Corridor Wasson Line)Minimal (previously developed site); noise concernsRookwood Station - Intersection of Madison and Wasson Roads SE QuadrantAlong the existing rail alignment, Road between Michigan and Shaw AvenuesEncroaches on National Register District (Cincinnati Street Gas Lamp); potential impact to two commercial proposed and Paxton Avenue SE QuadrantAlong existing rail alignment at the southeast corner of Paxton Avenue and Wasson RoadAlong existing rail alignment at the southeast corner of Paxton Avenue and Wasson RoadAlong existing rail alignment at the southeast corner of Paxton Avenue and Wasson RoadAlong woster Pike, just east of proposed new Red Bank/US S0/Wooster folveween Wooster Pike interchange (between Wooster Pike and the Little Miami River)Encroaches on existing landfill; also floodplain, aquifer, adjacer to nation will be placed to avoid/minize impacts to constraints along this stretch of Newtown Road (a bus/rail transit hub, same location as Oasis Line station)Station vill be tween Valley Avenue and SR 32 (dependent upon location of relocated SR 32)Station will be placed to avoid/minize impacts to constraints along this stretch of Newtown Road (a bus/rail transit hub, same location as Oasis Line station)Along Akcholtz (north side) between Eastgate Boulevard and Eastgate Square Drive, in vicinity of SE quadrant of	Milford Hub - In vicinity of existing I-275/US 50 interchange SW Quadrant (a bus/rail transit hub)	corridor (proposed Oasis rail line) between Round Bottom Road and Chamber Drive, in vicinity of SW quadrant of I-	Encroaches on currently vacant lot (minimal impacts expected); noise concerns
 vicinity of proposed I-71 LRT between Newton Avenue and Montgomery Road, in vicinity of proposed I-71 LRT Xavier Evanston Station (final hub location/configuration will be coordinated/integrated with proposed I-71 LRT and/or Eastern Corridor Wasson Line) Rookwood Station - Intersection of Madison and Wasson Roads SE Quadrant Along the existing rail alignment, on the south side of Wasson Road between Michigan and Shaw Avenues Paxton Station - Intersection of Wasson Road and Paxton Avenue SE Quadrant Along existing rail alignment at the southeast corner of Paxton Avenue SE Quadrant Along wooster Pike, just east of proposed new Red Bank/US 50/Wooster Pike, iust east of proposed new Red Bank/US 50/Wooster Pike interchange (between Vooster Pike and the Little Miami River) Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32) Station - In vicinity of Newtown Road (a bus/rail transit hub, same location as Oasis Line station) Along Aicholtz (north side) between Eastgate Boulevard and Eastgate Square Drive, in vicinity of SE quadrant of I- 		Wasson Line (listed west to east)	
of Madison and Wasson Roads SE Quadranton the south side of Wasson Road between Michigan and Shaw AvenuesRegister District (Cincinnati Street Gas Lamp); potential impact to two commercial properties along Wasson RoadPaxton Station - Intersection of Wasson Road and Paxton Avenue SE QuadrantAlong existing rail alignment at the southeast corner of Paxton Avenue and Wasson RoadAdjacent to National Register District (Cincinnati Street Gas Lamps), but no encroachment; preliminary location is on land currently owned by N&S railroaRed Bank/Fairfax Transit Station - In vicinity of proposed Red Bank/US 50/Wooster interchange (a bus/rail transit hub; same location as Oasis Line station)Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)Encroaches on existing landfill; also floodplain, aquifer, adjacer wetland, cultural resources (high archaeological sensitivity) concernsNewtown Transit Station - In vicinity of Newtown Road - Intersection of relocated SR 32 with Newtown Road (a bus/rail transit hub, same location as Oasis Line station)Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)Station will be placed to avoid/minimize impacts to constraints along this stretch of Newtown Road to the extent properties and districts, residential and commercial development, public parks, and private greenspacesEastgate Hub - Near vicinity of hub)Along Aicholtz (north side) between Eastgate Boulevard and Eastgate Square Drive, in vicinity of SE quadrant of 1-Encroaches on existing woodlo noise concerns	Xavier/Evanston Hub - In vicinity of proposed I-71 LRT station (a bus/rail transit hub)	between Newton Avenue and Montgomery Road, in vicinity of proposed I-71 LRT Xavier Evanston Station (final hub location/configuration will be coordinated/integrated with proposed rail transit in the area - I-71 LRT and/or Eastern Corridor Wasson Line)	
Wasson Road and Paxton Avenue SE Quadrantthe southeast corner of Paxton Avenue and Wasson RoadDistrict (Cincinnati Street Gas Lamps), but no encroachment; preliminary location is on land currently owned by N&S railroaRed Bank/Fairfax Transit Station - In vicinity of proposed Red Bank/US 50/Wooster interchange (a bus/rail transit hub; same location as Oasis Line station)Along Wooster Pike, just east of proposed new Red Bank/US 50/Wooster Pike interchange (between Wooster Pike and the Little Miami River)Encroaches on existing landfill; also floodplain, aquifer, adjacer wetland, cultural resources (high archaeological sensitivity) concernsNewtown Transit Station - In vicinity of Newtown Road - Intersection of relocated SR 32 With Newtown Road (a bus/rail transit hub, same location as Oasis Line station)Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)Station will be placed to avoid/minimize impacts to constraints along this stretch of Newtown Road to the extent practicable, including NR properties and districts, residential and commercial development, public parks, and private greenspacesEastgate Hub - Near vicinity of hub)Along Aicholtz (north side) between Eastgate Boulevard and Eastgate Square Drive, in vicinity of SE quadrant of I-Encroaches on existing woodlo noise concerns	Rookwood Station - Intersection of Madison and Wasson Roads SE Quadrant	on the south side of Wasson Road between Michigan and	Register District (Cincinnati Street Gas Lamp); potential
Station - In vicinity of proposed Red Bank/US 50/Wooster interchange (a bus/rail transit hub; same location as Oasis Line station)proposed new Red Bank/US 50/Wooster Pike interchange (between Wooster Pike and the Little Miami River)also floodplain, aquifer, adjacer wetland, cultural resources (high archaeological sensitivity) concernsNewtown Transit Station - In vicinity of Newtown Road - Intersection of relocated SR 32 with Newtown Road (a bus/rail transit hub, same location as Oasis Line station)Along Newtown Road, generally between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)Station will be placed to avoid/minimize impacts to constraints along this stretch of Newtown Road to the extent practicable, including NR properties and districts, residential and commercial development, public parks, and private greenspacesEastgate Hub - Near vicinity of L-275/SR 32 interchange SE Quadrant (a bus/rail transit hub)Along Aicholtz (north side) between Eastgate Square Drive, in vicinity of SE quadrant of I-Encroaches on existing woodlo noise concerns	Paxton Station - Intersection of Wasson Road and Paxton Avenue SE Quadrant	the southeast corner of Paxton	District (Cincinnati Street Gas Lamps), but no encroachment;
vicinity of Newtown Road - Intersection of relocated SR 32 with Newtown Road (a bus/rail transit hub, same location as Oasis Line station)between Valley Avenue and SR 32 (dependent upon location of relocated SR 32)avoid/minimize impacts to constraints along this stretch of Newtown Road to the extent practicable, including NR properties and districts, residential and commercial development, public parks, and private greenspacesEastgate Hub - Near vicinity of I-275/SR 32 interchange SE Quadrant (a bus/rail transit hub)Along Aicholtz (north side) between Eastgate Square Drive, in vicinity of SE quadrant of I-Encroaches on existing woodlo noise concerns	Red Bank/Fairfax Transit Station - In vicinity of proposed Red Bank/US 50/Wooster interchange (a bus/rail transit hub; same location as Oasis Line station)	proposed new Red Bank/US 50/Wooster Pike interchange (between Wooster Pike and the	(high archaeological sensitivity)
I-275/SR 32 interchange SE Quadrant (a bus/rail transit hub) between Eastgate Boulevard noise concerns and Eastgate Square Drive, in vicinity of SE quadrant of I-	Newtown Transit Station - In vicinity of Newtown Road - Intersection of relocated SR 32 with Newtown Road (a bus/rail transit hub, same location as Oasis Line station)	between Valley Avenue and SR 32 (dependent upon location of	avoid/minimize impacts to constraints along this stretch of Newtown Road to the extent practicable, including NR properties and districts, residential and commercial development, public parks, and
210/OK 32 Interchange	Eastgate Hub - Near vicinity of I-275/SR 32 interchange SE Quadrant (a bus/rail transit hub)	between Eastgate Boulevard and Eastgate Square Drive, in	Encroaches on existing woodlot noise concerns

Table 5.5. Qualitative Impact Assessment for Rail Stations



5.1.4. Preliminary Impact Assessment For Highway

Feasible highway alternatives, described in Chapter 3.4.1, were developed for four segments of the Eastern Corridor, generally defined by existing road function, access points and termini, land use, local transportation needs, independent segment utility, potential multi-modal network connectivity, anticipated new highway typical section requirements, and new highway corridor footprint opportunities and constraints. These four segments included:

- Segment I (Red Bank Corridor, I-71 to US 50),
- Segment II (US 50/River Crossing to Newtown Road)
- Segment III (Newtown Road to Mt. Carmel-Tobasco Road), and
- Segment IV (Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road [Eastgate area]).

Highway alternatives developed in Tier 1 are not specific alignment locations, but alternative corridors that will be further developed and evaluated during Tier 2. Consequently, the quantities presented in this Tier 1 document are based on conservative estimates of corridor widths for the purpose of presenting a comparative overview of the range of impacts expected by highway alternatives being considered for the Eastern Corridor. Actual impacts will be different (may be higher or, more likely, lower) once alignment location and configuration is more specifically determined during Tier 2, and detailed design is developed. For presentation purposes, Segments II and III, which extend from the proposed Red Bank/US 50/Wooster Pike interchange to Mt. Carmel Road, representing the relocated SR 32 corridor, are combined into one discussion.

Segment I: I-71 to US 50 (Red Bank Corridor)

Feasible alternatives under consideration in Segment I include two Red Bank improvement mainline alternatives, three Red Bank/US 50/Wooster Pike interchange configuration options, and three side road/intersection improvement options. Preliminary assessment of impacts by these alternatives is presented in the Table 5.6. The estimated right-of-way width used for assessing preliminary impacts was 200 feet for mainline alternatives, 125 to 200 feet from the centerline of proposed ramps for interchange options (variable depending on location), and 100 feet for proposed side road/intersection improvements.

 Table 5.6. Preliminary Impact Assessment (Range of Impacts) for Highway

 Alternatives in Segment I (Red Bank Corridor)

		Range of Impacts for Alternatives				
Impact Category (see Table 5.1 for category description)	Unit Mainline		Red Bank/US 50 Interchange Alternatives (Alternatives B1, B2 and B3, variable corridor widths)	Side Road/Intersection Improvements (Alternatives SR1, SR2 and SR3, 100' corridor widths)		
Ecological Features an	d Hazardo	us Materials				
USGS Streams	#	2 to 4 (Duck Creek, West Fork and/or two unnamed tributaries)	2 to 3 (Duck Creek and/or three unnamed tributaries)	2 to 3 (Duck Creek, West Fork and/or unnamed tributaries)		



Table 5.6.	Preliminary Impact Assessment (Range of Impacts) for Highway
	Alternatives in Segment I (Red Bank Corridor)

		Range of Impacts for Alternatives				
Impact Category (see Table 5.1 for category description)	Unit	Mainline Alternatives (Alternatives A and A2, 200' corridor widths)	Red Bank/US 50 Interchange Alternatives (Alternatives B1, B2 and B3, variable corridor widths)	Side Road/Intersection Improvements (Alternatives SR1, SR2 and SR3, 100' corridor widths)		
Estimated Stream Length within Alternative Corridor (crossing / parallel)	linear feet	450 to 1,460 / 1,514 to 1,770	500 to 1,210 / 720 to 2,100	280 to 1,145 / 510 to 1,650		
Floodplain	acres	8 to 15	10 to 23	8 to 8.5		
Sole Source Aquifer (BVAS)	acres	54 to 67	28 to 51	66 to 79		
Public Water Supplies	#	0	0	0		
Wetlands	acres	0.01 to 0.1 (Category 1)	0 to 3.1 (Category 2)	0.1 to 1.1 (Category 1)		
Surveyed Woodlands	acres	1 to 5	0 to 1	2 to 4		
Known Federal/State Listed Species	#	0	0	0		
Parks and Greenspace (* indicates public owned facility/Section 4(f) resource described in Chapter 5.3)	# / acres	1 to 2 / 1 to 6 ac (Ault Park*, Children's Home)	0 to 1 / 0 to 0.3 ac (Ault Park*)	1 / 3 to 5 ac (Children's Home)		
Hazardous Material Concern Sites	#	0 to 1 (Racking & Sharpening Services)	1 (Hafner & Sons)	1 to 3 (Racking & Sharpening Services, Creast Craft, Electric Services and/or Schulte Metal)		
Land Use and Farmland	l					
Residential Use	acres	4 to 14	1 to 5	5 to 9		
Commercial Use	acres	7.5 to 8	6 to 13	8 to 9		
Industrial Use	acres	6 to 6.5	1 to 8	13 to 18		
Agricultural Use	acres	0 to 0.05	9 to 22	0 to 0.4		
Agr. District Parcels	#	0	0	0		
Existing Transportation Use	acres	23 to 39	33 to 39	16 to 19		
Educational Use	acres	1 to 3 (Seven Hills School)	0	3 to 15 (Seven Hills School, John Parker Elementary)		
Institutional Use	acres	2 to 5 (animal foundation, children's home)	0	3 to 6 (animal foundation, churches, children's home)		
Cultural Resources						
National Register Property (Section 4(f) resource described in Chapter 5.3)	#	0	0	0		
National Register District (Section 4(f) resource described in Chapter 5.3)	#	0	0 to 1 (Mariemont)	0 to 1 (Mariemont)		



Table 5.6.	Preliminary Impact Assessment (Range of Impacts) for Highway
	Alternatives in Segment I (Red Bank Corridor)

		Range of Impacts for Alternatives				
Impact Category (see Table 5.1 for category description)	Unit	Mainline Alternatives (Alternatives A and A2, 200' corridor widths)	Red Bank/US 50 Interchange Alternatives (Alternatives B1, B2 and B3, variable corridor widths)	Side Road/Intersection Improvements (Alternatives SR1, SR2 and SR3, 100' corridor widths)		
Other Historic or Archaeological Resources	#	0 to 3	1 to 4	0 to 1		
Archaeological Sensitivity (High, Moderate, Low)	acres	9 to 11, 6 to 13, 44 to 56	4 to 13, 17 to 35, 27 to 34	13 to 22, 0 to 10, 40 to 57		
Socioeconomic Factors	6					
Potential Residential Displacement	#	4 to 42, 0 to 5 multi-family	2 to 20, 0 to 2 multi-family	4 to 17		
Potential Commercial and Industrial Displacement	#	19 to 21	4 to 8	6 to 22		
Potential Institutional Displacement	#	1 (animal foundation)	0	0 to 2 (animal foundation and/or church)		
Environmental Justice	2000 Cen. Pop.	Low Income, Minority, Elderly, Disabilities, Zero Car	Low Income, Elderly, Disabilities	Low Income, Minority, Elderly, Disabilities, Zero Car		
Air Quality, Noise and V	/isual Res	ources	1 7	1		
Air Quality		Regional Conformity	Regional Conformity	Regional Conformity		
Highway Noise – Potentially Impacted Receptors		Cat B = 275 Cat C = 95 (Alternative A only)	Cat B = 21 to 41 Cat C = 10 to 14	Screening not conducted for side road improvement alternatives		
Rail Noise – Potentially Impacted Receptors Cat 1 = high Cat 2 = mod Cat 3 = low sensitivity (see Table 5.1)	#	Not applicable	Cat 1 = 1 to 2 Cat 2 = 4 to 14 Cat 3 = 1 to 4 (rail tie-in to proposed Red Bank/US 50/Wooster Pike interchange)	Not applicable		
Vibration – Potentially Impacted Receptors Cat 1 = high Cat 2 = mod Cat 3 = low sensitivity (see Table 5.1)	#	Not applicable	Cat 1 = 0 Cat 2 = 0 to 2 Cat 3 = 0 (rail tie-in to proposed Red Bank/US 50/Wooster Pike interchange)	Not applicable		
Visually Sensitive Resources		Ault Park	Ault Park; Horseshoe Bend	Ault Park		

Segments II and III: US 50 Interchange to Mt. Carmel-Tobasco Road (SR 32 Improvement Corridor)

As noted in Chapter 3.4.1, Segments II and III are each divided into two geographic subsegments based on similar land use and environmental issues, design considerations and impact potential; alternatives developed within each sub-segment are connective to adjacent sub-segments.



Preliminary assessment of impacts to environmental features by alternatives within each subsegment is presented in Table 5.7. The estimated right-of-way width used for assessing preliminary impacts for most of the alternatives in Segment II/III was 400 feet, consisting of a 300-foot wide highway corridor, plus an additional 100-foot width to account for a parallel rail transit line. Exceptions include alternatives in the vicinity of the SR 32 Mt. Carmel hill (Alternatives Q, R and S), where an estimated 500 foot corridor width was used to accommodate additional earthwork required in this area, and for Alternative T, for which an 800' corridor width was use to accommodate a bifurcated highway segment following Dry Run along this section of proposed relocated SR 32.

		Range of I	mpacts for Alterr	natives within Sul	o-Segment	
Impact Category (see Table 5.1 for category description)		US 50/River Crossing Sub-Segment (Alternatives C, D, E and F; 400' corridor widths) River Plains Sub-Segment (LMR to Newtown Road; Alternatives G, H, I, J, K and L; 400' corridor widths)		Round Bottom/Ancor Sub-Segment (Newtown Road to E of Round Bottom; Alternatives M, N, O and P; 400' corridor widths)	Mt. Carmel Hill Sub-Segment (E of Round Bottom to Mt. Carmel-Tobasco Road; Alternatives Q, R, S and T; 500' to 800' widths)	
Ecological Features and Haz	zardous N		Γ	Γ		
USGS Streams in Corridor	#	2 to 3 (Little Miami River, Clear Creek, Duck Creek)	0 to 1 (Clear Creek)	0 to 1 (Dry Run)	1 (Dry Run)	
Estimated Stream Length within Corridor Width (crossing/parallel)	linear feet	1,050 to 1,770 / 0	0 to 1,950 / 0	0 to 1,160 / 0	510 to 1,500 / 0 to 2,920	
Floodplain	acres	48 to 79	48 to 65	49 to 66	9 to 82	
Sole Source Aquifer (BVAS)	acres	69 to 92	48 to 65	49 to 66	1 to 54	
Public Water Supplies	#	0	0	0	0	
Wetlands	acres	1.4 to 3.1 (Category 2)	0 to 1.8 (Category 1 & 2)	0	0.9 to 2.7 (Category 1 & 2)	
Surveyed Woodlands	acres	0 to 8	0 to 7	0	0 to 7	
Known Federal/State Listed Species	#	0	0 to 1 (red-eared slider)	0	0	
Parks and Greenspace (* indicates public owned facility/Section 4(f) resource described in Chapter 5.3)	# / acres	0 to 2 / 13 to 35 ac (Mariemont Gardens*, Horseshoe Bend)	2 to 4 / 7 to 39 ac (LMR* & Indian Valley Golf Center, Clear Creek Park*, Short Park*, Old Fort Greenspace*, Anderson Township Practice Range)	0 to 2 / 0 to 5 ac (Indian Valley Golf & LMR Golf Center*)	2 to 3 / 20 to 28 ac (Homestead Stables & two township greenspaces*)	

Table 5.7. Preliminary Impact Assessment (Range of Impacts) For Highway Alternatives in Segment II/III by Sub-Segment



Table 5.7. Preliminary Impact Assessment (Range of Impacts) For Highway
Alternatives in Segment II/III by Sub-Segment

		Range of I	mpacts for Alterr	natives within Su	b-Segment
Impact Category (see Table 5.1 for category description)	Unit	US 50/River Crossing Sub-Segment (Alternatives C, D, E and F; 400' corridor widths)	River Plains Sub-Segment (LMR to Newtown Road; Alternatives G, H, I, J, K and L; 400' corridor widths)	Round Bottom/Ancor Sub-Segment (Newtown Road to E of Round Bottom; Alternatives M, N, O and P; 400' corridor widths)	Mt. Carmel Hill Sub-Segment (E of Round Bottom to Mt. Carmel-Tobasco Road; Alternatives Q, R S and T; 500' to 800' widths)
Hazardous Material Concern Sites	#	0 to 1 (5600 Wooster Pike, Hafner & Sons)	0	0	0 to 1 (Burger Environmental, Newtown Landfill)
Land Use and Farmland					
Residential Use	acres	0 to12	2 to 20	1 to 7	64 to 110
Commercial Use	acres	1 to 2	1.6 to 2	1 to 16	11 to 22
Industrial Use	acres	0 to 2	0 to 3	36 to 53	13 to 35
Agricultural Use	acres	4 to 71	15 to 33	0	11 to 16
Agricultural District Parcels	#	2 to 5	1 to 6	0	2
Existing Transportation Use	acres	12 to 31	2 to 7	3 to 6	1 to 17
Educational Use	acres	0	0	0	0
Institutional Use	acres	0	0 to 0.1 (church)	0 to 1 (churches, board of trustees)	1 to 3 (board of trustees
Cultural Resources					
National Register Property (Section 4(f) resource described in Chapter 5.3)	#	0	0	0 to 1 (Odd Fellow's Cemetery Mound)	0
National Register District (Section 4(f) resource described in Chapter 5.3)	#	1 to 2 (Mariemont, Hahn Districts)	1 to 2 (Hahn, Perin Districts)	0 to 1 (Perin)	0
Other Historic or Archaeological Resources	#	1 to 3	3 to 6	0-4	1 to 4
Archaeological Sensitivity (High, Moderate, Low)	acres	23 to 59, 10 to 24, 7 to 14	29 to 59, 0 to 12, 1 to 13	9 to 33, 0, 26 to 54	33 to 50, 50 to 75, 42 to 80
Socioeconomic Factors					
Potential Residential Displacements	#	0	1 to 32 and 0 to 1 multi-family	0 to 26 and 0 to 2 multi-family	21 to 42 and 3 multi-family
Potential Commercial and Industrial Displacements	#	0 to 3	1 to 5	5 to 15	7 to 16
Potential Institutional Displacements	#	0	0	0 to 1 (county office)	1 to 3 (churches)
Environmental Justice	2000 Cen. Pop.	Low Income, Elderly, Disabilities	Low Income, Elderly, Disabilities	Low Income, Elderly, Disabilities	Low Income, Elderly, Disabilities
Air Quality, Noise and Visua	-	es			
Air Quality		Regional Conformity	Regional Conformity	Regional Conformity	Regional Conformity



Table 5.7. Preliminary Impact Assessment (Range of Impacts) For Highway
Alternatives in Segment II/III by Sub-Segment

		Range of Impacts for Alternatives within Sub-Segment						
Impact Category (see Table 5.1 for category description)		US 50/River Crossing Sub-Segment (Alternatives C, D, E and F; 400' corridor widths)	River Plains Sub-Segment (LMR to Newtown Road; Alternatives G, H, I, J, K and L; 400' corridor widths)	Round Bottom/Ancor Sub-Segment (Newtown Road to E of Round Bottom; Alternatives M, N, O and P; 400' corridor widths)	Mt. Carmel Hill Sub-Segment (E of Round Bottom to Mt. Carmel-Tobasco Road; Alternatives Q, R, S and T; 500' to 800' widths)			
Highway Noise – Potentially Impacted Receptors		Cat B = 0 $Cat C = 0 to 2$	Cat B = 5 to 34 Cat C = 4 to 8	Cat B = 2 to 30 Cat C = 11 to 18	Cat B = 25 to 49 Cat C = 2 to 5			
Rail Noise – Potentially Impacted Receptors Cat 1 = high Cat 2 = mod Cat 3 = low sensitivity (see Table 5.1)	#	Cat 1 = 2 to 6 Cat 2 = 0 to 5 Cat 3 = 0 to 2	Cat 1 = 1 to 4 Cat 2 = 18 to 59 Cat 3 = 2 to 6	Cat 1 = 0 to 1 Cat 2 = 7 to 39 Cat 3 = 1 to 5	Cat 1 = 3 to 5 Cat 2 = 69 to 102 Cat 3 = 5 to 6			
Vibration – Potentially Impacted Receptors Cat 1 = high Cat 2 = mod Cat 3 = low sensitivity (see Table 5.1)	#	Cat 1 = 0 Cat 2 = 0 Cat 3 = 0 to 1	Cat 1 = 0 Cat 2 = 2 to 44 Cat 3 = 0	Cat 1 = 0 to 1 Cat 2 = 0 to 22 Cat 3 = 0 to 1	Cat 1 = 0 Cat 2 = 18 to 41 Cat 3 = 0 to 2			
Visually Sensitive Resources		Little Miami River and associated natural features	Little Miami River bottomland; local parks; NR Districts (Hahn, Perin)	Broadwell Woods (along north side of SR 32 hill); Indian Valley Golf Center	Dry Run bottom area; Broadwell Woods (along north side of SR 32 hill); township greenspaces			

Segment IV: Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road (Eastgate)

Three feasible alternatives, determined to be representative of the different configurations under consideration for the Eastgate area, were evaluated for preliminary impacts. These included: Alternative I (IV) - a configuration replacing the existing I-275/SR 32 interchange with full directional fly-over ramps, Alternative P(IV) - a configuration consisting of a relocated I-275/SR 32 interchange, and Alternative Q-3(IV) - a configuration consisting of collector-distributors along I-275 and SR 32. There are possible minor variations within these three basic alternatives, as well as the possibility for phasing various portions of the alternatives in over time, but these possible variations are accounted for in the reported ranges of impacts. All three configurations also incorporate different localized road improvements, as described in Chapter 3.4.1. Preliminary impacts associated with the three Eastgate alternatives are summarized in Table 5.8. Estimated right-of-way widths used for assessing impacts are as follows:

Alternative I(IV)	Estimated Right-of-Way Width Used in Impact Analysis
I-275 improvements:	400 feet along mainline, wider (variable) at interchange locations
SR 32 improvements:	300 feet along mainline, wider (variable) at intersections
Side road improvements:	100 feet



<u>Alternative P(IV)</u> I-275 relocation: SR 32 improvements: Side road improvements:	300 feet along mainline, wider (variable) at interchange locations 300 feet along mainline, wider at interchange/intersections 100 feet
<u>Alternative Q-3(IV)</u> I-275 improvements: SR 32 improvements: Side road improvements:	350 feet along mainline, wider (variable) at interchange locations 400 feet along mainline, wider at interchange/intersections 100 feet

Table 5.8. Preliminary Impact Assessment For Highway Alternatives in Segment IV
(Eastgate Area)

Impact Category	Unit Alternativ		tive I(IV)	Alternat	ive P(IV)	Alternativ	ve Q-3(IV)
(see Table 5.1 for category description)		I-275/ SR 32	Side Roads	I-275/ SR32	Side Roads	I-275/ SR 32	Side Roads
Ecological Features and Haz	ardous M	laterials:					
USGS Streams in Corridor	#	2 (Hall Run and Salt Run tributary)	5 (Shayler Run and tributary, Hall Run, 2 Salt Run tributaries)	2 (Hall Run and tributary)	6 (Hall Run and 1 tributary, 2 Salt Run tributaries, Shayler Run and tributary)	2 (Hall Run and Salt Run tributary)	5 (Hall Run, 2 Salt Run tributaries, Shayler Run and tributary)
Estimated Stream Length within Alternative Corridor (crossing/parallel)	linear feet	260 / 0	490 / 80	2,250 / 0	680 / 0	250 / 0	520 / 0
Floodplain	acres	0	0	0	0	0	0
Sole Source Aquifer (BVAS)	acres	0	0	0	0	0	0
Public Water Supplies	#	0	0	0	0	0	0
Wetlands	acres	0	0.03 (Cat 1)	0.1 (Cat 2)	0.1 (Cat 1)	0.1 (Cat 2)	0.2 (Cat 1 & 2)
Surveyed Woodlands	acres	0	0.1	0	0.1	0	0.1
Known Federal/State Listed Species	#	0	0	0	0	0	0
Parks and Greenspace (* indicates public owned facility/Section 4(f) resource described in Chapter 5.3)	# / acres	0	2 / 0.24 Maquier Field, Veteran's Memorial Park*)	0	1 / 0.1 (Maquier Field)	0	2 / 2.2 (Maquier Field, Veteran's Memorial Park*)
Hazardous Material Concern Sites	#	2 (Vivi Color, Lucas Variety)	1 (Vivi Color)	1 (Vivi Color)	0	2 (Vivi Color, Lucas Variety)	1 (Vivi Color)
Land Use and Farmland							
Residential Use	acres	49.0	48.9	140.1	72.1	48.2	59.0
Commercial Use	acres	61.4	31.6	65.3	34.0	73.7	43.3
Industrial Use	acres	8.0	3.4	1.0	4.2	7.7	3.8
Agricultural Use	acres	3.8	6.1	4.1	12.1	2.6	13.8
Agricultural District Parcels	#	0	0	0	0	0	0
Existing Transportation Use	acres	303.3	21.3	124.6	30.5	266.1	39.8



		(Ea	astgate Ar	ea)			
Impact Category	Unit	Alterna	tive I(IV)	Alternat	Alternative P(IV) Alternative C		
(see Table 5.1 for category description)		I-275/ SR 32	Side Roads	I-275/ SR32	Side Roads	I-275/ SR 32	Side Roads
Educational Use	acres	0	3.3 (Gleneste High School)	4.3 (Summer- side and Brantner Lane Elementary)	0	0	0
Institutional Use	acres	0.75 (churches)	7.5 (churches and board of trustees)	2.4 (churches)	3.0 (churches and board of trustees)	1.5 (churches)	3.4 (churches, board of trustees)
Cultural Resources							
National Register Property (Section 4(f) resource described in Chapter 5.3)	#	0	0	0	0	0	0
National Register District (Section 4(f) resource described in Chapter 5.3)	#	0	0	0	0	0	0
Other Historic or Archaeological Resources	#	1	2	2	1	1	2
Archaeological Sensitivity (High, Moderate, Low)	acres	31, 4, 369	20, 2, 96	22, 1, 249	18, 2, 116	18, 2, 370	21, 2, 124
Socioeconomic Factors:		•					
Potential Residential Displacement	#	49	19	233 and 6 multi-family	67 and 2 multi-family	40 and 1 multi-family	23
Potential Commercial/ Industrial Displacement	#	28	8	25	11	43	9
Potential Institutional Displacement	#	1	0	5 (two churches, two school boards, one church related)	0	2 (one church, one healthcare)	1 (township trustees)
Environmental Justice	2000 Cen. Pop.	Low Income, Elderly	Low Income, Elderly	Low Income, Elderly	Low Income, Elderly	Low Income, Elderly	Low Income, Elderly
Air Quality, Noise and Visua		ces					· ·
Air Quality		Regional Co	nformity	Regional Cor	formity	Regional Cor	nformity
Highway Noise – Potentially Impacted Receptors		Cat B = 374 Cat C = 104	Screening not conducted for side road alternatives	Cat B = 596 Cat C = 100	Screening not conducted for side road alternatives	Cat B = 375 Cat C = 105	Screening not conducted for side road alternatives
Rail Noise – Potentially Impacted Receptors Cat 1 = high Cat 2 = mod Cat 3 = low sensitivity (see Table 5.1)	#	Noise	impacts for rail t	ie-in to propose 5.4 (Wasson L	ed transit hub ir		

Table 5.8. Preliminary Impact Assessment For Highway Alternatives in Segment IV(Eastgate Area)



Table 5.8. Preliminary Impact Assessment For Highway Alternatives in Segment IV(Eastgate Area)

Impact Category Ur (see Table 5.1 for category description)	Unit	Unit Alternative I(Alternative P(IV)		Alternative Q-3(IV)	
		I-275/ SR 32	Side Roads	I-275/ SR32	Side Roads	I-275/ SR 32	Side Roads
Vibration – Potentially Impacted Receptors Cat 1 = high Cat 2 = mod Cat 3 = low sensitivity (see Table 5.1)	#	Vibration in			d transit hub in I e – Eastgate Are		nted in Table
Visually Sensitive Resources		none	none	none	none	none	none

5.1.5. Preliminary Impact Assessment For Bikeway

Most of the bikeway improvements proposed for the Eastern Corridor follow existing transportation routes and direct impacts are expected to be minor to none. New bike paths are proposed on new alignment at several locations. Impact assessment consisted of the identification of environmental features expected to be associated with these bike paths based on secondary sources and, where available, Tier 1 field studies. Results are summarized in Table 5.9:

New Bike Path location	Key Environmental Concerns in General Area
From Newtown Road extending west across the Little Miami River floodplain to Red Bank Road (following the proposed relocated SR 32 roadway alignment; with a connection to Batavia Road and a connection to Ault Park)	Streams (Little Miami River and tributary, Duck Creek and tributary) & 100-yr floodplain, Buried Valley Aquifer System (BVAS), Sole Source Aquifer, wetlands (Wetlands 9 and 29), parks and public lands (Little Miami Golf Center, Short Park, Clear Creek Park, Horseshoe Bend Preserve, Ault Park, Woodland H), Threatened and Endangered species (<i>Desmodium pauciflorum</i>), agricultural lands; National Register Districts (Hahn and Perin), other cultural resources (properties recommended potentially eligible as a district), architectural sensitivity areas, high to moderate archaeological sensitivity
From Beechmont Avenue extending south to Kellogg Avenue (following Elstun Road along a portion of the Little Miami River State Scenic Park)	Streams (Clough Creek, three intermittent Little Miami River tributaries), Little Miami River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, quality forested area, parks and public lands (Little Miami River State Scenic Park, Elsturn Recreational Area, Elsturn Road open space, Magrish Recreational Area), agricultural lands, NR District (Clough Creek and Sand Ridge), other cultural resources (OHI site), architectural sensitivity areas, moderate archaeological sensitivity
From downtown Cincinnati extending east along the Ohio River to Kellogg Avenue near Lunken Airport (Ohio River Bike Trails)	Ohio River 100-yr floodplain, Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Sawyer Point Park, International Friendship Park, Schmidt Field), other cultural resources (properties recommended potentially eligible as individual properties, OHI sites), architectural sensitivity areas, moderate archaeological sensitivity

Table 5.9. Qualitative Impact Assessment for Proposed Bikeway on New Alignment

Airport vicinity



New Alignment	
New Bike Path location	Key Environmental Concerns in General Area
From Newtown Road extending south to Five Mile Road	Streams (two intermittent Clough Creek tributaries), parks and public lands (Hamilton County open space, greenspace, Turpin High School)
Through Terrace Park following abandoned rail corridor (extension of the Little Miami River Scenic Trail)	Streams (two intermittent Little Miami River tributaries), Buried Valley Aquifer System (BVAS) Sole Source Aquifer, parks and public lands (Terrace Park open space, Terrace Park Swimming Club, St. Thomas Episcopal Church, Indian Hill greenspace, Elm Avenue Park, Kroger Hills, Whitacre Park), other cultural resources (OHI sites), architectural sensitivity areas, high to moderate archaeological sensitivity
Through Otto Armleder Memorial Park, with connection to planned bike trail along US 50/Wooster Pike and link to existing trails in the Lunken	Stream (Duck Ceek), Little Miami River and Duck Creek 100-year floodplain, Buried Valley Aquifer System (BVAS) Sole source Aquifer, parkland (Otto Armleder Memorial Park), hazardous materials concern site (Norwood Dump)

Table 5.9. Qualitative Impact Assessment for Proposed Bikeway on New Alignment

5.2. PRELIMINARY IMPACT ASSESSMENT BY AREA

Chapter 5.1 summarized preliminary impacts for feasible alternatives by mode, including TSM, bus, rail, highway and bikeway. Using information presented in the impact tables included in Chapter 5.1, this section of the DEIS presents a discussion of impacts from a multi-modal standpoint for each of the six geographic areas within the Eastern Corridor.

The discussion in Chapter 5.2 does not report additional impacts to those presented by mode in Chapter 5.1, but rather is an overview of the key impacts expected by all of the modes under consideration within a particular Eastern Corridor geographic area (in other words, impacts are not double-counted).

5.2.1. Area #1: Wasson/Red Bank Road (from I-71/Xavier To Red Bank Road/US 50)

Summary Of Multi-Modal Components for Area #1

The multi-modal transportation plan in this area, described in Chapter 3.4.2, is a combination of TSM improvements on the existing roadway network, new future rail transit (Wasson Line) extending along an existing rail corridor from the planned I-71 LRT near Xavier/Evanston to US 50, with future rail stations at Madison Road and Paxton Avenue, expanded bus service and new bus circulator routes with new bus hubs in Oakley and Madisonville, new bike routes, and highway capacity improvements along Red Bank Road, including a new interchange at Red Bank Road/US 50, improved intersections or new interchanges at Madison Road and Erie Avenue, and local side road improvements.



Existing Conditions

The Wasson/Red Bank area encompasses portions of the communities of Fairfax, Madisonville, Oakley, Norwood, Evanston, O'Bryonville, Mt. Lookout and the City of Cincinnati. The area is heavily developed, consisting of single family residential neighborhoods, and, along the Red Bank Road corridor, a mix of commercial, retail and industrial development, some of which are identified brownfield sites. An existing rail corridor parallels Wasson Road from I-71 east to the existing Red Bank/US 50 interchange. Several schools and institutions occur in the area, including Xavier University, Withrow High School, Children's Home, John Parker Elementary and Seven Hills School. Recreational and greenspace facilities in the area include Ault Park, the Hyde Park and Cincinnati County Clubs, and the Madisonville Recreation Center. Natural habitats and ecological resources are limited.

Key Environmental Issues and Impacts for Area #1

Key environmental resources and issues of concern in the Wasson/Red Bank area include the following:

Existing Development: A key concern in this area is the potential for adverse impacts to existing residential, commercial and industrial development, and for providing adequate access to these developed areas and potential re-development areas. Based on information presented in Table 5.6, an estimated 10 to 79 residences and 29 to 51 commercial and industrial properties may be displaced by highway improvements in this area - using the least and worst case combination of mainline alternative, Red Bank Road/US 50 interchange options and side road improvement options currently under consideration for this area. An additional five single family residences, one multifamily residence and three commercial and industrial properties may be displaced by the future Wasson Rail Transit alternative. Other properties may also be affected at locations by future rail station locations will be further quantified in Tier 2 on a project-by-project basis. Several school properties are clipped by roadway alternatives under consideration in this area, including Seven Hills School and John Parker Elementary. No school building takes are currently expected by this encroachment by any of the alternatives in Area #1.

Adverse impacts to existing development described above are expected to be offset, to some extent, by the proposed multi-modal plan by: 1) improving highway capacity and reducing congestion along the Red Bank corridor, providing better connectivity for surrounding neighborhoods to both I-71 and SR 32, and improving safety, 2) developing new service roads and local road improvements to provide improved access management and potential for development and redevelopment, 3) developing new rail transit, new bus routes and new bikeway connections in the area to provide alternative transportation modes consistent with anticipated development patterns.

 <u>Ecological Resources and Parkland:</u> Ecological resources in the Wasson/Red Bank area are limited due to extensive development. TSM, expanded bus and highway capacity improvements will result in encroachment on mapped boundaries of the Buried Valley Aquifer System (BVAS) Sole Source Aquifer, which encompasses most of the area, and, to a lesser degree, mapped FEMA floodplains along Duck Creek. Minimization and mitigation of aquifer and floodplain impacts will be further developed during Tier 2 of the Eastern Corridor study on a project-by-project basis, and as individual projects are forwarded into detailed design.

Estimated stream impacts for the Wasson/Red Bank area range from 3,974 to 9,335 linear feet for proposed highway improvements, using the least and worst case combination of mainline alternative, Red Bank Road/US 50 interchange options and side road improvement options currently under



consideration for this area. An additional 230 linear feet of stream will be impacted by rail transit under consideration in this area. However, it should be noted that preliminary impacts to streams reported in Tier 1 are based on total alternative corridor widths, and therefore represent maximum impacts expected. Stream lengths reported in the impact tables in Chapter 5.1 are designated as "crossings" or "parallel". Crossing lengths represent impacts that are likely unavoidable (alignment crosses perpendicular to stream), however, actual impacts will be less, and may be substantially less in some places, when final impacts are determined during detailed design. Parallel lengths, which comprise a substantial portion of the preliminary impacts in this area (2,744 to 5,520 linear feet; see Tables 5.4 and 5.6), are most uncertain at this stage in project development; these stream lengths may actually be avoided, or re-channeled only in part when it comes down to detailed design development during Tier 2.

Overall, most streams in the Wasson/Red Bank area are modified or disturbed to some degree due to adjacent development. As noted in Chapter 4.1.4, QHEI's for sampled streams ranged from about 47 (for Duck Creek tributaries) to about 69 (for Duck Creek mainstem), falling into the range of Modified Warmwater and Warmwater Habitat, respectively. All the USGS streams in this area have been either culverted and/or re-channeled for portions of their length. Avoidance, minimization and mitigation of stream impacts, including assessment of impacts to headwater features, will be further evaluated during Tier 2.

Highway improvements and future rail transit in the Wasson/Red Bank area are expected to have minor impacts on other ecological features, including wetlands and Tier 1 surveyed woodlands (generally less than 5 acres of wetland and less than 10 acres of woodland impacted; see Tables 5.4 and 5.6). Other woodlands, not surveyed during Tier 1 field studies, may also be affected; woodland impacts will be further evaluated on a project-by-project basis in Tier 2. Several alternative corridors clip the edge of Ault Park, a public-owned facility and Section 4(f) resource (see Chapter 5.3 for further discussion of Section 4(f) resources).

<u>Cultural Resources:</u> One National Register District, the Mariemont Historic District, occurs partially within several highway alternatives under consideration in the vicinity of the Red proposed Bank/US 50/Wooster Pike interchange. A second National Register District, the Cincinnati Gas Lamps Historic District, occurs partially within the future Wasson Rail Transit corridor. These Section 4(f) resources are further described in Chapter 5.3. No other known National Register properties are impacted by alternatives proposed for the Wasson/Red Bank area.

Six other cultural resources occur in and along the future Wasson Rail Transit corridor, and up to eight other cultural resources occur within the highway corridors under consideration in this area (see Tables 5.4 and 5.6). These resources consist of previously surveyed historic and archaeological (OAI and OHI) sites on file with the Ohio Historic Preservation Office, and new sites identified from windshield surveys conducted during Tier 1 cultural studies (Gray and Pape, December 2002). The National Register eligibility of these resources has not been determined, but will be further evaluated during Tier 2 of the Eastern Corridor study if impacted.

- <u>Hazardous Materials Concerns:</u> One hazardous materials concern site occurs in the future Wasson Rail Transit corridor, and up to five concern sites occur within the highway/rail corridors under consideration in this area. These sites, described in Chapter 4.1.10, include: BASF, Inc., Racking & Sharpening Services, Creast Craft, Electric Services, Inc., Schulte Metal and Hafner & Sons Landfill. Several of these sites are identified as target brownfield areas. Each of these sites, if impacted, will be further evaluated during Tier 2 to determine if hazardous materials are actually present, their significance, and mitigation, as necessary.
- <u>Noise and Vibration</u>: Potential impacts to residences and businesses related to noise and vibration generated from rail, bus transit and roadway improvements are also a concern in this area. The number of potentially impacted noise (roadway and rail) and vibration (rail) receptors occurring in the area are presented in Table 5.4 and Tables 5.6 through 5.8. Further noise and vibration studies will



be conducted in Tier 2 to determine actual impacts and appropriate mitigation/abatement measures, as necessary.

Visual Resources: Ault Park is clipped by several of the transportation alternatives under consideration in this area. Views from the east side of the park east towards Red Bank Road, which currently consist of a primarily wooded hillside vista, will be modified by improvements needed for a future rail corridor (Wasson Line) tie-in to the proposed Red Bank/US 50/Wooster Pike interchange area. No other adverse visual impacts are expected within this area. Overall, the visual quality of the area is expected to improve because of the landscaping/streetscape measures proposed for the improved Red Bank Road corridor, which will be further developed during Tier 2.

Preliminary Mitigation Issues for Area #1

Further evaluation of avoidance and minimization of impacts to environmental features in the Wasson/Red Bank area will be conducted on a project-by-project basis during Tier 2 when more detailed alignment alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Wasson/Red Bank area for which mitigation and/or permit preparation may be required during further project development, if determined to be impacted, include:

- streams and wetlands Section 404/401 permits and required compensatory mitigation
- sole source aquifer avoidance, minimization and mitigation requirements
- FEMA floodplain permit requirement
- highway/rail noise and rail vibration possible abatement
- parkland and cultural resources Section 4(f)/Section 106 evaluation and coordination
- potential hazardous materials possible waste management or other mitigation

Land Use Fit and Secondary and Cumulative Impact Considerations

<u>Fit of Multi-Modal Alternatives with Eastern Corridor Land Use Plan:</u> Priority land use issues for the Wasson/Red Bank area identified in the Eastern Corridor land use vision plan are summarized in Chapter 1.8.1.

In general, proposed TSM improvements, improvements to Red Bank Road, a new Red Bank/US 50/Wooster Pike interchange/multi-modal convergence area, and special purpose lane/access road improvements along the length of the Red Bank corridor support the land use vision priority for creating better connectivity to this area from both I-71 and SR 32, and better connectivity for the City of Fairfax and surrounding neighborhoods. Establishment of a controlled access facility may limit retail development in the area (no direct access points for individual stores) and may subsequently encourage office and industrial development along existing Red Bank Road, including potential opportunity for re-development of several target brownfields sites other vacant land, and potential development of new greenspace areas. Proposed landscaping along improved Red Bank Road supports the land use vision priority for creating bike trail connections, specifically to Ault Park.



In addition, the future Wasson rail transit line and placement of bus hubs in the Xavier/Evanston, Oakley and Madisonville vicinities, with supporting bus feeder and circulator routes, support the land use vision priority for creating pedestrian connections within and to the surrounding areas of these communities, and may support revitalization of portions of these communities as mixed-use pedestrian-friendly neighborhood destinations. Joint development areas included within planned bus hub footprint (for facilities such as job training, day care, drugstore, etc.) will also support these priorities.

<u>Secondary and Cumulative Impact Considerations:</u> As noted above, multi-modal transportation alternatives developed for the Wasson/Red Bank area during Tier 1 of the Eastern Corridor study are compatible with local long range planning. Planned future land use in this area does include some level of development, in accordance with local zoning and locally identified land use priorities adopted from the Eastern Corridor land use vision plan, including office and industrial growth and community re-vitalization.

Feasible modal alternatives for the Wasson/Red Bank area have been developed, to date, with emphasis on avoidance and minimization of impacts to environmental resources. As this project progresses to more detailed alignment development in Tier 2, impacts to environmental features will be further minimized in accordance with NEPA requirements. Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Residential and business relocations occurring as a result of a preferred alternative identified in Tier 2 will be conducted in compliance with all state and federal directives. Loss of local tax revenue and economic productivity due to the conversion of any residential and business properties to transportation right-of-way may be offset by other economic benefits realized from proposed improvements in transportation infrastructure (which may include localized increases in property values and tax revenue from economic development). In addition, detailed noise and vibration studies will be conducted in Tier 2 on a project basis to determine actual noise and/or vibration impacts, and appropriate mitigation/abatement measures will be developed, as necessary.

Several characteristics of urban environments have been identified as being associated with beneficial environmental results (USEPA, January 2001). Three such characteristics are demonstrated (provided opportunity for) by the multi-modal transportation plan proposed for the Wasson/Red Bank area, including:

- Compact development: Planned development along the Red Bank Road corridor, which can be supported by proposed Eastern Corridor transportation improvements, encourages infill development and redevelopment of target brownfields in the area, rather than disturbance of greenspace or other natural areas, and minimizes further habitat fragmentation.
- Reduced new impervious surfaces and improved water detention: Proposed transportation improvements and planned redevelopment in this area will mostly occur within existing transportation corridors and previously developed areas (with existing infrastructure in place), thereby minimizing the need for creation of new impervious surface. In addition, proposed landscaping along improved Red Bank Road will help reduce runoff, and may help retain soil moisture and conserve water usage.
- Transit accessibility, support for pedestrian and bicycle activity and mixed land uses: Bus and rail transit improvements and new bikeway proposed for this area offer greater mode choices and provide opportunity for possible creation of pedestrian-friendly neighborhoods centered around



transit hub locations, and mixed-use development. This may in the long-term reduce the overall vehicle miles traveled within individual neighborhoods in the Wasson/Red Bank area and/or the Eastern Corridor as a whole, and associated adverse environmental impacts.

Based on these considerations, preliminary assessment indicates that the proposed multimodal transportation improvements for the Wasson/Red Bank Road area will result in an efficient and land-use supportive transportation infrastructure that addresses both existing and future transportation needs and existing and planned development in the area. Further evaluation of potential indirect and cumulative impacts will be addressed in Tier 2 in conjunction with more detailed alignment development, impact assessment, preferred alternative selection and detailed design.

5.2.2. Area #2: Ohio 32/Wooster West (from Red Bank/US 50 To Ancor/Mount Carmel Hill)

Summary Of Multi-Modal Components for Area #2

The multi-modal transportation plan in this area, described in Chapter 3.4.2, is a combination of TSM improvements on the existing roadway network (including portions of Newtown Road, Round Bottom Road and Wooster Pike), relocated SR 32 on new alignment with parallel transitway, bike/pedestrian paths and a shared crossing of the Little Miami River, expanded bus routes, new bus circulator routes, a shared bus/rail transit hub in the Newtown area, and a rail station located along Broadwell Road in the Ancor vicinity.

Existing Conditions

The Ohio 32/Wooster West area encompasses the communities of Newtown and Shademore, a portion of Anderson Township, and the south edges of the communities of Fairfax, Mariemont and Indian Hill. The area is a mix of land uses and disturbances, including residential, commercial and extensive industrial development in Newtown and east of Newtown, wooded stream corridor and agricultural land along the Little Miami River and broad floodplain to the west and north of Newtown, and wooded uplands with developing residential areas to the south of Newtown and to the north and south of existing SR 32 along the Mt. Carmel hillside. This area contains a number of recreational and natural areas including public and privately owned golf courses, ball/soccer fields and other parkland, and the Horseshoe Bend preserve. Also occurring in the area is extensive gravel mining and other industrial development in the Ancor area to the east of Newtown, and active landfills along Wooster Pike to the west of the Little Miami River, and along existing SR 32 (on the south side) just east of Newtown. These industrial areas and landfills are target brownfield sites. This area is sensitive for cultural resources, especially along the Little Miami River floodplain, and in and around Newtown.



Key Environmental Issues and Impacts for Area #2

Key environmental resources and issues of concern in the Ohio 32/Wooster West area include the following:

Little Miami River: A key concern in the Ohio 32/Wooster West area is crossing of the Little Miami River and potential encroachment on associated/adjacent features, including floodplain, sole source aquifer, special aquatic sites, endangered species habitat, agricultural land, wetlands, woodland and parkland. Overall, the Little Miami River within the Eastern Corridor is a State Scenic River, a state-administered component of the national wild and scenic river system (recreational classification), and an OEPA Exceptional Warmwater Habitat. The Little Miami River in the project area has been determined to be outside the U.S. Coast Guard Section 9 jurisdictional boundaries (see USCOE coordination letter in Appendix C).

Overall, the Eastern Corridor project involvement with the Little Miami River may require resource agency coordination in accordance with Section 404/401 of the 1972 Federal Clean Water Act (as amended in 1977), Section 7 of the National Wild and Scenic Rivers Act, Section 1517.16 of the Ohio Revised Code (ODNR scenic rivers approval), and/or Section 4(f) involvement under the 1966 U.S. Department of Transportation Act.

Tier 1 ecological studies conducted for the Eastern Corridor included collection and evaluation of secondary source information on the Little Miami River and general characterization of stream/riparian conditions within the study area from field surveys, as presented in Chapter 4.1.4 of this DEIS and described in the Ecological Resources Inventory Report, Eastern Corridor Multi-Modal Projects (Balke American, February 2003) and Addendum to Tier 1 Environmental Studies (Balke American, June 2003). Additional detailed field studies and site-specific stream assessments will be conducted during Tier 2 when more alignment specific stream crossing information and detailed design is developed.

Preliminary evaluation of the expected cumulative impacts of the Eastern Corridor project on the Little Miami River's free-flowing character, water quality and designated ORV's is presented in Chapter 5.6. Preliminary direct impacts to the Little Miami River channel and water quality are described below:

O Channel Impacts - All feasible alternatives for relocated SR 32 cross the Little Miami River mainstem, however, no direct channel impacts will occur due to use of a clear span crossing, and riparian disturbance will be minimized by use of a crossing area shared by the proposed relocated SR 32 roadway and parallel transitway. No bridge piers will be placed within the river channel and no instream impacts to the Little Miami River (i.e., no Ordinary High Water [OHW] impacts) are anticipated. This conceptual design of the bridge over the Little Miami River under consideration at this stage of project development has established that the structural crossing will provide a clear span over the river channel and immediate riparian area. It is not known at this time if a temporary instream crossing structure will be needed during bridge construction; final determination will not be made until Tier 2 when further engineering details are developed.

Four general crossing areas, representing the range of possible crossing locations for the project, are under consideration at this time, including: 1) a crossing north (upstream) of the Horseshoe Bend area, 2) a crossing through the Horseshoe Bend area, 3) a crossing along the south (downstream) edge of Horseshoe Bend, or 4) a southernmost crossing location about 3,000 feet downstream from the Horseshoe Bend. As noted in Chapter 4.1.4, the calculated QHEI for the Little Miami River based on Tier 1 field studies ranged from a score of about 64 downstream of the Horseshoe Bend, to about a score of about 82 upstream of



the Horseshoe Bend. The downstream segment met criteria for Warmwater Habitat and the middle and upstream segments met criteria for Exceptional Warmwater Habitat. Higher scores for the two upstream sections of the Little Miami River were primarily due to greater available instream cover within these reaches, and occurrence of special aquatic sites, including mudflats, vegetated shallows and pool/riffle complexes, and state-listed species. The lower QHEI score at the downstream reach of the Little Miami River was primarily attributable to lesser quality riparian and instream habitat at this location and gradient.

• Water Quality Impacts - Earthwork and bridge construction activities will result in short-term adverse impacts to the water quality of the Little Miami River, including temporary increases in dissolved solids, suspended solids, settleable solids, turbidity and conductivity. These impacts are expected to be localized (i.e., limited to the construction limit footprint), but may extend for some distance downstream, depending on intensity of disturbance and field conditions at the time of construction. Water quality impacts from construction activities will be further assessed in Tier 2 of the Eastern Corridor study. In general, impacts will be minimized through strict adherence to Best Management Practices (BMP's) for erosion control during daily construction activities and any other site specific mitigation developed in Tier 2 based on agency coordination and permit application.

Placement of the proposed relocated SR 32/rail transit corridor will create approximately 55 acres of new impervious surface along the Little Miami River floodplain from Red Bank/US 50 to Ancor/Mt. Carmel Hill (highway pavement and rail track width combined), and placement of two bus/rail transit station will create approximately 6.5 acres of new impervious surface. This will cause an increase in stormwater runoff in this area. Degree of impact will be further evaluated in Tier 2 of the project. In general, impacts will be addressed during further project development through minimization and mitigation measures proposed for the area, as described below, and any other site-specific mitigation developed in Tier 2 based on agency coordination and permit application.

- <u>Visual Resources:</u> Visually sensitive resources in Area #2 include the Little Miami River, associated floodplain features, and adjacent parkland and cultural resources. Views from the river and floodplain/park areas, which currently consist of an open agricultural and wooded riparian vista, will be permanently modified by placement of a roadway/transit corridor on new alignment where no facility currently exists.
- Other Ecological Features: TSM improvements, relocated SR 32 (with parallel transitway), expanded bus, and dedicated bike paths in this area will all result in encroachment on mapped boundaries of the Buried Valley Aquifer System (BVAS) Sole Source Aquifer which encompasses most of the area, agricultural land along the Little Miami River, and mapped FEMA floodplains along the Little Miami River and Dry Run. Minimization and mitigation of aquifer, floodplain and farmland impacts will be further developed during Tier 2 of on a project-by-project basis, and as individual projects are forwarded into detailed design.

Other ecological features potentially impacted by feasible alternatives under consideration in this area include wetlands, woodlands, streams, federal-listed species (potential habitat for Indiana bat) and state-listed species. Overall, wetland impacts are expected to be in the 1 to 7 acre range, and potentially impacted features are low to moderate quality wetlands.

Impacts to Tier 1 surveyed woodlands are expected to be around 20 acres (see Table 5.7). This includes impacts to two surveyed woodlands occurring along the Little Miami River riparian corridor/floodplain - Horseshoe Bend and an unnamed Clear Creek woodland (Woodland J from Tier 1 studies). Horseshoe Bend is encroached upon by two of the four feasible roadway/transit corridors under consideration in this area, and Woodland J is encroached upon by two of the six alternatives under consideration at this location. Additional woodland impacts are expected for all of the relocated SR 32 alternatives, particularly alternatives in the Mt. Carmel Hill Sub-Segment



(Alternatives Q, R, S and T); impacts to woodlands and habitat fragmentation will be further evaluated on a project-by-project basis in Tier 2 of the Eastern Corridor study.

Streams potentially impacted in this area, in addition to the Little Miami River, include Duck Creek, Duck Creek tributary, Clear Creek and Dry Run. Stream impacts, variable among alternatives, are expected to range from about 1,560 to 9,320 linear feet (using the least and worst case combination feasible alternative segments through this area). Calculated QHEI scores for stream reaches in this area ranged from about 47 for Duck Creek tributary, to 63-70 for Duck Creek mainstem, to 48-71 for Dry Run (Dry Run north of SR 32 exhibits the lower QHEI score, i.e., more disturbed conditions), falling into the range of Modified Warmwater to Warmwater Habitat. One alternative along the Little Miami River floodplain encroaches on the known location of the state-monitored red-eared slider occurring in Clear Creek.

Culvert placement, bridge placement and/or rechannelization of these smaller surface streams will result in similar short-term water quality impacts as noted for the Little Miami River (see above) and the following direct impacts: a) direct destruction of stream bottom and other aquatic habitat for the placement of culverts or piers and b) destruction or displacement of aquatic biota (depending on the mobility of the fishes and benthic organisms inhabiting the construction site) due to the placement of these structures. In addition, construction fuel storage, re-fueling activities and location of staging areas may adversely affect water quality of surface streams if a spill occurs and hazardous materials are not contained.

Overall, most of these features are characterized by existing stream disturbances/modification, and adverse impacts are not expected to be substantial. Avoidance, minimization and mitigation of stream impacts, including assessment of impacts to headwater features, will be further evaluated during Tier 2 of the Eastern Corridor study.

• <u>Cultural Resources:</u> Three National Register Districts are encroached upon by several of the relocated SR 32/transit alternatives and dedicated bikeways under consideration in and to the west of Newtown, including the Hahn Archaeological District, the Perin Village Site, and the Mariemont Historic District. Of these, the Hahn Archaeological District is encroached upon by all of the highway/transit corridors under consideration in the area (Alternatives C, D, E and F); however, there are varying degrees of encroachment on the recorded boundaries of this resource. These Section 4(f) resources are further described in Chapter 5.3. No other known National Register properties are impacted by alternatives proposed for the Ohio 32/Wooster West area; however, several individual National Register sites occur in the Newtown area that have been avoided.

Up to 17 other identified cultural resources are encroached upon by feasible alternatives under consideration in this area (see Table 5.7). These resources consist of previously surveyed historic and archaeological (OAI and OHI) sites on file with the Ohio Historic Preservation Office, and new sites identified from windshield surveys conducted during Tier 1 cultural studies (Gray and Pape, December 2002). The National Register eligibility of these resources has not been determined, but will be further evaluated during Tier 2, if impacted.

- <u>Parks and Greenspaces</u>: Up to seven public-owned parks are encroached upon by feasible alternatives under consideration in the Ohio 32/Wooster West area, including Mariemont Gardens, Little Miami River Golf Center, Clear Creek Park, Short Park, Old Fort Greenspace, and two Anderson Township greenspaces. These Section 4(f) resources are further described in Chapter 5.3. Up to four other privately-owned greenspaces are also encroached upon in the area, including Horseshoe Bend Preserve (privately-owned by the non-profit Little Miami River, Incorporated), Indian Valley Golf Inc., Anderson Township Practice Range and Homestead Stables.
- <u>Section 4(f)</u>, <u>Section 6(f)</u> and <u>Section 7 Issues</u>: The Ohio 32/Wooster West area contains a number of Section 4(f) resources potentially impacted by feasible alternatives under consideration, including several National Register Districts and public-owned parks. In addition, Short Park is a Section 6(f)



resource under the Land and Water Conservation Fund Act, and the Little Miami River will involve Section 7 coordination under the National Wild and Scenic Rivers Act, scenic rivers approval (ODNR) under Section 1517.16 of the Ohio Revised Code, and possible Section 4(f) involvement of the 1966 U.S. Department of Transportation Act.

Avoidance of encroachment on these resources was conducted to the extent practicable during development of feasible alternative corridors in Tier 1. However, two features, the Hahn Archaeological District and the Little Miami River, are expected to be crossed by the project regardless of alternative. The proposed crossing structure for the Little Miami River is a clear span bridge, and no direct impacts to the existing stream channel or immediate banks are anticipated. Official National Register boundaries for the Hahn District date back to 1974, and cover a broad, rectangular area covering about 690 acres. Further studies conducted during Tier 2 will be required to determine the occurrence and location of archaeological resources present in this area, and possible refinement of the National Register boundaries may be proposed for this site.

Section 4(f) is expected to be a key issue in the Ohio 32/Wooster West area due to the number and proximity of known cultural resources and parkland. Avoidance of one resource, for example, will in some circumstances result in encroachment on another Section 4(f) resource in the same vicinity, especially along the Little Miami River floodplain in the area west of Newtown. Avoidance and minimization of impacts to Section 4(f) resources, as well as scenic rivers and Section 6(f) resources, will be further evaluated in Tier 2 on a project-by-project basis, and unavoidable impacts will require the development of mitigation measures.

- <u>Existing Development:</u> A concern in the Newtown vicinity of the Ohio 32/Wooster West area is the potential for adverse impacts to existing residential, commercial and industrial development. Based on information presented in Table 5.7, potential displacements in the Newtown area consist of: a) west of Newtown Road 1 to 32 residences (plus up to one multi-family) and 1 to 5 commercial/industrial displacements, b) Newtown Road to Round Bottom Road 0 to 26 residences (plus up to two multi-family) and 5 to 15 commercial/industrial displacements, and c) Round Bottom Road to County Line 14 to 35 residences and 3 to 12 commercial/industrial displacements. Other properties may also be affected at the location where a rail station is proposed in the Ancor area, and at the location of a proposed bus/rail hub in the Newtown area; specific impacts related to bus and rail station locations will be further quantified in Tier 2 on a project-by-project basis.
- <u>Hazardous Materials Concerns</u>: Two hazardous materials concern sites are encroached upon by several of the relocated SR 32/rail transit alternative corridors under consideration in the Ohio 32/Wooster Pike area. These sites, described in Chapter 4.1.10, include: 5600 Wooster Pike (a reported hazardous materials spill) and the Burger Environmental/Newtown Landfill located along the south side of existing SR 32 just east of Newtown.

The Oasis rail leg extending north to Milford encroaches upon three additional hazardous material concern sites located along Broadwell Road in the Ancor vicinity, including the Bway/Heekin/Milton Can Company, Didier Taylor Refractories Corporation and Anderson Township Landfill. Another hazardous material concern site, the Hafner & Sons Landfill, occurs in the vicinity of the proposed new Red Bank/US 50/Wooster Pike interchange, and is included in the discussion for Area #1. This site is located south of Wooster Pike, immediately to the west of the Horseshoe Bend area, and is an identified target brownfield area. Each of the hazardous materials concern sites, if impacted, will be further evaluated during Tier 2 to determine if hazardous materials are actually present, their significance, and mitigation, as necessary.



<u>Noise and Vibration</u>: Potential impacts to residences and businesses related to noise and vibration generated from rail, bus transit and roadway improvements are a concern in this area, primarily in Newtown, and the residential and commercial development along existing SR 32 east of Newtown. The number of potentially impacted noise (roadway and rail) and vibration (rail) receptors occurring in the area by transportation mode and alternative are presented in Table 5.4 and Tables 5.6 through 5.8. Further noise and vibration studies will be conducted in Tier 2 of the project to determine actual impacts and appropriate mitigation/abatement measures, as necessary.

Preliminary Mitigation Issues for Area #2

Further evaluation of avoidance and minimization of impacts to environmental features in the Ohio 32/Wooster West area will be conducted on a project-by-project basis during Tier 2 when more detailed alignment alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Ohio 32/Wooster West area for which mitigation and/or permit preparation may be required during further project development, if determined to be impacted, include:

- Little Miami River Section 404 and Section 401 coordination, ODNR scenic rivers approval, Section 7 (National Wild and Scenic Rivers) coordination, possible Section 4(f) involvement, and compensatory mitigation
- streams and wetlands Section 404/401 permits and required compensatory mitigation
- sole source aquifer avoidance, minimization and mitigation requirements
- FEMA floodplain permit requirement
- highway/rail noise and rail vibration possible abatement
- parkland and cultural resources Section 4(f)/Section 106 and Section 6(f) evaluation and possible mitigation
- potential hazardous materials possible waste management or other mitigation

Mitigation Relative to the Little Miami River

<u>Considerations for the Little Miami River:</u> Mitigation of adverse impacts to the Little Miami River are of special concern in this area, and development of minimization and mitigation measures and agency coordination will be conducted since it is a State Scenic River and state-administered component of the national wild and scenic rivers system. Overall, the Eastern Corridor project involvement with the Little Miami River may require resource agency coordination in accordance with: Section 404/401 of the 1972 Federal Clean Water Act (as amended in 1977), Section 7 of the National Wild and Scenic Rivers Act, Section 1517.16 of the Ohio Revised Code (ODNR scenic rivers approval), and/or Section 4(f) involvement under the 1966 U.S. Department of Transportation Act. Coordination with the U.S. Coast Guard determined that a Section 9 bridge permit will not be required given a clear span crossing of the river within the project area (no Section 9 jurisdiction under the Rivers and Harbor Act; see Appendix C).

As described in Chapter 3.2, the Eastern Corridor MIS Task Force, during development of the MIS recommended multi-modal plan for the Eastern Corridor, evaluated alternatives and addressed issues and concerns related to a potential new crossing of the Little Miami River. This MIS review concluded with a consensus to include in the highway component of the MIS



the Eastgate area to US 50 in Fairfax, and including a new Little Miami River crossing near Red Bank Road/US 50. Nevertheless, the MIS Task Force continued to recognize concerns regarding potential environmental impacts of a new bridge over the Little Miami River, and outlined general provisions for mitigating adverse environmental impacts related to a new Little Miami River bridge crossing (see Chapter 3.2.2).

Little Miami River crossing and corridor preservation issues were also noted by the public during the Eastern Corridor land use vision process, and priority needs identified in the Eastern Corridor land use vision plan for focus areas in the project crossing vicinity included items such as preservation of land in the river plains for agriculture or open space, re-establishment of forested streamside corridors along the Little Miami River (for preservation and enhancement of water quality), preservation of hillsides along the Little Miami River's edge, floodplain protection, and moderation of stormwater runoff. In addition, resource agencies, specifically ODNR, emphasized that minimization and mitigation be developed for the project, and identified specific strategies for further evaluation (see below).

Based on the above, it has been recognized from the beginning of the project that emphasis be placed on minimization and mitigation of impacts to the Little Miami River at the project crossing location. As such, there is local expectation by the project stakeholders and public, and resource agency expectation, that this commitment for mitigation be carried forward from Tier 1 of the Eastern Corridor work phase to continued, more detailed development in Tier 2.

<u>Preliminary Mitigation Measures Under Consideration for the Little Miami River:</u> General mitigation measures for the Little Miami River under consideration in Tier 1 based on resource agency coordination and local stakeholder and public input to date, include the following:

- Clear spanning of the Little Miami River crossing area for shared roadway/rail transit use.
 - Maximizes right-of-way efficiency and minimizes disruption of the Little Miami River.
- Stream mitigation such as restoration, preservation or other measures within the Little Miami River watershed, which may include land acquisition, placement of conservation easements or other measures (to be determined during the 404/401 permit process).
- Controlled access throughout this section of relocated SR 32, with no new access points through the Little Miami River crossing area (except for recreational purposes).
 - Protects the Little Miami River and adjacent bottom area and floodplain from development and reduces the potential for impacts associated with urban development (such as increased impervious surfaces and stormwater discharges).
- Incorporation of special design measures to allow for the unimpeded Little Miami River 100-year flood event.
 - Minimizes modifications to the natural flow of the Little Miami River and reduces potential for hydrological modifications, channel instability and degradation of in-stream habitat.
- Development of stringent Best Management Practices for implementation during bridge construction (such as sediment and erosion control practices, project phasing, minimization of vegetation clearing, etc.), including rigid application of ODOT's Construction and Materials Specifications for temporary sediment and erosion controls (Item 207; ODOT, 2002) and adherence to the project



Stormwater Pollution Prevention Plan (SWPP). National Pollution Discharge Elimination System (NPDES) storm water permit application and coordination with OEPA will be conducted for the project for compliance with the Clean Water Act and current provisions of the Ohio Water Pollution Control Act (Ohio Revised Code [ORC] Chapter 6111) per ODOT's Construction and Materials Specifications for environmental protection (Item 107.19; ODOT, 2002).

• Development of a special committee to assist in the development and review of Little Miami River mitigation activities during Tier 2 of the Eastern Corridor project.

<u>Development of a Eastern Corridor Environmental Mitigation Plan:</u> The preliminary mitigation described above for the Little Miami River will be further developed during Tier 2 of the Eastern Corridor study in conjunction with further engineering and alignment development, preferred alternative selection, agency coordination, and stakeholder and public input. Mitigation developed for the project will be consistent with state and federal requirements, and may be in part administered at the local level in conjunction with other local preservation, mitigation or enhancement plans, with a combination of local, state and/or federal funding, as applicable.

A key strategy of the Eastern Corridor mitigation plan is to integrate mitigation measures developed for the project with local land use, watershed, greenspace and other environmental protection/preservation programs. This stitching together of project mitigation with local environmental protection efforts will provide framework for effective implementation of the mitigation plan and multi-jurisdictional participation in the plan. Commitment to further develop this mitigation is included in Chapter 8.

Land Use Fit and Secondary and Cumulative Impact Considerations

<u>Fit of Multi-Modal Alternatives with Eastern Corridor Land Plan:</u> Priority land use issues for the Ohio 32/Wooster West area identified in the Eastern Corridor land use vision plan are summarized in Chapter 1.8.1.

In general, controlled access for proposed relocated SR 32, including no new access points along the Little Miami River, use of a parallel highway/transit corridor with a single river crossing, incorporation of Little Miami River stream mitigation measures (to be further developed in Tier 2), and creation of bus circulator/feeder routes to serve rail transit will maximize right-of-way efficiency and support the land use priorities for: 1) preservation of land in the river plains for agriculture or open space, and potential support for possible redevelopment of identified brownfield sites in the area (e.g., an existing landfill along Wooster Pike), 2) preservation of the environmentally sensitive Little Miami River, 3) possible reduction of flood hazards and stormwater moderation, and 4) improved connectivity for Newtown, Anderson Township and adjacent neighborhoods.

The location of a bus/rail hub near Newtown and creation of new bike paths through this area will support pedestrian-scaled development and linkage to recreational areas (golf courses and parks) in the Newtown area. Joint development area included within the planned bus hub footprint, for facilities such as job training, day care, drugstore, etc., will also support these goals.



A rail station near Broadwell Road (Ancor area) will support office/industrial development planned for the Ancor area, and may support possible re-development of previously disturbed (brownfield) sites occurring in this vicinity.

<u>Secondary and Cumulative Impact Considerations:</u> As noted above, multi-modal transportation alternatives developed for the Ohio 32/Wooster West area during Tier 1 are compatible with local long range planning. Undesirable development along the Little Miami River has been a key concern since the beginning of the project. However, with the design considerations incorporated into feasible alternatives developed during Tier 1 (including controlled access and use of a shared highway/transit way corridor), and mitigation that will be developed in greater detail and implemented during further project development, future land use along the river corridor is not expected to change substantially from the agricultural and recreational/greenspace that currently exists in this area.

Feasible modal alternatives for the Ohio 32/Wooster West area have been developed, to date, with emphasis on avoidance and minimization of impacts to environmental resources. As this project progresses to more detailed alignment development in Tier 2, impacts to environmental features will be further minimized in accordance with NEPA requirements. Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Any unavoidable impacts to parkland in this area will be fully coordinated to comply with state and federal mitigation requirements and to be compatible with, to the extent practicable, the needs and expectations of local park agencies. In addition, detailed noise and vibration studies will be conducted in Tier 2 to determine actual noise and/or vibration impacts, and appropriate mitigation/abatement measures will be developed, as necessary.

Residential and business relocations in the Newtown vicinity occurring as a result of a preferred alternative identified in Tier 2 will be conducted in compliance with all state and federal directives. Loss of local tax revenue and economic productivity due to the conversion of any residential and business properties to transportation right-of-way may be offset by other economic benefits realized from proposed improvements in transportation infrastructure (which may include localized increases in property values and economic development). These benefits may be especially realized in the Ancor area located to the east of Newtown, where re-development of previously disturbed industrial areas (brownfields) is planned and supported by proposed multi-modal transportation alternatives in this vicinity.

Several characteristics of urban environments have been identified as being associated with beneficial environmental results (USEPA, January 2001). Three such characteristics are demonstrated (provided opportunity for) by the multi-modal transportation plan proposed for the Ohio 32/Wooster West area, including:

- Safeguarding of environmentally sensitive areas: Minimization and mitigation measures to be further developed in Tier 2 (for compliance with mitigation requirements of state and federal regulatory agencies) will support protection of the environmentally sensitive Little Miami River and associated features.
- Compact development: Planned redevelopment in the Ancor area east of Newtown, which can be supported by proposed Eastern Corridor transportation improvements, encourages infill development



and redevelopment of target brownfields in the area, rather than disturbance of greenspace or other natural areas, and minimizes further habitat fragmentation.

• Transit accessibility, support for pedestrian and bicycle activity and mixed land uses: Bus and rail transit improvements and new bikeway proposed for this area offer greater mode choices and provide opportunity for possible creation of pedestrian-friendly and mixed-use development in the Newtown and Ancor vicinity centered around transit hub and station locations. This may in the long-term may reduce the overall vehicle miles traveled within individual neighborhoods in the Ohio 32/Wooster West area and/or the Eastern Corridor as a whole, and associated adverse environmental impacts.

Based on these considerations, preliminary assessment indicates that the proposed multimodal transportation improvements in the Ohio 32/Wooster West area will result in a safer, more efficient and land-use supportive transportation infrastructure that addresses both existing and future transportation needs and planned future development in the area. Further evaluation of potential indirect and cumulative impacts will be addressed in Tier 2 in conjunction with more detailed alignment development, impact assessment, preferred alternative selection and detailed design.

5.2.3. Area #3: Wooster East (from Ancor/Mount Carmel Hill to Milford)

Summary Of Multi-Modal Components for Area #3

The multi-modal transportation plan in this area, described in Chapter 3.4.2, is primarily TSM and transit-based. Key improvements consist of more frequent bus service, new bike/pedestrian facility, several roadway corridor improvements, new bus circulator routes, new rail transit (Oasis Line) and development of a bus/rail hub in the I-275/US 50 interchange vicinity. No new roadway alignments, other than TSM improvements, are proposed for this area.

Existing Conditions

The Wooster East area encompasses portions of Milford, Terrace Park, and Union and Miami Townships. The area is a mix of land uses, including residential, new commercial development in the vicinity of the I-275/US 50 interchange, upland woodland, scattered industrial development along Round Bottom Road, and scattered natural/riparian and agricultural areas along the Little Miami River and East Fork. This area contains a number of recreational and natural areas including the Terrace Park Country Club, Findley Ray Park, Parker Woods/Expressway Park, Township Fields and Tavern, and Kroger Woods.

Key Environmental Issues and Impacts for Area #3

Proposed transportation improvements in the Wooster East area mostly follow existing transportation right-of-way, minimizing environmental impacts in this area, as noted below:

• <u>Ecological Resources:</u> Key ecological concerns in this area are the Little Miami River and East Fork, both of which are characterized by high quality stream conditions (OEPA-designated Exceptional Warmwater Habitats), adjacent wetlands and the occurrence of state-listed species.



None of the proposed transportation improvements in Wooster East area cross either of these features, and no direct impacts are anticipated. The proposed Oasis rail transit corridor closely follows the Little Miami River and East Fork for a distance of about 2,000 feet, generally paralleling existing rail on the south side - away from the stream channels; no instream disturbance or encroachment on existing banks are expected through this area. Assessment of potential impacts to headwater features will be conducted during Tier 2.

TSM improvements, rail transit (Oasis Line), bikeway, and expanded bus proposed for this area will result in encroachment on 100-year floodplain along the Little Miami River and East Fork, and encroachment on the Buried Valley Aquifer System (BVAS) Sole Source Aquifer.

A concern related to groundwater is potential impact to a public water supply well – Township Fields and Tavern – located along the proposed Oasis rail line at the corner of Round Bottom Road and Mt. Carmel Road. This site is also a privately-owned recreational area (ballfields). Avoidance and minimization of impacts to this feature will require additional evaluation during further project development (in Tier 2).

• <u>Existing Development:</u> The proposed Oasis rail leg from Ancor to Milford will displace an estimated two residences and one industrial property. Additional impacts to existing residential and commercial development may occur as a result of proposed TSM improvements on Wooster Pike (to be evaluated during Tier 2).

The preliminary location of the proposed bus/rail transit hub at the I-275/US 50 interchange is an approximately 31-acre lot that has been set aside locally to accommodate this facility. The lot is currently vacant and no direct impacts to environmental features are expected.

- <u>Noise and Vibration</u>: Potential impacts to residences and businesses related to noise generated from rail and bus transit and TSM improvements are also a concern in this area. The number of potentially impacted noise (roadway and rail) and rail vibration receptors occurring in the area are presented in Table 5.4 and Tables 5.6 through 5.8. Further noise and vibration studies will be conducted in Tier 2 of the project to determine actual impacts and appropriate mitigation/abatement measures, as necessary.
- <u>Other Environmental Resources:</u> No known National Register properties occur in the Wooster East area within the Eastern Corridor study boundaries. The existing rail corridor in the area, however, is determined to be archaeologically sensitive based on Tier 1 cultural studies, and further Phase I studies will be required during Tier 2 of the Eastern Corridor project to determine the occurrence/significance of archaeological resources. No reported hazardous materials concern sites or other environmental features were identified in this area. No impact is expected to public-owned parks in this area, assuming that proposed TSM and bikeway improvements follow existing transportation right-of-way (several parks occur immediately adjacent to existing roadways in this area).

Preliminary Mitigation Issues for Area #3

Further evaluation of avoidance and minimization of impacts to environmental features in the Wooster East area will be conducted on a project-by-project basis during Tier 2 when more detailed alignment alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in



the Wooster East area for which mitigation and/or permit preparation may be required during further project development, if determined to be impacted, include:

- sole source aquifer and public water supply avoidance, minimization and mitigation requirements
- FEMA floodplain permit requirement
- highway/rail noise and rail vibration possible abatement
- cultural resources possible Section 4(f)/Section 106 evaluation and mitigation (potential archaeological resources)

Land Use Fit and Secondary and Cumulative Impact Considerations

<u>Fit of Multi-Modal Alternatives with Eastern Corridor Land Use Plan:</u> Priority land use issues for the Wooster East area identified in the Eastern Corridor land use vision plan are summarized in Chapter 1.8.1.

In general, proposed new bikeway in this area connecting existing trails in Milford to planned and existing trails in the adjoining Ohio 32/Wooster West area supports the land use priority for creating bike connections and for the redevelopment of Columbia Township along Wooster Pike east of Mariemont. The desired mix of residential and commercial use, pedestrianfriendly redevelopment along this segment of Wooster Pike would be tied to the bike trail and enhanced by future regional bike trail connections. Other recreational opportunities along the Little Miami River, such as existing and/or new playfields and parks, would also be enhanced by access provided by this bike trail connection. A proposed bus/rail transit station in the Newtown area (part of the Ohio 32/Wooster West area) would also support the residential/retail and recreation development planned for this segment of Wooster Pike.

In addition, the creation of a bus/rail transit hub in the Milford area (at I-275/US 50) with bus circulator routes to the hub, combined with more frequent bus service to Milford along Wooster Pike, will support the land use vision priority for improved connectivity for this area. Finally, the use of existing rail corridor for proposed rail transit in this area maximizes right-of-way efficiency and supports the land use vision priority for preserving wooded hillsides and the Little Miami River edge/visual quality along US 50.

<u>Secondary and Cumulative Impact Considerations:</u> As noted above, multi-modal transportation alternatives developed for the Wooster East area are compatible with local long range planning. Undesirable development along the Little Miami River and East Fork has been a concern since the beginning of the project. However, with use of the existing rail corridor for proposed rail transit, right-of-way efficiency is maximized, and future land use along these river corridors are not expected to change substantially from the uses that currently exist in the area.

Feasible modal alternatives for the Wooster East area have been developed, to date, with emphasis on avoidance and minimization of impacts to environmental resources, although most of the improvements proposed for this area follow existing transportation right-of-way. As this project progresses to more detailed alignment development in Tier 2, impacts to environmental features will be further minimized in accordance with NEPA requirements. Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. In addition, detailed



noise and vibration studies will be conducted in Tier 2 to determine actual noise and/or vibration impacts, and appropriate mitigation/abatement measures will be developed, as necessary.

Any residential and business relocations occurring as a result of a preferred alternative identified in Tier 2 will be conducted in compliance with all state and federal directives. Loss of local tax revenue and economic productivity due to the conversion of any residential and business properties to transportation right-of-way are may be offset by other economic benefits realized from proposed improvements in transportation infrastructure (which may include localized increases in property values and economic development).

Several characteristics of urban environments have been identified as being associated with beneficial environmental results (USEPA, January 2001). Two such characteristics are demonstrated (provided opportunity for) by the multi-modal transportation plan proposed for the Wooster East area, including:

- Safeguarding of environmentally sensitive areas: Use of existing transportation (rail) corridor, rather than development of transit on new alignment, preserves existing riparian corridors along the Little Miami River and East Fork.
- Transit accessibility, support for pedestrian and bicycle activity and mixed land uses: Bus and rail transit improvements and new bikeway proposed for this area offer greater mode choices and provide opportunity for possible creation of pedestrian-friendly and mixed-use development in Newtown and along Wooster Pike centered around transit hub and station locations and proposed bike trails/connections. This may in the long-term reduce the overall vehicle miles traveled within individual neighborhoods in the Wooster East area and/or the Eastern Corridor as a whole, and associated adverse environmental impacts.

Based on these considerations, preliminary assessment indicates that the proposed multimodal transportation improvements in the Wooster East area will result in a more efficient and land-use supportive transportation infrastructure that addresses both existing and future transportation needs and planned future development in the area. Further evaluation of potential indirect and cumulative impacts will be addressed in Tier 2 in conjunction with more detailed alignment development, impact assessment, preferred alternative selection and detailed design.

5.2.4. Area #4: Eastern Avenue/Lunken (Downtown to Lunken/US 50)

Summary Of Multi-Modal Components for Area #4

The multi-modal transportation plan in this area, described in Chapter 3.4.2, is predominantly transit-based and TSM. Key improvements consist of more frequent bus service on US 50, various TSM intersection improvements, interchange improvements at Beechmont/Wilmer/ Wooster Pike and at Beechmont/Columbia Parkway, new bikeways following the Ohio River along Columbia Parkway, several roadway corridor improvements along Columbia Parkway and Wilmer Avenue, new rail transit (Oasis Line) following existing rail alignment, expanded bus and new bus circulator routes, and development of a bus/rail hub in downtown Cincinnati near the existing Riverfront Transit Center. No new roadway alignments, other than TSM improvements, are proposed for this area.



Existing Conditions

The Eastern Avenue/Lunken area encompasses portions of the downtown Cincinnati riverfront area, East End, Columbia-Tusculum, the Lunken Airport vicinity, and Linwood. The area is heavily developed, consisting of mixed residential, commercial, industrial and recreational areas along existing Columbia Parkway and Eastern Avenue, and commercial development in the Lunken area. Numerous recreational facilities and greenspace facilities occur in this area, including Sawyer Point, Yeatman's Cove, Public Landing, Bicentennial Commons, Friendship Park (downtown riverfront area), Rakestraw Memorial Recreation Area, Schmidt Field and Alms Park (Columbia Parkway near Delta Avenue), and the Airport Playfields, Armleder Park and Linwood Athletic Field (in the Lunken Airport vicinity).

Key Environmental Issues and Impacts for Area #4

Proposed transportation improvements in the Eastern Avenue/Lunken area primarily follow existing transportation right-of-way, minimizing environmental impacts in this area, as noted below:

• <u>Existing Development:</u> A key concern in this area is the potential for adverse impacts to existing residential and commercial development along the proposed Oasis rail corridor that follows existing rail (SORTA/I&O) between Columbia Parkway and Eastern Avenue. However, as described in Chapter 3.4.1 of this DEIS, the existing rail right-of-way in this vicinity is adequate at most locations for the proposed two-track Oasis transit line, and impacts outside of existing rail right-of-way are expected to be minimal.

Based on information presented in Table 5.4, an estimated 19 residences and one church may be displaced by proposed rail transit in this area. However, 15 of the 19 possible displacements are due to potential removal of access to existing homes along Gladstone Road/Hoff Avenue (just east of the Torrence Park/Columbia Parkway intersection); these impacts may be avoided or minimized during further project development (Tier 2) when more detailed rail alignment is developed.

Overall, the greatest impacts to existing development are expected as a result of rail station placement (five locations proposed for this area), and proposed TSM improvements (various intersection improvements and roadway corridor improvements along Columbia Parkway and Wilmer Road). General environmental concerns at these improvement locations are summarized in Tables 5.2 and 5.5. More detailed assessment, however, will not be conducted until Tier 2 of the Eastern Corridor study, on a project-by-project basis.

- <u>Ecological Resources:</u> The proposed Oasis Line in this area follows existing rail bordered by development, and ecological resources are limited. In general, proposed rail transit, expanded bus, bikeway and TSM improvements will all result in encroachment on 100-year floodplain along the Ohio River and Little Miami River, and encroachment on mapped boundaries of the Buried Valley Aquifer System (BVAS) Sole Source Aquifer. No USGS surface streams, wetlands or other ecological features identified from Tier 1 studies occur in this area within the Eastern Corridor study boundaries. Assessment of potential impacts to headwater features will be conducted during Tier 2.
- <u>Cultural Resources:</u> The Columbia Parkway/Eastern Avenue corridor from downtown to the Lunken area is highly sensitive for cultural resources. Concentrations of known National Register sites occur in the downtown area, generally from the suspension Bridge to I-471, and in the Columbia-Tusculum area, generally from Delta Avenue to Lunken Airport. The proposed Oasis corridor potentially encroaches on three National Register individual properties (i.e., the sites occur within the estimated



100 foot corridor width used in Tier 1 impact analysis), including the Hoodin Building (property encroachment only), the Columbia Baptist Cemetery and the Fulton-Presbyterian Cemetery. These resources, however, may be avoided by the proposed rail alignment once more detailed design is developed. Further evaluation of avoidance and minimization will be conducted in Tier 2. No other known NR sites are located within the proposed Oasis rail corridor; however, several are in close proximity – not only to proposed rail transit, but to proposed TSM improvements in this area.

Numerous other cultural resources were identified in the area from Tier 1 cultural studies. The proposed Oasis corridor encroaches on (entirely or in part) ten of these resources, including one previously recorded archaeological (OAI) site, one local historic district (Columbia-Tusculum local district boundaries), seven previously recorded historic (OHI) sites, and one potential district. The National Register eligibility of these features has not been determined, but will be further evaluated during Tier 2 of the Eastern Corridor study, if impacted.

In addition, the existing rail corridor in this area is determined to be archaeologically sensitive based on Tier 1 cultural studies, and further Phase I studies will be required during Tier 2 to determine the occurrence/significance of archaeological resources.

Parkland: Numerous public and privately-owned parks and recreational areas occur along Columbia Parkway and Eastern Avenue, and in the Lunken Airport vicinity. Several sites may be encroached upon in the downtown area where the proposed Oasis rail transit corridor occurs on new alignment, including Yeatman's Cove, Bicentennial Commons, Sawyer Point and/or Eden Park Waterfront (Theodore Berry Friendship Park). New bikeway proposed for this area may also encroach on these facilities. Rakestraw Memorial Recreation Area, in the Columbia-Tusculum vicinity, is located immediately adjacent to the proposed Oasis Line through this area and is near the location of a proposed Oasis rail station.

The proposed Oasis Lunken Alternative and parallel bikeway, and the mainline Oasis corridor (i.e., the segment of the Oasis Line following existing rail) clips the Airport Playfields and Linwood Athletic Field. In addition, portions of the Airport Playfields and Otto Armleder Little Miami Park are near the location of proposed Oasis rail stations, and may be encroached upon by proposed TSM roadway corridor improvements along Wilmer Road. Armleder Park may also be encroached upon by a proposed TSM interchange improvement at Beechmont/Wooster/Wilmer. All of these Section 4(f) resources are further described in Chapter 5.3.

<u>Section 4(f) and Section 6(f) Issues:</u> The Eastern Avenue/Lunken area contains a number of Section 4(f) resources potentially impacted by feasible alternatives under consideration for the Eastern Corridor, including public-owned parks and potential cultural resources. In addition, the Eden Park Waterfront Park (Theodore M. Berry International Friendship Park) is a Section 6(f) resource under the Land and Water Conservation Fund Act.

Avoidance of encroachment on these resources was conducted to the extent practicable during development of feasible alternative corridors in Tier 1. Most known features were avoided; however several parks, NR properties, and other identified cultural resources in the area occur immediately adjacent to proposed transportation improvement corridors, or are clipped by the preliminary corridors used in this DEIS impact analysis. Avoidance and minimization of impacts to Section 4(f) and Section 6(f) resources will be further evaluated in Tier 2 on a project-by-project basis, and unavoidable impacts will require the development of mitigation measures.

• <u>Hazardous Materials Concerns:</u> One identified hazardous materials concern site, NREN, occurs in the proposed Oasis Rail corridor in this area. This site, if impacted, will be further evaluated during Tier 2 of the Eastern Corridor study to determine if hazardous materials are actually present, and significance and mitigation, as necessary.



• <u>Noise and Vibration</u>: Potential impacts to residences and businesses related to noise generated from rail and bus transit and TSM improvements are also a concern in this area. The number of potentially impacted noise (roadway and rail) and rail vibration receptors are presented in Table 5.4 and Tables 5.6 through 5.8. Further noise and vibration studies will be conducted in Tier 2 to determine actual impacts and appropriate mitigation/abatement measures, as necessary.

Preliminary Mitigation Issues for Area #4

Further evaluation of avoidance and minimization of impacts to environmental features in the Eastern Avenue/Lunken area will be conducted on a project-by-project basis during Tier 2 when more detailed alignment alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Eastern Avenue/Lunken area for which mitigation and/or permit preparation may be required during further project development, if determined to be impacted, include:

- streams (possible headwater features) Section 404/401 permits and required compensatory mitigation
- sole source aquifer avoidance, minimization and mitigation requirements
- FEMA floodplain permit requirement
- highway/rail noise and rail vibration possible abatement
- parkland and cultural resources Section 4(f)/Section 106 and Section 6(f) evaluation and mitigation
- potential hazardous materials possible waste management or other mitigation

Land Use Fit and Secondary and Cumulative Impact Considerations

<u>Fit of Multi-Modal Alternatives with Eastern Corridor Land Use Plan:</u> Priority land use issues for the Eastern Avenue/Lunken area identified in the Eastern Corridor land use vision plan are summarized in Chapter 1.8.1.

In general, the creation of the Oasis rail transit line, parallel bikeway, and rail station placement with associated bus feeder routes at key locations near Mt. Adams, Torrence Parkway, Columbia-Tusculum and Lunken Airport, support the land use vision priority for creating pedestrian connections within and to these communities, and may support mixed-use pedestrian-friendly development in these areas.

Intersection and roadway improvements along Eastern Avenue and Columbia Parkway in the Columbia-Tusculum area, and roadway and intersection improvements along Wilmer Road and Wooster Pike in the Lunken Airport vicinity, support the land use vision priority for improving connectivity and reducing congestion within this area.

Proposed roadway improvements along Wilmer Road and the placement of an Oasis rail spur to the Lunken area may support the land use vision priority for encouraging light industry and office development in this area. Finally, the use of existing rail corridor for proposed rail transit maximizes right-of-way efficiency and supports the land use vision priority for preserving hillsides and the visual quality of US 52 along the Ohio River.



<u>Secondary and Cumulative Impact Considerations:</u> As noted above, multi-modal transportation alternatives developed for the Eastern Avenue/Lunken area are compatible with local long range planning. With use of the existing rail corridor for proposed rail transit, right-of-way efficiency is maximized, and future land use in the area is not expected to change substantially from the uses that currently exist or are planned for the area.

Feasible modal alternatives for the Eastern Avenue/Lunken area have been developed, to date, with emphasis on avoidance and minimization of impacts to environmental resources, and most of the improvements proposed for this area follow existing transportation right-of-way. As this project progresses to more detailed alignment development in Tier 2, impacts to environmental features will be further minimized in accordance with NEPA requirements. Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Any unavoidable impacts to parkland in this area, identified during Tier 2, will be fully coordinated to comply with state and federal mitigation requirements and to be compatible with, to the extent practicable, the needs and expectations of local park agencies. In addition, detailed noise and vibration studies will be conducted in Tier 2 to determine actual noise and/or vibration impacts, and appropriate mitigation/abatement measures will be developed, as necessary.

Any residential and business relocations occurring as a result of a preferred alternative identified in Tier 2 will be conducted in compliance with all state and federal directives. Loss of local tax revenue and economic productivity due to the conversion of any residential and business properties to transportation right-of-way may be offset by other economic benefits realized from proposed improvements in transportation infrastructure (which may include localized increases in property values and economic development).

Several characteristics of urban environments have been identified as being associated with beneficial environmental results (USEPA, January 2001). Three such characteristics are demonstrated (provided opportunity for) by the multi-modal transportation plan proposed for the Eastern Avenue/Lunken area, including:

- Compact development: Planned redevelopment in the Lunken area, which can be supported by proposed Eastern Corridor transportation improvements, encourages infill development, rather than disturbance of parkland, greenspace or other natural areas, and minimizes further habitat fragmentation.
- Transit accessibility, support for pedestrian and bicycle activity and mixed land uses: Bus and rail transit improvements and new bikeway proposed for this area offer greater mode choices and provide opportunity for possible creation of pedestrian-friendly and mixed-use development in neighborhoods/communities along the proposed rail transit corridor from downtown to Lunken Airport, centered around transit hub and rail station locations. This may in the long-term reduce the overall vehicle miles traveled within individual neighborhoods in the Eastern Avenue/Lunken area and/or the Eastern Corridor as a whole, and associated adverse environmental impacts.



• Safeguarding of environmentally sensitive areas: Use of an existing transportation corridor, rather than development of transit on new alignment, preserves existing riparian corridors and wooded hillsides along the Ohio River in this area.

Based on these considerations, preliminary assessment indicates that the proposed multimodal transportation improvements in the Eastern Avenue/Lunken area will result in a safer, more efficient and land-use supportive transportation infrastructure that addresses both existing and future transportation needs and planned future development in the area. Further evaluation of potential indirect and cumulative impacts will be addressed in Tier 2 in conjunction with more detailed alignment development, impact assessment, preferred alternative selection and detailed design.

5.2.5. Area #5: Eastern Avenue/Lunken And Ohio 32/Eastgate (from Lunken/US 50 to I-275/Eastgate)

Summary Of Multi-Modal Components for Area #5

The multi-modal transportation plan in this area, described in Chapter 3.4.2, is primarily transitbased and TSM. Key improvements consist of more frequent bus service on SR 125, various intersection improvements, roadway corridor improvements along US 52, Clough Pike and Beechmont Avenue, a new bus hub located near the intersection of Beechmont and Five Mile, new bikeway from Beechmont Road to US 52, and a new park-and-ride facility located at the SR 125/I-275 interchange. No new roadway alignments, other than TSM improvements, or rail transit are proposed for this area.

Existing Conditions

The Eastern Avenue/Lunken and Ohio 32 area occurs in the Mt. Washington area of Anderson Township, and a portion of Union Township at I-275. Land use is mostly moderate to low density residential, with commercial and business development concentrated along the SR 125 and US 52 corridors, and at I-275 in the Eastgate area. Several park/recreational facilities occur in the area, particularly along US 52, including California Nature Preserve, California Golf Course, Coney Island, Riverbend, Riverstar Park, and River Downs. Institutional facilities in the general area include Anderson High School and the Mt. Saint Mary Seminary.

Key Environmental Issues and Impacts for Area #5

Proposed transportation improvements in the Eastern Avenue/Lunken and Ohio 32 area mostly follow existing transportation right-of-way, and environmental impacts are not expected to be substantial, as noted below.

Proposed TSM roadway corridor improvements along existing US 52 and new bikeway along Elstun Road, from Beechmont to US 52, will result in encroachment on 100-year floodplain along the Ohio River and the Little Miami River, and encroachment on mapped boundaries of the Buried Valley Aquifer System (BVAS) Sole Source Aquifer. No direct impacts on the Little Miami River or any other USGS streams are anticipated. Potential impacts to headwater features will be evaluated during Tier 2 on a project-by-project basis. These TSM roadway and bikeway improvements may also clip the edges of several parks occurring along existing



US 52, including Little Miami River State Scenic Park, California Nature Preserve and Riverstar Park. Preliminary impact corridors for TSM improvements were not developed for Tier 1, and potential impacts to these parks will be evaluated during further project development.

The proposed Beechmont Bus Hub is located at the site of the former Beechmont Mall. Localized increases in noise may occur, however, no substantial environmental impacts are expected. A proposed park-and-ride facility at the I-275/SR 125 interchange may encroach on existing development in this area. This TSM project will be further evaluated in Tier 2.

Preliminary Mitigation Issues for Area #5

Further evaluation of avoidance and minimization of impacts to environmental features in the Eastern Avenue/Lunken and Ohio 32 area will be conducted on a project-by-project basis during Tier 2 when more detailed alignment alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Eastern Avenue/Lunken and Ohio 32 area for which mitigation and/or permit preparation may be required during further project development, if determined to be impacted, include:

- streams (possible headwater features) Section 404/401 permits and required compensatory mitigation
- sole source aquifer avoidance, minimization and mitigation requirements
- FEMA floodplain permit requirement
- highway noise possible abatement
- parkland (possible encroachment) Section 4(f)/Section 106 evaluation

Land Use Fit and Secondary and Cumulative Impacts Considerations

<u>Fit of Multi-Modal Alternatives with Eastern Corridor Land Use Plan:</u> Priority land use issues for the Eastern Avenue/Lunken and Ohio 32 area identified in the Eastern Corridor land use vision plan are summarized in Chapter 1.8.1.

In general, bus transit improvements along SR 125, including more frequent bus service and the placement of a bus hub at the former Beechmont Mall, with associated bus circulator routes, support the land use vision priority for revitalizing/creating an Anderson Township Town Center with pedestrian-friendly mixed-use development. Joint development area included within the planned bus hub footprint, for facilities such as job training, day care, drugstore, etc., may also support this priority.

Proposed bus transit improvements, US 52 roadway improvements, a new bikeway, and a new park-and-ride facility at I-275 support the land use vision priority for improving connectivity in the area and for providing alternative modes of transportation. Finally, improvement of existing US 52 roadway corridor, instead of new alignment, maximizes right-of-way efficiency and supports the land use vision priority for preserving hillsides and the visual quality of US 52 along the Ohio River.



<u>Secondary and Cumulative Impact Considerations:</u> As noted above, multi-modal transportation alternatives developed for the Eastern Avenue/Lunken and Ohio 32 area mostly follow existing transportation corridors in the area, and are compatible with local long range planning.

Feasible modal alternatives in this area have been developed with emphasis on avoidance and minimization of impacts to environmental resources, and most of the improvements proposed for this area follow existing transportation right-of-way. As this project progresses to more detailed alignment development in Tier 2, impacts to environmental features will be further minimized in accordance with NEPA requirements. Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Any unavoidable impacts to parkland in this area, identified during Tier 2, will be fully coordinated to comply with state and federal mitigation requirements and to be compatible with, to the extent practicable, the needs and expectations of local park agencies. In addition, detailed noise and vibration studies will be conducted in Tier 2 to determine actual noise and/or vibration impacts, and appropriate mitigation/abatement measures will be developed, as necessary.

Any residential and business relocations occurring as a result of TSM improvements or bus hub placement (as identified in Tier 2) will be conducted in compliance with all state and federal directives. Loss of local tax revenue and economic productivity due to the conversion of any residential and business properties to transportation right-of-way may be offset by other economic benefits realized from proposed improvements in transportation infrastructure (which may include localized increases in property values and economic development).

Based on these considerations, preliminary assessment indicates that the proposed multimodal transportation improvements in the Eastern Avenue/Lunken and Ohio 32 area will result in a more efficient and land-use supportive transportation infrastructure that addresses both existing and future transportation needs and planned future development in the area. Further evaluation of potential indirect and cumulative impacts will be addressed in Tier 2 in conjunction with more detailed alignment development, impact assessment, preferred alternative selection and detailed design.

5.2.6. Area #6: Ohio 32/Eastgate Area (from Ancor/Mt. Carmel Hill to Eastgate/Batavia)

Summary Of Multi-Modal Components for Area #6

The multi-modal transportation plan in this area, described in Chapter 3.4.2, focuses on new capacity and access changes and improvements on SR 32 and I-275, with a major upgrade to the existing I-275/SR 32 interchange, corridor preservation for new rail transit to the Eastgate area (Wasson Line), expanded bus, new bus circulator routes, a new bus/rail transit hub at Eastgate, and TSM improvements on the existing local roadway network.



Existing Conditions

The Ohio 32/Eastgate area is located in Union Township and a small portion of Batavia Township. The area is heavily developed, consisting of residential development along existing roads and numerous subdivisions, and commercial, business and retail development along existing SR 32 in what is locally referred to as the Eastgate area, generally from I-275 east towards Batavia. Natural areas such as woodlands and stream corridors are scattered, disturbed, and bordered by extensive development. Several greenspace/recreational areas occur in the vicinity, including Veteran's Memorial Park, Maquier Field, Glen Ridge Lake Club, and commercial recreational facilities in and around Eastgate Mall and other shopping centers. A planned development area (Union Township) is located along Aicholtz Road, from I-275 east to Gleneste-Withamsville Road, and south to Clough Pike.

Key Environmental Issues and Impacts for Area #6

Key environmental resources and issues of concern in the Ohio 32/Eastgate area include the following:

Existing Development: A key concern in the Ohio 32/Eastgate area is the potential for adverse impact to the residential, commercial and business development, and for providing adequate access to these areas and future planned development. Based on information presented in Table 5.8, an estimated 40 to 233 residences and 25 to 43 commercial/industrial properties may be displaced by I-275/SR 32 improvements in this area. An additional 19 to 67 residences and 8 to 11 commercial industrial properties may be displaced by associated local road improvements proposed for the area, and approximately 7 to 13 residences and 1 to 4 businesses may be displaced by the future Wasson rail tie-in to the proposed transit hub along Aicholtz Road. Other properties may also be affected at locations where local TSM intersection improvements are proposed; specific impacts related to TSM improvements will be further quantified in Tier 2 on a project-by-project basis.

Several school properties are clipped by roadway alternatives under consideration in the Ohio 32/Eastgate area, including Gleneste High School, Summerside Elementary and Brantner Lane Elementary. No building takes are involved in this encroachment by any of the alternatives.

Adverse impacts to existing development are expected to be offset by the proposed multi-modal plan for this area by the following: 1) improved highway capacity on SR 32 and I-275 will reduce congestion, provide better connectivity to I-275 and to destinations along SR 32 west of I-275, 2) local road improvements will provide improved access management and potential for development and redevelopment, 3) the development of future rail transit and new bus routes will provide alternative transportation modes.

• <u>Ecological Resources and Parkland:</u> Ecological resources are limited in this heavily developed area. No FEMA mapped floodplains or aquifer resources are encroached upon by any of the feasible alternatives under consideration.

USGS streams potentially impacted include Hall Run, Shayler Run, several tributaries to these features, and several Salt Run tributaries. Estimated stream impacts for the area range from 250 to 2,250 linear feet for proposed mainline improvements along SR 32 and I-275, and from 520 to 680 linear feet for proposed local road improvements in the area (see Table 5.8). Overall, most streams in this area are modified or disturbed to some degree due to adjacent development. Calculated QHEI scores for sampled stream reaches ranged from about 34 for smaller tributaries to around 75 for Shayler Run tributary. All the USGS streams in this area have been either culverted and/or rechanneled for portions of their length. Most of the sampled streams in the area exhibited Modified



Warmwater Habitat conditions, with Hall Run and Shayler Run tributary exhibiting Warmwater Habitat conditions. Avoidance, minimization and mitigation of stream impacts, including assessment of impacts to headwater features, will be further evaluated during Tier 2.

Transportation improvements in the Ohio 32/Eastgate area are expected to have minor impacts (less than one acre) on other ecological features, including wetlands and Tier 1 surveyed woodlands. Other woodlands (not surveyed during Tier 1 field studies) may also be affected; woodland impacts will be further evaluated on a project-by-project basis in Tier 2. Two public-owned parks, Veteran's Memorial Park located along Clough Pike and Maquier Field located along Old SR 74 near SR 32, would be encroached upon by proposed side road improvements in the area. Avoidance and minimization of impacts to this Section 4(f) resource will be further evaluated in Tier 2 of the Eastern Corridor study, and unavoidable impacts will require the development of mitigation measures.

- <u>Cultural Resources:</u> Known cultural resources in the Ohio 32/Eastgate area are limited. No National Register sites are reported from this area, and other cultural features are scattered. Several previously recorded archaeological (OAI) sites are encroached upon by feasible alternatives under consideration in this area (see Table 5.8). The National Register eligibility of these sites has not been determined, but will be further evaluated during Tier 2, if impacted. In addition, several archaeological sensitive areas were identified during Tier 1 cultural studies; these will be further evaluated during Tier 2 on a project-by-project basis to determine significance.
- <u>Hazardous Materials Concerns</u>: Two identified hazardous materials concern sites are encroached upon by proposed transportation improvements under consideration in the Ohio 32/Wooster Pike area: Vivi Color, located along existing SR 32 west of I-275, and Lucas Variety, located on Omni Drive just east of I-275. These features are further described in Chapter 4.1.10. If impacted, they will be further evaluated during Tier 2 to determine if hazardous materials are actually present, their significance, and mitigation, as necessary.
- <u>Noise and Vibration</u>: Potential impacts to residences and businesses related to noise generated from rail and bus transit are also a concern in this area. The number of potentially impacted noise (roadway and rail) and rail vibration receptors occurring in the area by transportation mode and alternative are presented in Table 5.4 and Tables 5.6 through 5.8 above. Further noise and vibration studies will be conducted in Tier 2 of the project to determine actual impacts and appropriate mitigation/abatement measures, as necessary.

Preliminary Mitigation Issues for Area #6

Further evaluation of avoidance and minimization of impacts to environmental features in the Ohio 32/Eastgate area will be conducted on a project-by-project basis during Tier 2 when more detailed alignment alternatives are developed.

Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Ohio 32/Eastgate area for which mitigation and/or permit preparation may be required during further project development, if determined to be impacted, include:

- streams and wetlands Section 404/401 permits and required compensatory mitigation
- highway/rail noise and rail vibration possible abatement
- parkland and potential cultural resources possible Section 4(f)/Section 106 evaluation and mitigation
- potential hazardous materials possible waste management or other mitigation



Land Use Fit and Secondary and Cumulative Impact Considerations

<u>Fit of Multi-Modal Alternatives with Eastern Corridor Land Use Plan:</u> Priority land use issues for the Ohio 32/Eastgate area identified in the Eastern Corridor land use vision plan are summarized in Chapter 1.8.1.

In general, proposed interchange and access/capacity improvements for I-275 and SR 32, and local roadway and intersection improvements in this area will reduce congestion and provide better traffic flow for this commercialized area, and support the land use vision priority for improved connectivity. Tie-in of the future Wasson Rail Line, and expanded bus and bus circulator routes to a proposed transit hub along Aicholtz Road, support planned development in this area, and the land use vision priority for potential pedestrian and transit-friendly development in this area. Joint development area included within the planned bus hub footprint, for facilities such as job training, day care, drugstore, etc., will also support these land use priorities.

<u>Secondary and Cumulative Impact Considerations:</u> As noted above, multi-modal transportation alternatives developed for the Ohio 32/Eastgate area during Tier 1 of the Eastern Corridor study are compatible with local long range planning. Planned future land use in the Eastgate area does include some level of development, in accordance with local land use plans (Union Township) and locally identified land use priorities adopted from the Eastern Corridor land use vision plan, specifically office and industrial growth along Aicholtz Road south and east of the I-275/SR 32 interchange.

Feasible modal alternatives for this area have been developed with emphasis on avoidance and minimization of impacts to environmental resources. Any unavoidable impacts to state and federal regulated features by a preferred alternative identified in Tier 2 (by project) will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. In addition, detailed noise and vibration studies will be conducted in Tier 2 to determine actual noise and/or vibration impacts, and appropriate mitigation/abatement measures will be developed, as necessary.

Residential and business relocations along existing SR 32 occurring as a result of a preferred alternative identified in Tier 2 will be conducted in compliance with all state and federal directives. Loss of local tax revenue and economic productivity due to the conversion of any residential and business properties to transportation right-of-way may be offset by other economic benefits realized from proposed improvements in transportation infrastructure (which may include localized increases in property values, economic development and new tax revenue). These benefits may be especially realized in the area along Aicholtz Road where planned development is supported by proposed multi-modal transportation alternatives in this vicinity.

Based on these considerations, preliminary assessment indicates that the proposed multimodal transportation improvements in the Ohio 32/Eastgate area will result in a more efficient and land-use supportive transportation infrastructure that addresses both existing and future transportation needs and planned development in the area. Further evaluation of potential indirect and cumulative impacts will be addressed in Tier 2 in conjunction with more detailed



alignment development, impact assessment, preferred alternative selection and detailed design.

5.3. PRELIMINARY SECTION 4(f) EVALUATION

5.3.1. Purpose of the Tier 1 Section 4(f) Evaluation

According to Section 4(f) of the Department of Transportation Act of 1966, the Federal Highway Administration (FHWA) shall not approve any project or program which requires the use of any historic site on or eligible for inclusion in the National Register of Historic Places, publicly owned parks, recreational areas, or wildlife or waterfowl refuge unless: (1) there is no feasible and prudent alternative to the use of such land, and (2) the project includes all possible planning to minimize harm resulting from such use.

The analysis of Section 4(f) resources found herein was prepared pursuant to 23 USC 138 and the guidelines set forth pertaining to a tiered EIS project (23 CFR 771.135). At the Tier 1 EIS stage, an evaluation of potential impacts on Section 4(f) resources by the proposed project is made, including a decision on whether the impacts could affect the decision-making process. A preliminary determination may also be made at this time as to whether there are feasible and prudent alternatives for the action to avoid the use of Section 4(f) land. This preliminary determination shall consider all possible planning to minimize harm to the extent that the level of detail available at the first-tier EIS stage allows. It is recognized that planning at this stage will normally be limited to ensuring that opportunities to minimize harm at subsequent stages in the development process have not been precluded by decisions made at the first-tier. This preliminary determination is then incorporated into the first-tier EIS (23 CFR 771.135).

Tier 1 work for the Eastern Corridor focuses on public parks, recreation areas and wildlife refuges and known (currently listed) National Register cultural resources. Additional work will be conducted during Tier 2 for other resources with potential impacts that are not currently listed on the National Register. Once detailed plans are available in Tier 2, a full Section 4(f) evaluation will be prepared for any such properties that will be impacted by the proposed project.

5.3.2. Section 4(f) Resources - Public Parks, Recreation Areas and Wildlife Refuges

The planning for the proposed project has attempted to avoid public parks, recreation areas, and wildlife refuges as best practicable. As discussed in Chapter 4.1.9, there are 30 public parks/recreational facilities and 7 public-owned greenspaces located within the Eastern Corridor detailed study area boundaries. Eighteen of these facilities, including 15 parks and 3 public-owned greenspaces, may be potentially impacted by the project in that they occur, in part, within the estimated corridor widths of the various modal alternatives under consideration. These 18 facilities are described below and depicted on Figure 5.1.

It should be noted that the public-owned greenspaces listed below may not currently have an existing recreational use, but may be planned for such use in the future. Section 4(f) applicability for these areas will be determined in Tier 2 on a project-by-project basis based on



facility use at that time. For purposes of this Tier 1 DEIS, they are considered <u>potential</u> Section 4(f) resources.

Not included in the discussion below, nor listed in Table 4.4 of Chapter 4.1.9, are public parks and greenspaces potentially affected by TSM projects under consideration for the Eastern Corridor. Qualitative discussion of potential impacts due to proposed TSM improvements are presented in Chapter 5.1.1 of this DEIS. TSM projects for the Eastern Corridor will be further evaluated during Tier 2, as applicable.

Description of Public Parks, Recreation Areas, and Wildlife Refuges

Public-owned parks, recreation areas and greenspaces occurring within the estimated corridor widths of the various modal alternatives under consideration in the Eastern Corridor are described below:

- <u>Airport Playfield</u>: The Airport Playfield, a Cincinnati Recreation Commission site, is located adjacent to the Lunken Airport in Hamilton County, Ohio. The 374-acre site offers an 18-hole regulation golf course as well as a 9-hole par-3 course, a driving range, tennis courts, 6.5 miles of walking and biking trails, a playground, and numerous picnic areas. The Airport Playfield is accessible from Wilmer Avenue.
- <u>Armleder Little Miami Park</u>: Scheduled completion of the Armleder Little Miami Park (formerly known separately as the Little Miami Scenic River Park and Otto Armleder Memorial Park) is planned for 2004 with a \$4 million private grant received from the Armleder Foundation. The park is bordered on its south by Duck Creek and on its east side by the Little Miami River. The park is being jointly developed by the Cincinnati Recreation Commission (1/3) and the Cincinnati Park Board (2/3). Once opened, the park will be 322 acres combined. The park amenities will include soccer fields, nature trails, a dog park, canoe launch, wetland preserves, river overlook, wildlife habitat, and picnic areas. The park is accessible from Wooster Pike.
- <u>Ault Park</u>: Ault Park is a multipurpose park encompassing approximately 224 acres in Hamilton County, Ohio. The park, owned by the Cincinnati Park Board, offers picnic/pavilion grounds, formal gardens, hillside trails/natural areas, and a children's play area. Ault Park is accessible from Observatory Avenue.
- <u>Bicentennial Commons</u>: Bicentennial Commons, opened in 1998 to commemorate Cincinnati's Bicentennial, is an approximately 11-acre park located on the corner of Eggelston Avenue and Pete Rose Way in downtown Cincinnati. The park features the Flying Pig Sculptures, the Bicentennial Brick Promenade, a working model of the Ohio River and its 20 canal locks and dams, a 12-foot statue of *Cincinnatus*, the P&G Pavilion and a smaller amphitheater, a 20,000 square foot polyurethane ice rink/roller rink, eight lighted tennis courts, two sand volleyball courts, a parcourse fitness trail, and three river overlook sites.
- Clear Creek Park: Clear Creek Park, owned and operated by the Anderson Park District (APD), is located in the floodplain of the Little Miami River. The park covers approximately 102 acres in Hamilton County, Ohio. Clear Creek Park opened in the late summer of 1996 with 83 acres as the first phase of a continuing building program. In 2000, the APD acquired an additional 35 acres of adjacent property that contains a nationally registered pre-historic site. The centerpiece of the park is the Oasis, a restroom facility and concession trailer surrounded by landscaped arbors and a pavilion. The park amenities include: up to 23 soccer fields, restrooms, concessions, a pay phone, and a shelter area. Future plans include a playground and a hike/bike trail. Clear Creek Park is accessible from State Route 32 (Batavia Road).



- Eden Park Waterfront (Theodore M. Berry International Friendship Park): The Theodore M. Berry International Friendship Park opened in May 2003 on the site formerly known as Eden Park Waterfront. The approximately 20-acre park is located along the banks of the Ohio River and is owned by the Cincinnati Park Board. The park features several amenities including: an International Plaza featuring ceremonial flags and an interactive fountain that senses and responds to human movement, walkways, earth sculpture, pavilion, sculptures, sitting wall, garden areas representing continents, concession/rental building, and a bike trail. Future plans call for three other pavilions and a series of small gardens. The Theodore M. Berry International Friendship Park is accessible from Eastern Avenue.
- Linwood Athletic Field: Linwood Athletic Field is an approximately 9-acre park located between Eastern Avenue and Wooster Pike. The park is accessible from Wooster Pike and is owned by the Cincinnati Recreation Commission. Also in the vicinity of the athletic fields are Ault Park, the Airport Playfield and Armleder Little Miami Park. An expansion of the park is being developed on Linwood's eastern edge at the site of an old landfill. The hope is to add to the number of athletic fields in the area and protect the natural setting along the Little Miami River. The new park, to be called the Little Miami Park & Sports Complex, will spread over more than 350 acres and will feature soccer fields as well as nature trails. The Cincinnati Recreation Commission is developing the park along with the Cincinnati Park Board. The park complex has been delayed by environmental concerns with the landfill, but officials have ruled the area suitable for the park, and some preliminary work has begun.
- <u>Little Miami Golf Center</u>: The Little Miami Golf Center is a 273-acre recreational area owned and operated by the Hamilton County Park District. The site offers the following amenities: a 9-hole regulation golf course, a 9-hole par 3 golf course, driving range, 18-hole miniature golf course, lawn bowling facility, and Bass Island for bird watching, fishing, and canoeing. The Little Miami Golf Center is accessible from Newtown Road.
- <u>Mariemont Community Gardens (Township and Public Gardens Park)</u>: Mariemont Community Gardens is an approximately 75-acre greenspace area owned by the Village of Mariemont. Residents of the Village of Mariemont annually use the site for gardening activities in the fall and spring seasons. Public access to the Little Miami River to the south for recreation is also available. The gardens are located in the floodplain northeast of the Horseshoe Bend preserve. The greenspace is accessible from US 50. The gardens are also known as Goose Island.
- <u>Maquier Field</u>: Maquier Field is located off of Old SR 74 near the intersection of SR 32 in Clermont County. The approximately 13-acre park has 8 baseball and softball facilities.
- <u>Rakestraw Memorial Recreational Center</u>: The Rakestraw Memorial Recreational Center is a Cincinnati Recreation Commission property that is accessible by Eastern Avenue and Kellogg Avenue. The recreational area covers 16 acres of athletic fields.
- <u>Sawyer Point P&G Pavilion</u>: Part of the linear mile-long Cincinnati Central Riverfront, Sawyer Point P & G Pavilion is located just south of downtown along the Ohio River and covers approximately 8 acres. Along with a unique design, it features award winning landscaping, a performance pavilion, concessions, an outdoor skating rink, eight outdoor tennis courts, three sand volleyball courts, a world-class playground, a dynamic water feature, and many other attractions. The P&G Pavilion is known throughout the Tri-State region as a great place for free concerts. The park's main entrance is located at the intersection of Pete Rose Way and Eggleston Avenue.
- <u>Short Park (Robert W. Short Park)</u>: The Village of Newtown owns Short Park. The approximately 22-acre park amenities include: a walking path, playgrounds, basketball courts, soccer fields, a gazebo, and plenty of open space for a yearly carnival. Short Park is located off Newtown Road in the western area of Newtown and is accessible from Debolt Street. The Little Miami Golf Center is located north of Short Park.



- <u>Veteran's Memorial Park</u>: Veteran's Memorial Park is a 24-acre park owned and operated by Union Township. Some of the park amenities include: a walking path with exercise stations, playground, sand volleyball, soccer and baseball fields, basketball and tennis courts, a veteran's memorial, restrooms, concessions, a lake, and shelter/picnic areas. Veteran's Memorial Park is accessible from Gleneste-Withamsville Road and Clough Pike.
- Yeatman's Cove: Yeatman's Cove Park, opened in 1976 by the Cincinnati Recreation Commission, is the site where Cincinnati was founded. This site was one of the earliest landing places in Cincinnati. Yeatman's Cove is part of the Cincinnati Central Riverfront, which also includes Sawyer Point and Bicentennial Commons. The park is popular for concerts, picnics, festivals and river watching. One unique aspect of the park is the Serpentine Wall, a contoured concrete wall of steps along the riverfront. Another feature of Yeatman's Cove Park is the Lytle Place Fountain and wading pool. Other features of this park are the fitness area, playground, volleyball courts, the Lindner Tennis Complex, the all-weather skating rink, fishing pier, and Schott Amphitheater (which preserves a section of Cincinnati's old waterworks plant).

Public-Owned Greenspaces (Potential Section 4(f) Resources)

As noted previously, the public-owned greenspaces listed below may not currently have an existing recreational use, but may be planned for such use in the future. Section 4(f) applicability for these areas will be determined in Tier 2 on a project-by-project basis based on facility use at that time.

- <u>Anderson Township Greenspace</u>: The Anderson Township Greenspace is approximately 49 acres in size and owned by Anderson Township. The greenspace is accessible from SR 32 (Batavia Road) and is near residential areas.
- <u>Greenspace Batavia Road</u>: Greenspace accessible from Batavia Road (SR 32) is a wooded area owned by Anderson Township in eastern Hamilton County. The wooded area covers 36 acres.
- <u>Old Fort Greenspace Acquired Area</u>: The Old Fort Greenspace Acquired area, owned by Anderson Township, is approximately 20 acres. The greenspace is in a former residential area in the floodplain. The area located off of Newtown Road is accessible from Debolt Road.

School Playgrounds

According to the Section 4(f) policy paper, school playgrounds that are open for public use outside of school activities and functions are subject to Section 4(f) requirements. Several school properties are clipped by roadway alternatives in the Red Bank Road and Eastgate areas (see Tables 5.6 and 5.8), including Seven Hills School, John Parker Elementary, Gleneste High School, Summerside Elementary and Brantner Lane Elementary. The determination of whether a school playground is encroached upon at these locations and whether Section 4(f) applies will be conducted during Tier 2 work. Therefore, no school playground or other property will be identified in this Tier 1 draft evaluation as a Section 4(f) resource.



Preliminary Evaluation of Impacts to Public Parks, Recreation Areas, and Wildlife Refuges

Feasible alternatives developed in Tier 1 are not specific alignment locations, but alternative corridors that will be further developed and evaluated during Tier 2 of the Eastern Corridor study. Table 5.10 lists the public parks and recreational areas that occur, in part, within the estimated conservative corridor widths of the Tier 1 feasible alternatives - indicating a possible Section 4(f) use of the area. Also included in Table 5.10 are public-owned greenspaces with potential Section 4(f) applicability (to be determined in Tier 2). Various impact corridor widths were used, depending on the mode and alternative. Actual encroachment on these features may be avoided or impacts may be minimized once alignment location and configuration is more specifically determined during Tier 2, and detailed design is developed.

The preliminary evaluation presented in Table 5.10, therefore, identifies for each facility:

- The alternative corridors, by mode, that encroach upon that facility indicating a possible Section 4(f) use, and
- Whether a possible Section 4(f) use of the facility by the alternative is expected to be unavoidable (for example, the alternative crosses through the center of the park or a substantial portion of the park/recreational area), or whether a possible Section 4(f) use may be avoided during further project development (for example, the alternative corridor only clips the edge of the park/recreational area and encroachment may be avoided during detailed design).
- Other similar alternatives currently under consideration that completely avoid the facility at this time; similar alternatives refer to those within the same project segment or sub-segment (same general geographic location, but different corridor).

Avoidance alternatives and measures to minimize harm will be further addressed in Tier 2.

and whome Reluges				
	Tier 1 Alterna With Possible	Similar Alternatives		
Section 4(f) Resource	Alternatives with Expected Unavoidable Section 4(f) Use	Alternatives with Expected Avoidable Section 4(f) Use	With No Expected Section 4(f) Use (se text)	
Airport Playfield	n/a	Oasis Rail - Lunken Alternative	Oasis Rail Line (alternative following existing rail)	
Anderson Township Greenspace (potential Section 4(f) resource)	Alternative T (relocated SR 32)	Alternative S (relocated SR 32)	Alternatives Q and R (relocated SR 32)	
Armleder Little Miami Park	n/a	Oasis Rail - Lunken Alternative	Oasis Rail Line (alternative following existing rail)	

Table 5.10. Preliminary Section 4(f) Analysis For Public Parks, Recreation Areas, and Wildlife Refuges



and Wildlife Refuges				
Tier 1 Alternative CorridorsWith Possible Section 4(f) UseSimilar Alternation				
Section 4(f) Resource	Alternatives with Expected Unavoidable Section 4(f) Use	Alternatives with Expected Avoidable Section 4(f) Use	With No Expected Section 4(f) Use (see text)	
Ault Park	Wasson Rail Line, Alternative A2 (mainline Red Bank), Alternative B3 (Red Bank interchange)	Alternative B2 (Red Bank interchange option)	Oasis Rail Line, Alternative A (mainline Red Bank), Alternative B1 (Red Bank interchange)	
Bicentennial Commons	Oasis Rail Line	n/a	n/a	
Clear Creek Park	Alternatives J, K, L (relocated SR 32)	Alternative I (relocated SR 32)	Alternatives G, H (relocated SR 32)	
Eden Park Waterfront (Theodore M. Berry International Friendship Park) Note: also a Section 6(f) resource; see Chapter 5.4	n/a	Oasis Rail Line, Eastern Riverfront Rail Station	n/a	
Greenspace – Batavia Road 1	Alternatives R, S (relocated SR 32)	Alternatives Q, T (relocated SR 32)	n/a	
Batavia Road 2 (potential Section 4(f) resource)	Alternative T (relocated SR 32)	n/a	Alternatives Q, R, S (relocated SR 32)	
Linwood Athletic Field	Oasis Rail – Lunken Alternative	Oasis Rail Line (alternative following existing rail)	n/a	
Little Miami Golf Center	Alternatives G, H, I, J, K (relocated SR 32)	Alternative O (relocated SR 32)	Alternative L (relocated SR 32)	
Mariemont Community Gardens	Alternative C (relocated SR 32)	n/a	Alternatives D, E, F (relocated SR 32)	
Maquier Field	n/a	Alternatives P(IV), Q3(IV), I(IV) - local road improvements	n/a	
Old Fort Greenspace Area (potential Section 4(f) resource)	Alternative G (relocated SR 32)	n/a	Alternatives H, I, J, K, L (relocated SR 32)	
Rakestraw Memorial Recreational Center	n/a	Oasis Rail Line – Columbia Tusculum Station	n/a	
Sawyer Point Pavilion	Oasis Rail Line	n/a	n/a	
Robert W. Short Park (Short Park) Note: also a Section 6(f) resource; see Chapter 5.4	n/a	Alternatives I, L, K (relocated SR 32)	Alternatives G, H, J (relocated SR 32)	
Veteran's Memorial Park	n/a	Alternatives Q3(IV), I(IV) - local road improvements	Alternatives P(IV) -local road improvements	
Yeatman's Cove	Oasis Rail Line	n/a	n/a	

Table 5.10. Preliminary Section 4(f) Analysis For Public Parks, Recreation Areas, and Wildlife Refuges



Summary

Fifteen of the public parks and recreation areas in the detailed study area that are subject to Section 4(f) requirements, and three public-owned greenspaces with potential Section 4(f) applicability, have the potential to be impacted by the project. Avoidance and minimization of impacts will further be evaluated in Tier 2 work. Section 4(f) evaluation and mitigation measures will also be determined, as necessary, in Tier 2 of the Eastern Corridor project.

5.3.3. Section 4(f) Resources - Historic And Archaeological

Section 4(f) applies to historic properties and archaeological sites that are listed in or officially determined eligible for the National Register of Historic Places. Only the known historic properties and archaeological sites that are currently listed in the National Register are included in the Tier 1 work for the Eastern Corridor. Other cultural resources that may be eligible, but have not yet been specifically evaluated, will be further studied in Tier 2 work.

Preliminary Evaluation of Impacts to Historic and Archaeological Resources

Nineteen National Register Individual Properties, including one historic bridge, and five National Register Historic Districts occur within the boundaries of the Eastern Corridor detailed study area, as described in Chapter 4.3.2 and shown on Figure 4.16. Of these 24 National Register resources, eight - including six historic architecture resources and two archaeological resources - are potentially impacted by the feasible alternatives under consideration within the Eastern Corridor. These eight resources are shown on Figure 5.1, and potential impacts are summarized in Table 5.11.

Table 5.11 lists the National Register sites that occur within the estimated conservative corridor widths of the Tier 1 feasible alternatives, either wholly or in part - indicating a possible Section 4(f) use of the resource. Various corridor widths were used for determining encroachment, depending on the mode and alternative. Actual encroachment on these resources may be avoided or impacts may be minimized once alignment location and configuration is more specifically determined during Tier 2, and detailed design is developed.

The preliminary evaluation presented in Table 5.11, therefore, identifies for each National Register site:

- The alternative corridors (by mode) that encroach upon that site, indicating a possible Section 4(f) use of the site, and
- Whether a possible Section 4(f) use of the site by the alternative is expected to be unavoidable (for example, the alternative crosses through the center of the National Register site or a substantial portion of the site), or whether a possible Section 4(f) use may be avoided during further project development (for example, the alternative corridor only clips the edge of the National Register site and encroachment may be avoided during detailed design).
- Other similar alternatives currently under consideration that completely avoid the resource at this time; similar alternatives refer to those within the same project segment or sub-segment (same general geographic location, but different corridor).



Avoidance alternatives and measures to minimize harm will be further addressed in Tier 2.

Archaeological Resources			
	Tier 1 Alternat With Possible S	Similar Alternatives With	
Section 4(f) Resource ^[1]	Alternatives with Expected Unavoidable Section 4(f) Use	Alternatives with Expected Avoidable Section 4(f) Use	No Expected Section 4(f) Use (see text)
Cincinnati Street Gas Lamps District	Wasson Rail Line (existing rail line is within district boundaries)	n/a	n/a
Columbia Baptist Cemetery	n/a	Oasis Rail Line (Lunken alternative)	Oasis Rail Line (mainline)
Fulton-Presbyterian Cemetery	n/a	Oasis Rail Line (Lunken alternative)	Oasis Rail Line (mainline)
Hoodin Building	n/a	Oasis Rail Line	n/a
Mariemont Historic District	n/a	Alternatives B1 (interchange option), C, D, SR2 (relocated SR 32)	Alternatives B2, B3 (interchange options) Alternatives E, F (relocated SR 32)
Hahn Field Archaeological District	Alternatives C, D, E, F, G, H, I, J, K, L (relocated SR 32)	n/a	n/a
Perin Village	Alternatives G, H, J, K, O (relocated SR 32)	Alternative I (relocated SR 32)	Alternative L (relocated SR 32)
Odd Fellow's Cemetery Mound	n/a	Alternative P (relocated SR 32)	Alternatives M, N, O (relocated SR 32)

Table 5.11.	Preliminary Section 4(f) Analysis for Historic and
	Archaeological Resources

¹¹ No structures listed in the Historic Bridge Inventory (Second Ohio Historic Bridge Inventory, Evaluation and Preservation Plan, Ohio Department of Transportation, 1990) occur within the estimated conservative corridor widths of the Tier 1 feasible alternatives.

Summary

Eight cultural resources currently listed on the National Register of Historic Places may be potentially impacted by feasible alternatives under consideration in the Eastern Corridor.

Of these eight resources, the Hahn Field Archaeological District is encroached upon by all of the relocated SR 32 shared highway/rail transitway corridors in the Ohio 32/Wooster West Area. Also, the Cincinnati Street Gas Lamps District will be encroached upon by the future Wasson Rail Line alternative in Area #1. Section 4(f) evaluation will be further developed in Tier 2 of the Eastern Corridor study regarding these resources. In addition, avoidance and minimization of impacts to other identified National Register archaeological resources will further be evaluated in Tier 2 work, and Section 4(f) evaluation and mitigation measures will be developed, as necessary.



5.3.4. Preliminary Section 4(f) Applicability - Wild And Scenic Rivers

Public-owned waters of rivers designated wild and scenic by the National Wild and Scenic Rivers Act may be subject to Section 4(f) involvement, and public owned lands adjacent to the river may be subject to Section 4(f) if they are administered for recreational or other Section 4(f) purposes.

The Little Miami River within the project study area was designated in 1971 as a State Scenic River, and, in 1980, as a state-administered component of the national wild and scenic rivers system, with a recreational classification. The river is canoeable within the study area boundaries, however no public-owned lands, river access points, forest preserve areas (per ORC 1501.19.191), or approved land management areas occur adjacent to the Little Miami River in the crossing vicinity. Several public parks do occur along the floodplain in the project crossing vicinity, but not immediately adjacent to the river, and public parks do occur along the river upstream and downstream of the project outside the proposed crossing area. In addition, a National Register District - the Hahn Archaeological District - occurs immediately adjacent to the Little Miami River within the study area boundaries. One privately-owned greenspace, the Horseshoe Bend Nature Preserve, also occurs within the study area boundaries at the project crossing location.

Four possible Little Miami River crossing locations are currently under consideration in Tier 1 of the Eastern Corridor work program, however, no site specific impacts or bridge structure design details have been developed; this work will be conducted during Tier 2. However, it has been determined in Tier 1 that a clear span, consisting of a shared roadway/rail transitway crossing, would be used over the Little Miami River, with no instream piers or other permanent instream structures. It is possible that construction may involve impacts of a temporary nature, such as placement of a temporary crossing, as determined during detailed design in Tier 2.

Based on the above, Section 4(f) may apply to the Little Miami River in the project vicinity. Section 4(f) applicability will be further evaluated during Tier 2 of the Eastern Corridor project when more site-specific impacts and crossing structure details are developed, and agency coordination and review will be conducted, as necessary.

5.4. SECTION 6(f) (L&WCF) AND SECTION 1010 (UPARR) RESOURCES

Section 6(f) of the Land and Water Conservation Fund Act (L&WCF) and Section 1010 of the Urban Park and Recreation Recovery (UPARR) program provides that recreational sites that have received L&WCF or UPARR funds may not be converted to other uses without the approval of the Secretary of the Interior. Public recreational areas that have received funding under either of these two programs should be avoided, if possible. The conversion of any of these sites to a transportation use would require replacement of the recreational properties.

Two resources potentially impacted by feasible alternatives under consideration in the Eastern Corridor have received L&WCF funds and are subject to Section 6(f) evaluation. These Section 6(f) resources are the Robert Short Park (also known as Debolts Playfield) and Eden Park Waterfront (also known as Theodore M. Berry International Friendship Park). See



Chapter 5.3.2 of this document for a description of these resources and Table 5.10 for a summary of preliminary impacts.

There are several other facilities in the vicinity of the Eastern Corridor, but not within the detailed study area or impact corridors of the feasible alternatives under consideration at this time, that have obtained L&WCF funding. These include three sites sponsored by ODNR along the Little Miami River (Little Miami River Scenic Trail, Little Miami River Access, and Little Miami River Scenic Park), and several other parks that were sponsored locally by the City of Cincinnati and Village of Newtown.

There are no facilities within the corridors of feasible alternatives under consideration in the Eastern Corridor that have received UPARR funding, although several sites sponsored by the City of Cincinnati do occur in the general area.

5.5. PRELIMINARY SECTION 7 APPLICABILITY (WILD AND SCENIC RIVERS)

The Little Miami River, in being designated within the Eastern Corridor as a State Scenic River and state-administered component of the national wild and scenic rivers system, with a recreational classification, may be subject to evaluation under Section 7 of the National Wild and Scenic Rivers Act.

<u>Agency Coordination Regarding Section 7 Applicability:</u> Early coordination for the project regarding Section 7 applicability was conducted with representatives from the National Park Service (NPS), the Federal Highway Administration (FHWA; Ohio Division and Washington, D.C), the Department of the Interior (DOI), and the Ohio Department of Transportation, Central Office (ODOT). The outcome of this coordination was summarized in a letter dated March 5, 2003 from ODOT to the Ohio Department of Natural Resources (see Chapter 6.4 and Appendix C).

Overall, it was determined from this coordination that Section 7 would not apply for the mainstem of the Little Miami River if the proposed bridge over the Little Miami was designed so as to not impact the bed or bank below the Ordinary High Water Mark (OHWM). However, NPS Section 7 Review may be required if the selected alternative includes any instream work on the mainstem or tributaries. For activities on the mainstem of the Little Miami River, the Section 7 review would determine if the proposed action would have a direct and adverse affect on the free-flowing nature of the river, its water quality and values for which the river was Outstandingly remarkable values (ORV's) for the Little Miami River include: designated. scenic/aesthetic, recreational, fish and wildlife, geologic, and historic (cultural and archaeological). For developments below or above the Little Miami River or on a tributary, an evaluation would be conducted to determine if the project would invade the area or unreasonably diminish the designated values. Such actions that could trigger Section 7 review include bank stabilization, the placement of temporary or permanent fills or structures, bank or channel shaping, channel dredging, or any other type of instream activities in the mainstem or a tributary channel.



Four possible Little Miami River crossing locations are currently under consideration in Tier 1 of the Eastern Corridor work program, but no site specific impacts or bridge details have been developed at this time; this work will be conducted in Tier 2. However, it has been determined in Tier 1 that the crossing of the Little Miami River would consist of a shared roadway/transit clear span crossing, with no instream piers or other instream structures, and no channel work below the OHWM. It is possible that construction may involve impacts of a temporary nature, such as placement of a temporary crossing, as determined during detailed design in Tier 2.

As such, it is anticipated at this time that Section 7 would not apply for the mainstem of the Little Miami River. However, as noted above, a Section 7 review may be required if the preferred alternative selected in Tier 2 involves any instream work on a tributary or tributaries to the Little Miami River, or any temporary actions within the mainstem (to be determined during detailed design).

Section 7 applicability, therefore, will be re-evaluated during Tier 2 of the Eastern Corridor study when more site-specific impacts and crossing structure details for the Little Miami River and adjacent tributaries are developed, and agency coordination and Section 7 review/determination will be conducted, as necessary. This information regarding Section 7 applicability is also reiterated in Chapter 4.1.4 of this DEIS.

Preliminary evaluation of the expected cumulative impacts of the Eastern Corridor project on the Little Miami River's free-flowing character, water quality and designated ORV's is presented in Chapter 5.6.

5.6. PRELIMINARY EVALUATION OF SECONDARY AND CUMULATIVE IMPACTS

Secondary and cumulative impact analysis requirements are established by the Council on Environmental Quality's 1978 Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act (40 CFR 1500-1508). Guidance for evaluating secondary and cumulative impacts under NEPA are provided by the CEQ (Considering Cumulative Effects Under the National Environmental Policy Act, CEQ, January, 1997) and by FHWA (Position Paper: Secondary and Cumulative Impact Assessment in the Highway Project Development Process, 1992; Interim Guidance: Questions and Answers Regarding Indirect and Cumulative Impact Considerations in the NEPA Process, January 31, 2003).

Analysis of secondary and cumulative impacts, based on federal guidance, involves evaluation of the expected direct impacts and secondary (indirect) environmental effects of a project, and discussion of incremental, resource-specific impacts when considering past, present and reasonably foreseeable future actions. In general, this evaluation consists of: 1) identification of environmental resources affected by a project (directly and indirectly), 2) identification of past, present, and reasonably foreseeable future actions, including the project, that have impacted (or that will impact) resources affected by the project, and 3) evaluation of the overall cumulative impacts on resources based on consideration of their condition relevant to the extent of past, present and future actions, within appropriately identified geographic and temporal limits.



The Tier 1 EIS for the Eastern Corridor identifies the expected range of conditions, range of costs, and range of impacts for multi-modal alternatives that have been determined to be geometrically feasible, address transportation need, and that have been developed with consideration of stakeholder input and environmental, financial, land use and community issues. The MIS recommended transportation plan and the Eastern Corridor land use vision plan were used as the framework for alternatives development during this work phase. Feasible alternatives developed for Tier 1 are not specific alignment locations, but alternative corridors that represent the range of options to be used during Tier 2 as the starting point for more specific alignment development and impact analysis - by mode, on a project-by-project basis. For Tier 1, a preliminary evaluation of the secondary and cumulative impact issues expected to be associated with the overall multi-modal transportation plan for the Eastern Corridor has been developed, as presented below.

5.6.1. Summary of Direct Project Impacts

Assessment of secondary and cumulative impacts begins with establishing baseline conditions for expected direct impacts.

Range of Expected Direct Impacts

Preliminary ranges of impacts for highway and rail transit alternatives under consideration in the Eastern Corridor, and qualitative impacts for proposed TSM improvements, transit hubs, and bikeways, are presented in a series of impact tables included in Chapter 5.1, Tables 5.2 through 5.9. Overall, the various modal alternatives are expected to directly affect the following environmental resources/features: the Little Miami River - a State Scenic River and state-administered component of the National Wild and Scenic Rivers System; other USGS surface streams; floodplain; aquifer; wetlands; woodlands; potential habitat for federal and state-listed species; parkland; hazardous material concern sites; residential, commercial and other development with potential displacements; cultural historic and archaeological resources; air quality; noise; environmental justice groups; and visual resources.

Tier 1 feasible alternatives are not specific alignment locations, but alternative corridors that will be further developed during Tier 2. Consequently, impacts presented in this Tier 1 DEIS are based on conservative estimates of corridor widths for the purpose of presenting an overview of the range of likely impacts expected by the different alternatives being considered for the Eastern Corridor. Actual direct impacts will be different (may be higher or, more likely, lower) once alignment location and configuration is more specifically determined during Tier 2.

Impacts vary by mode and by location within the Eastern Corridor, and for highway and rail transit alternatives, the ranges of impacts presented in Tables 5.4, 5.6, 5.7 and 5.8 of Chapter 5.1 are reported by segment, generally corresponding to how individual projects may break out for further study in Tier 2. Tables 5.12 and 5.13 summarize the impact information from Chapter 5.1 as total Eastern Corridor end-to-end highway and rail transit impacts for key resources.

It should be noted that the information presented in Tables 5.12 and 5.13 are not additional impacts to those described by mode and by geographic area in Chapters 5.1 and 5.2. Rather,



these are summaries of estimated impacts for the Eastern Corridor as a whole, as previously reported in Chapters 5.1 and 52, recaptured here for the purpose of incremental secondary and cumulative impact evaluation.

Table 5.12. Summary of Preliminary Range of Expected Direct Impacts to Key Environmental Resources by Proposed End-to-End HIGHWAY ALTERNATIVES in the Eastern Corridor (I-71/Red Bank Road to I-275/SR 32 in Eastgate)

(I-/1/Red Bank Road to		• •
Impact Category (see Table 5.1 for categor	y description)	Range of Impacts
Ecological Features and Hazardous Material	s:	
USGS Streams (number)		12 to 16
Estimated Stream Length within Alternative Cor crossing (If) parallel (If)	ridor:	3,560 to 13,125 2,744 to 8,520
Floodplain (acres)		180 to 339
Sole Source Aquifer (acres)		315 to 474
Wetlands (acres)		2.4 to 12.2
Quality Woodlands (acres)		3 to 32
Federal/State Listed Species (acres)		0 to 1
Parks and Greenspace (number of sites; acres))	7 to 17 sites; 44 to 120 acres
Hazardous Material Concern Sites (number)		3 to 9
Land Use and Farmland:		
Residential Use (acres)		184 to 389
Commercial Use (acres)		129 to 189
Industrial Use (acres)		74 to 137
Agricultural Use (acres)		55 to 159
Cultural Resources:		
National Register Property (number)		0 to 1
National Register District (number)		1 to 3 (Hahn, Perin, Mariemont)
Other Cultural Resources (number)		9 to 28
Socioeconomic Factors:		
Potential Residential Displacement (number)		95 to 479 single family 3 to 21 multi-family
Potential Commercial/Industrial Displacement (number)		78 to 142
Potential Institutional Displacement (number)		3 to 11
Air Quality, Noise/Vibration and Visual Reso	urces:	
Air Quality		Regional conform.
Highway Noise – Number of Potentially Impacte	ed Receptors	
	Category B: Category C:	702 to 1,025 222 to 247
Rail Noise – Number of Potentially Impacted Re rail segments paralleling SR 32)	eceptors (for	
,	Category 1:	7 to 18
	Category 2: Category 3:	98 to 219 9 to 23
	Calegory 3.	91023



Table 5.12. Summary of Preliminary Range of Expected Direct Impacts to Key Environmental Resources by Proposed End-to-End HIGHWAY ALTERNATIVES in the Eastern Corridor (I-71/Red Bank Road to I-275/SR 32 in Eastgate)

Impact Category (see Table 5.1 for category description)		Range of Impacts	
Vibration – Number of Potentially Impac rail segments paralleling SR 32)	ted Receptors (for		
	Category 1: Category 2: Category 3:	0 to 1 20 to 109 0 to 4	
Visually Sensitive Resources		Several public parks and greenspaces; NR districts; LMR; Dry Run bottom area	

Table 5.13. Summary of Preliminary Range of Expected Direct Impacts for Proposed End-to-End RAIL TRANSIT ALTERNATIVES in the Eastern Corridor (for Rail Segments Independent of SR 32 Alignment Only)

Impact Category (see Table 5.1 for category description)	Oasis Line (CBD to Milford)	Wasson Line (I-71 LRT to Eastgate)
Ecological Features and Hazardous Materials:		
USGS Streams (number)	3	2
Estimated Stream Length within Alternative Corridor: crossing (If) parallel (If) Floodplain (acres)	350 780 40 to 59	330 0 0
Sole Source Aquifer (acres)	101	10
Public Water Supplies (number)	1	0
Wetlands (acres)	0.1	0
Quality Woodlands (acres)	1.3	2.6
Federal/State Listed Species (number)	0	0
Parks and Greenspace (number)	7 to 9	2
Parks and Greenspace (acres)	11 to 14	3
Hazardous Material Concern Sites (number)	6	1
Land Use and Farmland:		
Residential Use (acres)	25	13
Commercial Use (acres)	11 to 15	12
Industrial Use (acres)	33 to 36	1.5
Agricultural Use (acres)	2.4	1.1
Institutional Use (acres)	1.1	0.1
Cultural Resources:		
National Register Property (number)	3	0
National Register District (number)	0	1 (Cinc. Gas Lamps)
Other Cultural Resources (number)	20	6 to 7
Socioeconomic Factors:		
Potential Residential Displacement (number)	21 single family 0 multi-family	12 to 18 single family 1 multi-family
Potential Commercial/Industrial Displacement (number)	2	4 to 7



Table 5.13. Summary of Preliminary Range of Expected Direct Impacts forProposed End-to-End RAIL TRANSIT ALTERNATIVES in the Eastern Corridor(for Rail Segments Independent of SR 32 Alignment Only)

Impact Category (see Table 5.1 for category description)	Oasis Line (CBD to Milford)	Wasson Line (I-71 LRT to Eastgate)
Potential Institutional Displacement (number)	1	2
Air Quality, Noise/Vibration and Visual Resources:		
Air Quality	Regional conform.	Regional conform.
Rail Noise – Number of Potentially Impacted Receptors Category 1: Category 2: Category 3:	14 to 16 775 - 779 48 to 51	1 791 - 810 10 to 12
Vibration – Number of Potentially Impacted Receptors Category 1: Category 2: Category 2:	14 309 - 310 6 to 8	1 348 - 375 10 to 11
Visually Sensitive Resources	Parks - riverfront/ Lunken area; LMR; East Fork	Ault Park

5.6.2. Factors Affecting Secondary Project Impacts

Existing and Future Transportation/Access

Existing and Proposed Highway Access - Existing Red Bank Road and existing SR 32 west of I-275 are both arterial roadways with uncontrolled access. Both serve a mix of heavy commercial, industrial and residential development, and are characterized by a high number of access points. Existing interchanges on these facilities occur at I-71/Red Bank Road, at Red Bank Road/US 50, and at I-275/SR 32; otherwise intersections on these facilities are at-grade. Proposed improvements on Red Bank Road in the Eastern Corridor involve access consolidation for establishing this section of roadway as a controlled access arterial. Proposed access improvements consist of the upgrade of existing intersections at Madison Road/Duck Creek Road and Erie Avenue, and a major upgrade to the existing interchange at Red Bank Road/US 50; no new access points are proposed on Red Bank Road in the Eastern Corridor.

Proposed improvements on SR 32 involve access consolidation to establish this facility as a controlled access arterial west of I275, and a limited access facility east of I275. Proposed access improvements on SR 32 consist of: a) a new access location along Newtown Road - either at-grade or an urban interchange, b) improved access at Little Dry Run Road, Ancor Connector, Eight Mile Road, Mt. Carmel-Tobasco Road and Bells Lane - possibly on new location, depending on the alternative, c) upgrade of the existing I-275/SR 32 interchange and SR 32/Eastgate Boulevard interchange, and d) a new interchange at SR 32/new Bach-Buxton Road extension. The latter SR 32 access location – at a new Bach-Buxton Road extension - is the only completely new access point proposed for SR 32. In addition, existing access to SR 32 from Gleneste-Withamsville Road, and to SR 32 from two locations on Old SR 74 will be eliminated through grade-separation in the long-term. As a controlled access facility, no new



access will be allowed along the Little Miami River floodplain from the Little Miami River east to Newtown Road.

<u>Existing and Proposed Bus and Rail Transit Access</u> – Currently, rail transit does not exist in the project area. Existing bus transit hubs include the Riverfront Transit Center in downtown Cincinnati, and the Anderson/Beechmont Hub, which is currently under construction at Beechmont Avenue and Five Mile Road.

Proposed new transit access in the Eastern Corridor includes the following: 1) six new busonly hubs, 2) four new bus/rail transit stations, 3) six new rail-only transit stations for the Oasis Line, and corridor preservation for the Wasson Line (Note: the Wasson Line is a secondary, long-term rail transit corridor under consideration for the Eastern Corridor, dependent upon implementation of the I-71 LRT project).

Current Development Activities

Based on existing land use mapping included in the Eastern Corridor Land Use Vision Plan (Meisner and Associates, 2000; see DEIS Figure 1.3), roughly 76 percent of the Eastern Corridor is currently developed, with mostly residential (42 percent), commercial and industrial (10 percent), and vacant (11 percent) land uses. Greenspace and agricultural land each comprise about 12 percent of the Eastern Corridor. Predominant zoning categories in the area, shown on Figure 4.9, include residential, manufacturing/industrial, business and, along the Little Miami and Ohio Rivers, riverfront and riverfront recreational-residential-commercial.

Residential, commercial and industrial development is dynamic in the Eastern Corridor. Key recent activity areas include: 1) Red Bank Corridor - primarily infill development and a trend towards conversion from retail to office/industrial, 2) Ancor area east of Newtown - primarily infill development into office, industrial, and recreational land uses, 3) Anderson Township – primarily new residential subdivisions in the Newtown vicinity mostly south of SR 32, and revitalization of the former Beechmont Mall area along SR 125, 4) the Ohio Riverfront and Cincinnati Riverfront areas – community revitalization and recreational development, and 5) the Eastgate area of Union Township - primarily commercial/retail and office development. From Table 4.8 of this DEIS, which presents net building space demand for the Eastern Corridor (Economic Research Associates, 2002), current development consists of an increase in office space, industrial space, residential units, multi-family units, hospitality rooms, and a reduction in retail space.

No transportation projects listed by Ohio's Transportation Review Advisory Council are slated for construction in 2004 in the Eastern Corridor. Transportation improvements in the Eastern Corridor that are reported as currently under construction in OKI's 2030 Regional Transportation Plan 2004 Update (TIP/STIP update) are listed below. Several of these projects have been recently completed, and all are included in the No Build Alternative (see Chapter 3.5).

- SR 32 at Stonelick-Olive Branch Rd new interchange (recently completed)
- I-275 from 0.58 mi S of SR 32 to 0.3 mi S of Five Mile Rd lane addition (contract let)
- I-275 from 0.3 mi S of US 50 to 0.58 mi S of SR 32 lane addition (recently completed)
- SR 32 from SR 125 to 0.94 miles east of Newtown resurfacing (contract let)



- US 50 from eastern termini of Ft. Washington Way to Bains repair bridge, resurface (contract let)
- SR 125 from Salem Road to Clermont County Line closed loop signal system (contract let)
- I-71/I-75 landscaping and restoration of area disturbed by Ft. Washington Way project (contract let)
- SR 561 from I-71 to Cincinnati east corporation line resurfacing (contract let)

Additional road improvements by local jurisdictions are also under construction in the Eastern Corridor, however, a comprehensive list of projects currently underway is not available. For the most part, these are maintenance-type projects, and some transportation system management improvements such as signal coordination, intersection improvements, safety upgrades or minor lane additions.

Greenspace and recreational development is also actively occurring in the Eastern Corridor, consisting of: 1) new bike trails, including recent construction of new extensions of the Ohio River Trails along Eastern Avenue, the Little Miami River Scenic Trail in the Newtown area, and a shared use trail in Anderson Township along Five Mile Road between State Road and Clough Pike, 2) new/expanded parkland and other types of recreational development along the Ohio Riverfront, Cincinnati Riverfront and Lunken Airport vicinities, and 3) new acquired greenspace in Anderson Township. Many of these greenspace/recreational development areas have been coordinated with the anticipated multi-modal transportation framework of the Eastern Corridor project.

Expected Future Development

Results of an economic analysis conducted for the Eastern Corridor (Economic Research Associates, 2002), as described in Chapter 1.4, indicate that by the end of twenty years the Eastern Corridor study area will gain 24,500 residents and 8,100 jobs over what it would without the Eastern Corridor MIS recommended transportation improvements. Overall, the market potential for the Eastern Corridor with MIS recommended transportation improvements is predicted, at the end of twenty years, to consist of more office space, retail space, industrial space, single family units, multi-family units, and hospitality rooms compared to the market potential of the Eastern Corridor without proposed transportation improvements.

Whereas information from the economic study indicates that development is expected to occur in the Eastern Corridor with proposed transportation improvements in place, review of future land use mapping from the Eastern Corridor Land Use Vision Plan (Meisner and Associates, 2002; see DEIS Figure 1.4) provides insight as to the types of locations where this development is planned to occur. Depicted below, from the Eastern Corridor Land Use Vision Plan, is a tabular summary of the change in land use from existing to future by land use category. All of the desired future land use picture for the Eastern Corridor was developed in concert with extensive public and stakeholder involvement and comprehensive land capability analysis. The final plan, as reflected in the categorical change summary below, was adopted unanimously by the local stakeholder guidance committee and corresponding county planning commissions.



Comparison of Land Use Acreage between Existing Land Use and the Eastern Corridor Land Use Vision Plan			
Land Use	Land Use Vision Plan Acreage	Existing Land Use Acreage	Acreage Change
Agriculture	6556	6451	105
Open Space	11230	8917	2313
Educational	1138	1147	-8
Institutional	2362	2486	-124
Rural Estate Residential	6416	4869	1547
Low Density Residential	9615	7842	1774
Low-Medium Density Residential	8694	6892	1801
Medium Density Residential	5064	4587	477
Medium-High density Residential	2493	2339	154
High Density residential	2189	1914	275
Multi-Family Residential	2454	2475	-21
Mobile Homes	135	136	-1
Mixed Use	2465	28	2437
Commercial	3766	3459	306
Office	502	554	-51
Office/Industrial	1970	0	1970
Light Industrial	1713	1229	484
Heavy Industrial	976	1774	-798
Public Utilities	607	618	-11
Transportation	4558	4636	-78
Vacant Agricultural	0	3828	-3828
Vacant Commercial	54	1453	-1399
Vacant Industrial	30	1149	-1119
Vacant Residential	510	6717	-6027

Overall, the desired future land use for the Eastern Corridor consists of an increase in residential, commercial, office, industrial and mixed-use development, as well as in the amount of greenspace. Development within the Eastern Corridor is expected to be predominantly "infill" by nature, with emphasis on conversion of currently vacant and previously disturbed land uses into desired developed and greenspace/recreational land uses. As such, new encroachment on existing natural features such as woodlands, wetlands and streams, by secondary development is expected to be minimal.

Key locations of expected change in the Eastern Corridor include the Red Bank Road area (Fairfax, East Oakley, Madisonville), the Ohio Riverfront East End Neighborhood, the Lunken Airport area, the California Neighborhood area along US 52, Anderson Town Center, the Ancor area east of Newtown, the US 50/Tech Area of Miami Township at I-275, and the Eastgate area of Union Township. At all of these locations, future land use is characterized by a combination of infill development, consisting of residential, commercial, industrial, office and/or mixed uses, coupled with new or expanded greenspace, recreational or agricultural land uses (see Figures 1.3 and 1.4).



Conclusions on Secondary Impacts

A unique aspect of the Eastern Corridor project has been the development and incorporation of a land use vision plan into the transportation planning process, as reflected in the Eastern Corridor Land Use Vision Plan (Meisner and Associates, 2002; see Chapter 1.3). The land use vision work involved a corridor-wide planning approach for managing growth in the Eastern Corridor over multiple jurisdictions, and was based on consideration of environmental resources and demographic and economic trends and forecasts. As a recommendation of the Eastern Corridor MIS work, it has been a priority that the specific alternatives for the proposed transportation solution for the Eastern Corridor be developed to support, to the extent practicable, a desired land use scenario. As a result, land use priorities were identified first during the land use vision process, and subsequently integrated into the Eastern Corridor transportation planning process to identify appropriate fit of proposed transportation solutions with desired land use.

Secondary development associated with proposed transportation improvements, therefore, is not expected to occur as inadvertent, uncontrolled sprawl, but as carefully planned, desirable development consistent with local and regional planning and supported by the transportation network.

Detailed discussion, by geographic area (Areas #1-6), of how the Eastern Corridor multi-modal plan is expected to fit with desired land use and minimize environmental impacts associated with secondary development is presented in Chapter 5.2. General conclusions regarding secondary impacts of the overall Eastern Corridor multi-modal plan from these discussions and from the information presented above are summarized below. Further evaluation of secondary impacts will take place in Tier 2 as appropriate and on a project-by-project basis when more detailed alignments are developed and final direct impacts are determined.

The following are summary-level conclusions regarding secondary impacts that are expected to result from the Eastern Corridor Multi-Modal Projects in consideration of the template established by the adopted Land Use Vision Plan for the corridor, recognizing land capability, economic market conditions and the multi-modal framework of transportation improvements outlined in the Eastern Corridor MIS and the region's adopted Long Rang Transportation Plan:

- Some amount of residential, commercial and industrial development is expected to be associated with the Eastern Corridor multi-modal improvements.
- Most of this development is expected to be infill by nature, consisting of redevelopment of existing built-up areas, including brownfields, rather than disturbance of woodlands, greenspace, parkland or other natural areas, thereby minimizing impacts on existing natural features and further habitat fragmentation. In addition, land use vision work conducted for the project indicates a future increase in greenspace and agricultural land uses in the Eastern Corridor over time.
- Greenspace land use is planned to increase in the Eastern Corridor over time.
- Proposed transportation improvements have been developed to support local land use priorities for the area, as identified during the Eastern Corridor and use vision work. For example, controlled access proposed for relocated SR 32 across the Little Miami River floodplain is expected to deter



secondary development in this environmentally sensitive area and supports local land use goals for maintaining existing agricultural/greenspace uses through this area.

- Proposed transportation improvements in the Eastern Corridor will primarily occur within existing transportation corridors and, at many locations, multi-modal investments will utilize a single corridor and the same access points (for example, parallel roadway and rail transit facilities within a single corridor, and multi-modal hubs for accessing different types of transportation, like bus, rail, car or bike). Overall, this strategy: 1) maximizes right-of-way efficiency, 2) minimizes potential secondary development at access locations, and 3) minimizes creation of new impervious surface and the associated adverse indirect environmental impacts, such as surface water quality and groundwater quality/quantity.
- Bus and rail transit improvements and new bikeway included in the Eastern Corridor multi-modal plan offer more mode choices and provide opportunity for possible creation of pedestrian-friendly neighborhoods such as those centered around transit hub locations, and mixed-use development. This in the long-term may reduce the overall vehicle miles traveled, within individual neighborhoods and/or the Eastern Corridor as a whole, and minimize associated adverse indirect environmental impacts.
- Based on the above, secondary development associated with proposed transportation improvements is not expected to occur as inadvertent, uncontrolled sprawl, but as carefully planned, desirable development, primarily infill by nature, and consistent with local and regional planning and supported by the transportation network. Overall secondary impacts of the project, therefore, are not expected to be substantial.

5.6.3. Past, Present and Future Actions Relevant to the Cumulative Impact Analysis

Past Actions

Existing environmental conditions and land use patterns in western Hamilton County / eastern Clermont County have primarily been influenced by these past actions: agricultural activities, transportation development, industrial/commercial and residential development, and greenspace preservation.

A timetable of these activities in the Eastern Corridor and their influence on environment resources in the area is summarized below:

- <u>Agriculture</u> the main economic venture of most late 18th century settlers in the area, which led to initial clearing and draining of land, primarily woodland and wetland resources, along the Ohio River and Little Miami River. As small agricultural communities were established, transportation corridors were developed to link them, leading to commercial and industrial development and residential expansion.
- <u>Nineteenth century road transportation</u> limited in scope and focused on development of key turnpikes for the movement of goods; resulted in additional woodland clearing, habitat fragmentation and stream/riparian disturbances for early bridges. In the Eastern Corridor, included construction of:
 - The Madison Turnpike (early 1800's), built as a toll road from Cincinnati to Madisonville;
 - The Cincinnati-Wooster Pike (1844), which generally followed present day Eastern Avenue;
 - The Newtown to Williamsburg Road (1798) and the Cincinnati-Batavia-Williamsburg Pike (early 1800's), which generally followed portions of present day Old SR 74/SR 32;



- The Cincinnati to Portsmouth Toll Road (1831), which generally followed present day SR 125; and
- The Centerville Pike (1880's), which generally followed present day Clough Pike.
- <u>Nineteenth century railroad and passenger rail transportation</u> the key method of transportation for the movement of goods and people during this era; resulted in additional land clearing, habitat fragmentation and stream/riparian disturbances for bridge construction, and was the primary catalyst for industrial and residential expansion during this era. In the Eastern Corridor, included construction of:
 - The Little Miami Railroad (1836), located along the Ohio and Little Miami Rivers from Cincinnati north to Springfield, Ohio; influenced development of industrial communities such as Fulton, Pendleton and Linwood;
 - The Cincinnati & Eastern Railroad (1882), extending from Evanston through Hyde Park along Wasson Road eastward to Portsmouth, Ohio; influenced residential and industrial development in the Hyde Park, Evanston and Fairfax areas of the Eastern Corridor;
 - The Mt. Adams Incline (1873), which moved streetcars, and later buses and autos, up the steep Mt. Adams hillside on rails and a moving platform; influenced residential development along steep hillsides above the Ohio River;
 - Streetcar routes (late 1800's) along Montgomery Road, Reading Road, Madison Road, Erie Avenue and Forest Avenue; influenced residential development/expansion of these communities; and
 - A number of local railroad lines, called interurbans, which were built on new or existing rail lines and powered by stream or electricity; included the Cincinnati & Columbia Street Interurban (1863) along Wooster Pike from Pendleton to Columbia; the Cincinnati, Milford & Loveland Traction Interurban (1903) which passed through the Fairfax area; the Cincinnati, Georgetown & Portsmouth Interurban (1878) in Union and Batavia Townships which passed through the communities of Mt. Carmel, Glen Este, Olive Branch and Amelia; and the Black Line Interurban from Cincinnati to Amelia along present day SR 125; influenced residential, industrial, and commercial development in these areas.
- <u>Twentieth century transportation</u> included construction of key present day highways, parkways and interstates including major bridges over the Ohio River and Little Miami River, and air transportation facilities; resulted in the further clearing of woodlands, wetlands, agricultural land, and old residential areas, habitat fragmentation, floodplain encroachment, neighborhood bisection and stream/riparian disturbances, and was the primary catalyst for the industrial, commercial and residential expansion that exists today. In the Eastern Corridor, included construction of:
 - Columbia Parkway (1930's), which became a major east-west thoroughfare paralleling Eastern Avenue, and resulted in a physical barrier between communities along the Ohio River and those along the steep upland slopes overlooking the river;
 - Lunken Airport (1922), built along the broad Ohio River/Little Miami River floodplain; included construction of flood walls along the floodplain, and relocation of a natural Little Miami River bend;
 - The Red Bank Expressway (1960's), which influenced the current mix of light industrial and commercial development along this corridor;
 - The I-71 Interstate (1960's), which influenced residential and commercial expansion in the northeastern suburbs of Hamilton County, including Madiera, Silverton, and Montgomery in the Eastern Corridor; and
 - The I-275 Expressway (1980's), which created an outer loop around Cincinnati and influenced large-scale commercial, light industrial and residential development around interchanges, especially in eastern Hamilton and western Clermont Counties (for example, the US 50 Tech Center and Eastgate Mall locations), transforming the rural character of these areas.



- <u>Industrial/commercial development</u> mostly followed rail corridors established in the nineteenth century along the Ohio and Little Miami Rivers, and twentieth century highway and interstate development (see above); resulted in the clearing of woodlands, wetlands, conversion of agricultural land, aquifer development for public water supplies, riparian clearing, and stream impacts such as the conversion/diversion of natural channels.
- <u>Residential development (suburbanization)</u> mostly followed turnpike and passenger rail transportation corridors in the nineteenth century, and twentieth century highway and interstate development (see above); residential development is the primary land use in the Eastern Corridor today; resulted in the clearing of bottomlands and wooded slopes along the Ohio and Little Miami Rivers and other upland woods, the filling of wetlands, conversion of agricultural land, aquifer development for public and residential water supplies, riparian clearing, and stream impacts such as the conversion/diversion of natural channels.
- <u>Parks/greenspace preservation</u> parks/greenspace comprise about 12 percent of the Eastern Corridor today; preservation of these areas began in the project vicinity in the early 1900's. Key actions relevant to the Eastern Corridor include:
 - Organization of the Greater Park League (today's Cincinnati Board of Park Commissioners), established in 1906 to create and preserve a city park system;
 - Development of George Kessler's "A Park System for the City of Cincinnati" (1907), which outlined the development of greenspace corridors along key transportation routes, including Columbia Parkway, Torrence Parkway and Victory Parkway (located in or immediately adjacent to the Eastern Corridor);
 - The establishment of Ault Park (1911), located in the Eastern Corridor, and one of the oldest parks in Cincinnati;
 - The development of a number of recreational camps in Anderson Township (1920's-1930's) along the Little Miami River near Plainville, Terrace Park, and Mariemont; several of these camps have since been acquired for public greenspace/recreational use by local jurisdictions (for example, Little Miami Golf Center/Bass Island, Avoca Park);
 - Organization of the Hamilton County Park District (1930) to acquire lands in the county for resource conservation/preservation and recreational opportunities;
 - Organization of the Clermont County Park District (1970) to acquire, plan, develop and maintain park property in the county;
 - Acquisition of various public access points and other land along the Little Miami River by ODNR (dates not known), including riparian areas in Greene County (outside the Eastern Corridor), Kroger Woods (in the Eastern Corridor vicinity, but not impacted), Little Miami River Access (ten sites total, including two in the Eastern Corridor vicinity, but not impacted), and Little Miami River Scenic Park (in the Eastern Corridor vicinity, but not impacted);
 - Acquisition of other park and greenspace areas in the Eastern Corridor (including along the Little Miami River) by various jurisdictions and private non-profit groups (City of Cincinnati, Village of Newtown, Anderson Township, Union Township, Village of Mariemont, Little Miami River, Incorporated), as listed in Chapter 4.1.9 and shown on Figure 4.7 of this DEIS (acquisition dates not known).

Present Actions

Present actions, other than construction of the Eastern Corridor multi-modal transportation improvements, relevant to the environmental resources and features affected by this project include: on-going residential, commercial and industrial development, current roadway development and local road maintenance activities, and current greenspace



preservation/recreational development. Description of these current actions in the Eastern Corridor is presented in Chapter 5.6.2 - Current Development Activities.

Reasonably Foreseeable Future Actions

Future actions, other than the construction of the Eastern Corridor multi-modal transportation improvements, relevant to the environmental resources and features affected by this project include: expected future development activities, expected future transportation improvements and expected future greenspace/recreational development.

<u>Expected Future Development</u> - Description of expected future development in the Eastern Corridor is presented in Chapter 5.6.2 - Future Development.

<u>Expected Future Transportation Improvements</u> - Expected future transportation improvements in the Eastern Corridor vicinity other than the proposed project based on review of the Ohio's Transportation Review Advisory Council (TRAC) project list and OKI's 2030 Regional Transportation Plan 2004 Update include the following:

- Hamilton County "The Banks" Intermodal Facility construction of satellite parking alternative in downtown Cincinnati (this project is being coordinated with the Eastern Corridor)
- SR 28 from US 50 to I-275 (Milford) lane extension
- I-275 from US 52 to Clermont County Line lane addition
- Rail transit right-of-way preservation Eastern Corridor Wasson Line and 171, Blue Ash to 12th Street
- Central Area Streetcar located along central riverfront, linking Cincinnati, Covington and Newport

As noted from this list, no major new future transportation facilities are proposed in the area other than the proposed project.

<u>Expected Future Greenspace/Recreational Development</u> - The land use vision work conducted for the project indicates a future increase in greenspace and agricultural land uses within the Eastern Corridor. A specific list of future park/greenspace acquisition projects by the state and local jurisdictions in the areas is not available, however, review of existing versus future land use mapping from the Eastern Corridor land use vision plan indicates greater future greenspace along the Little Miami River, East Fork and Ohio River corridors, in the Ancor area of Newtown, and in the US 50/I-275 Tech Center area in Milford.

5.6.4. Preliminary Evaluation of Cumulative Impacts

This preliminary evaluation focuses on broad cumulative impact issues for key resources that may be affected by the overall multi-modal plan proposed for the Eastern Corridor. More detailed cumulative impact evaluations will be conducted during Tier 2 when, on a project-by-project basis, specific modal alignments are developed and corresponding direct impacts are determined. It is anticipated that any further detailed assessment of cumulative impacts will be consistent with the general conclusions established in this Tier 1 document.



Geographical and Temporal Limits of the Evaluation

The geographical area for the preliminary cumulative impact evaluation is designated as the 165 square mile Tier 1 project study area used at the beginning of the Tier 1 work program, as shown on Figure 1.1. This broad area is determined appropriate for the analysis in that it encompasses the extent of the proposed multi-modal transportation components, it is the primary zone of expected benefit and influence of the project, and it generally corresponds to the land use vision work conducted for the Eastern Corridor (that provided framework for the Tier 1 work).

As described in Chapter 5.6.3, agricultural activities, transportation development, industrial/commercial/residential development, and greenspace preservation have worked together since early settlement days to shape and define the existing urban/suburban landscape that characterizes the Eastern Corridor. As such, the designated temporal limits for this preliminary evaluation extend from the early 1800's, when many of the early transportation corridors were developed, to the Year 2030, which is the design and planning horizon for this project.

Project Mitigation/Greenspace Infrastructure Planning

Tier 2 work for the Eastern Corridor will include development of an environmental mitigation plan in conjunction with more detailed alignment development, preferred alternative selection, permit preparation, agency coordination, and stakeholder and public input efforts. This project mitigation plan will be consistent with state and federal requirements, and will be in part administered at the local level in conjunction with other local preservation, mitigation or enhancement plans, with a combination of local, state and/or federal funding, as applicable.

Key components of the Eastern Corridor environmental mitigation plan under development at this time are described in Chapter 8.3.2. In summary, this plan will: 1) address project impacts to key environmental resources, 2) integrate mitigation with local programs, 3) involve multi-jurisdictional participation, 4) involve use of diverse funding sources, and 5) exhibit environmental stewardship.

With these components in place, all compensatory mitigation requirements outlined by federal and state regulatory statutes will be met to fulfill NEPA, and, to the extent practicable, will be knit together with local greenspace and watershed programs into a larger, corridor-wide green infrastructure plan for the Eastern Corridor that is consistent with and supports the land use priorities identified in the land use vision work. As such, mitigation developed for the project, in conjunction with a locally planned green infrastructure, is expected to be environmentally beneficial to the area, and to offset some of the adverse cumulative impacts associated with the project.

Resource-Specific Impacts

The cumulative impacts analysis for environmental resources expected to be affected by the project requires resource-specific evaluation of the collective impacts that have resulted from relevant past actions in the area, as well as impacts that are expected to result from present



and reasonably foreseeable future actions expected to occur in the area. This resourcespecific evaluation for key resources in the Eastern Corridor is presented below.

<u>Little Miami River</u> – The proposed multi-modal transportation improvements in the Eastern Corridor will result in a new, multi-modal roadway/rail transit crossing of the Little Miami River. Four crossing locations are currently under consideration, located between River Mile 4.6 and 7.0. The proposed structure will be a clear span of the river channel and immediate riparian banks, with no in-stream piers. No direct channel impacts are anticipated, and use of a single crossing structure for both roadway and rail maximizes right-of-way efficiency. In addition, during Tier 2 of the Eastern Corridor project, after a preferred alternative is selected, detailed design will include measures that allow for the unimpeded Little Miami River flood event.

Existing stream conditions at the four potential crossing locations are described in Chapter 4.1.4. In general, better quality conditions, meeting OEPA Exceptional Warmwater Habitat criteria, occur at the furthest upstream location; whereas the potential downstream crossing location is more disturbed and meets OEPA Warmwater Habitat criteria.

Past actions that have affected the Little Miami River in the vicinity of the proposed crossing include riparian clearing for agricultural activities on the east bank and land fill development on the west bank, a transmission line crossing, sewer line easement with a combined sewer overflow outfall along the west bank, and a railroad bridge crossing (currently abandoned). Preservation actions in this area include establishment of the privately-owned Horseshoe Bend Nature Preserve, located primarily along the east bank/wooded riparian area.

The Little Miami River in the overall Eastern Corridor exhibits similar disturbances from past actions, including bridge crossings (four existing roadway bridges and one abandoned rail bridge) and riparian and bottomland clearing for agricultural activities, transportation corridors, and the construction of Lunken Airport and associated commercial areas. Construction of the Lunken Airport (circa 1922) also resulted in rechannelization/relocation of a Little Miami River Bend. Past disturbances, however, have been coupled with preservation efforts along the Little Miami River by both state (ODNR) and local jurisdictions, and non-profit groups; these efforts have included park and bike trail development, and, as in the case of the Horseshoe Bend, a development of a privately-owned nature preserve.

No substantial secondary impacts to the Little Miami River are expected as a result of the project. Controlled access on relocated SR 32 through the Little Miami River corridor, with no new access points between US 50 and Newtown Road, will deter new development in this area, and future land use, identified during the land use vision process, consists of the continuation and expansion of existing agricultural and greenspace uses in this area. Also, future development in the Eastern Corridor is expected to be predominantly infill, minimizing the need for new impervious surfaces and associated indirect water quality impacts from surface runoff that may occur within the Little Miami River drainage. Indirect water quality impacts will also be minimized, by this project and future development activities in the area, by use of specific Best Management Practices outlined in recently developed, or currently under development, state and local Storm Water Management Plans for compliance with NPDES Phase I and Phase II permit requirements for storm water discharge per the Clean Water Act. Secondary impacts to the Little Miami River will also be offset to some degree by mitigation measures proposed for the project, as listed in Table 8.3 of this DEIS and that will be further



developed in Tier 2 during the 404/401 permit process, and the local greenspace infrastructure plan proposed for the area, as described above.

The Little Miami River is a state-administered component of the national wild and scenic rivers system, with recreational classification in the project area. Based on consideration of the information presented above regarding past, present and future actions in the area, as well as other background, regulatory and impact information on the Little Miami River described in various other sections of this DEIS document (Chapters 4.1.4, 5.2, 5.5, 8.2, 8.3 and 8.4), cumulative impacts to the free-flowing nature, water quality and values of this feature are summarized below:

- <u>Free-flowing nature:</u> The proposed project crossing will involve no in-stream piers, and detailed design, which will be conducted during Tier 2, will be developed to allow for the unimpeded 100-year flood event; therefore free-flow of the Little Miami River will not be affected.
- <u>Water quality:</u> Water quality/quantity is not expected to be substantially affected in the Little Miami River, and water quality may possibly be enhanced in the future since: 1) the proposed project will include required compensatory mitigation measures per regulatory statutes, and Best Management Practices to minimize construction and post-construction stormwater runoff, 2) future development in the Eastern Corridor is expected to be predominantly infill, thereby minimizing new impervious surfaces, and will require adherence to specific state and/or local Best Management Practices per current NPDES stormwater permit requirements, and 3) future expansion of greenspace in the Eastern Corridor per the Eastern Corridor land use vision plan, including areas along the river corridor at the project crossing location, will increase vegetated buffers within the Little Miami drainage area.
- Scenic/aesthetic: A new structure over the Little Miami River at a location where a bridge does not currently exist will result in a visual impact. Overall, a project crossing located furthest upstream within the study corridor would be expected to have the most adverse visual impact in that this portion of the river corridor is least disturbed compared to the downstream crossing locations. However, given the already disturbed river corridor in the general vicinity due to riparian clearing, transmission line crossing and adjacent developed land uses, the scenic/aesthetic impact is not expected to be substantial. In the long-term, the scenic value of the river in the project area may increase in that adjacent undesirable land uses in the area, such as the Hafner Land Fill along the west bank, and/or other riparian disturbances may be replaced through measures developed as a result of project mitigation and/or by other local greenspace infrastructure planning efforts in support of the land use vision goals for this area such as riparian restoration, land acquisition or conservation easements.
- Recreational: Canoe navigability in the Little Miami River is not expected to be adversely affected in that no in-stream piers will be constructed, and no existing access points to the river are affected by the project. Overall, the multi-modal transportation plan proposed for the Eastern Corridor is expected to enhance recreational opportunity in the area, including the Little Miami River corridor, by providing a variety of transportation options that are planned in conjunction with each other, and that, by multi-modal hubs and opportunity for pedestrian-friendly development, provide better access to and linkage between existing and future recreational/greenspace areas.
- <u>Geologic</u>: No substantial impacts to any of the existing Little Miami River meanders, in-stream substrate, river banks or significant geological features along the river corridor are expected by the project. Future development in the Eastern Corridor, which is anticipated to be primarily infill in nature as described previously in this environmental document, is expected to result in minimization of encroachment on such natural features, and measures developed as a result of project mitigation



and/or by other local greenspace infrastructure planning in support of the land use vision goals for the area will also provide opportunity for such features to be preserved.

- Fish and Wildlife: Existing aquatic communities associated with the Little Miami River are described in Chapter 4.1.4. Overall, despite the extensive development that has occurred within the drainage area over the years, the Little Miami is known to support a variety of aquatic biota, including, within the Eastern Corridor area, 16 state-listed species, including six fishes, seven mussels, two reptiles and one plant. In addition, the Little Miami River riparian corridor is know to provide foraging and nesting habitat for a variety of mammals, herpetofauna, and has been recognized as a locally valuable bird sanctuary. Overall, no substantial cumulative impacts to fish and wildlife populations associated with the Little Miami River are expected in that, as described above: free-flow will not be impeded, water quality will not be substantially impacted, future infill development is not expected to substantially encroach on remaining natural areas, and future land use in the Eastern Corridor is expected to include more greenspace, providing more habitat.
- Historic: The Little Miami corridor is characterized by a cultural history and archaeological sensitivity, as described in Chapter 4.3.3 of this DEIS. Two National Register Archaeological Districts, the Hahn District and the Perin District, occur along the broad Little Miami floodplain within the Eastern Corridor. Past disturbances and excavations, and current agricultural and recreational uses have impacted these areas to some degree, and their historic value will be further evaluated during Tier 2. The project will result in direct encroachment on one or both of these sites (see Tables 5.12 and 5.13), and all appropriate coordination and mitigation for NEPA compliance will be conducted during Tier 2 after a preferred alternative is selected. Future impacts to these resources, however, are not expected to be substantial in that controlled access along relocated SR 32 through this area is expected to deter secondary development and support continued existing agricultural/greenspace uses through this area (no new encroachment on these archaeological areas other than the project). Project mitigation for NEPA compliance and/or other local greenspace infrastructure planning efforts in support of the land use vision goals for this area, which may include a historic preservation component, may also provide opportunity for preservation of these archaeological resources.

<u>Other Surface Streams</u> – Direct stream impacts will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed. Based on preliminary information presented in Tables 5.12 and 5.13, the proposed multi-modal transportation plan for the Eastern Corridor as a whole is expected to result in an estimated USGS stream impact range of 7,430 to 22,775 linear feet (Note: headwater stream impacts were not evaluated in Tier 1, but will be further assessed on a project-by-project basis in Tier 2 when more specific alignments are developed).

Tier 1 ecological studies conducted for the project, described in Chapter 4.1.4, indicate that most features to be impacted by the project are modified or disturbed due to development activities that have occurred over the years (such as commercial and industrial development, roadway and rail development, urban and suburban development, and the placement of utilities), although the amount of channel disturbed from past actions is undetermined. Roughly 60 percent of the streams surveyed exhibit OEPA Limited Resource Water or Modified Warmwater Habitat conditions within the Eastern Corridor. The better quality features in the area, meeting OEPA Warmwater Habitat criteria, include East Fork and portions of Dry Run, Duck Creek and Hall Run.

Future development activities in the Eastern Corridor will likely result in additional stream impacts, however, further stream encroachment is not expected to be substantial since most development will occur in previously disturbed sites (infill). In addition, water quality of these



features is not expected to be substantially impacted over current conditions in that: 1) the proposed project will include required compensatory mitigation measures per regulatory statutes, and Best Management Practices to minimize construction and post-construction stormwater runoff, 2) future development in the Eastern Corridor will also require adherence to specific state and/or local Best Management Practices per current NPDES stormwater permit requirements, and 3) future expansion of greenspace in the Eastern Corridor, per the land use vision plan, provides opportunity for the creation of vegetated buffers and riparian corridor preservation within the drainage areas of these streams.

Therefore, although past actions in the Eastern Corridor have resulted a loss of natural stream channel and general lowering of water quality since early settlement days, the proposed project and future actions are not expected to substantially contribute to additional loss (will not continue the adverse trend), and may provide opportunity for improved conditions in the area over time - a possible cumulative benefit.

<u>Wetlands</u> - Direct wetland impacts will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed. Based on preliminary information presented in Tables 5.12 and 5.13, the proposed multi-modal transportation plan for the Eastern Corridor as a whole is expected to result in an estimated 2 to 12 acres of wetland impact, consisting of primarily low and moderate quality features.

As previously described, early agricultural development in the area resulted in initial clearing and draining of land, resulting in an undetermined loss of wetland habitat over time, and loss of beneficial wetland functions such as flood and erosion control, runoff moderation, groundwater recharge and wildlife habitat. Existing wetlands in the Eastern Corridor are mostly small, widely scattered features associated with disturbances, such as gravel pit and drainage swale wetlands; the few remaining natural features are associated with the Little Miami River and Ohio River floodplains, and flat, poorly drained woodlands in Clermont County.

Future development in the Eastern Corridor may result in additional wetland encroachment, however, impacts are not expected to be substantial in that most features are widely scattered and, therefore, easier to avoid during the planning stages of a project. Project mitigation and/or other local greenspace infrastructure planning efforts in support of the land use vision goals for the Eastern Corridor may also provide opportunity for creation, enhancement or preservation of wetlands. Therefore, although past actions in the Eastern Corridor have resulted a loss of natural wetlands and associated functions since early settlement days, the proposed project and future actions are not expected to substantially contribute to additional loss (will not continue the adverse trend), and may provide opportunity for an increase in the amount of wetland acreage in the area over time - a possible cumulative benefit.

<u>Floodplains</u> – Floodplain impact will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed. Based on preliminary information presented in Tables 5.12 and 5.13, the proposed multi-modal transportation plan for the Eastern Corridor as a whole is expected to result in an estimated 220 to 400 acres of floodplain encroachment, primarily along the Little Miami River and portions of East Fork, Duck Creek, McCullough Run, Dry Run and the Ohio River. For Tier 2 projects involving floodplain encroachment, coordination with the appropriate local floodplain



coordinator will be conducted during detailed design to assure that proposed structures meet local floodplain requirements for design and minimization/mitigation.

Past actions affecting floodplains in the Eastern Corridor include agricultural activities, residential and commercial development, and transportation development. Past flood control efforts have included construction of flood walls along the Ohio River and Little Miami River, and rechannelization of a potion of the Little Miami in the Lunken Airport vicinity. Current land use along floodplains is predominantly parkland, agricultural, commercial and residential.

At this time, no future actions are foreseeable that would result in notable floodplain impacts. Controlled access along relocated SR 32, where the project crosses the broadest portion of the Little Miami River floodplain, will deter future development in this area. Based on the Eastern Corridor land use vision plan, future land use in floodplains, consisting of primarily parkland and agriculture, is expected to be continued and slightly expanded in some areas.

<u>Aquifer</u> – Impacts to the Buried Valley Aquifer System Sole Source Aquifer will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed. Aquifer limits in the Eastern Corridor generally correspond to floodplain areas, and current land use along the aquifer are similar to those described above for floodplains. Based on preliminary information presented in Tables 5.12 and 5.13, the proposed multi-modal transportation plan for the Eastern Corridor as a whole is expected to result in an estimated 415 to 475 acres of aquifer encroachment.

Past actions affecting the sole source aquifer are not known, although it is reasonable to assume that development activities in the area over time have resulted in some level of increase, or periodic increases, in turbidity and dissolved solids and/or the seepage of fuels, fertilizers, herbicides/pesticides or other pollutant materials into the groundwater, and possible impact on aquifer recharge. Most communities in the Eastern Corridor use the sole source aquifer as either their sole or partial water supply, and groundwater quantity may have been periodically impacted as uses fluctuate.

At this time, no future actions are foreseeable that would result in notable aquifer impacts. Controlled access along relocated SR 32, where the project crosses the broadest portion of the aquifer, will deter future development in this area, and future development activities elsewhere in the Eastern Corridor are expected to be predominantly infill, thereby minimizing the need for additional impervious surface (minimal recharge impacts). Project mitigation and/or local greenspace/watershed protection planning efforts, such as implementation of local zoning requirements for aquifer protection, will also provide opportunity for aquifer protection in the area.

<u>Terrestrial Habitats</u> - Tier 1 work, as presented in this DEIS, focused on preliminary evaluation of impacts to larger woodlands in the Eastern Corridor, including high quality areas identified from secondary sources or large continuous woodland tracts based on limited walk-over field survey. Woodland impacts will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed.

Original vegetation in the project area, described in Chapter 4.1.6, was over 90 percent woodland, consisting of mixed mesophytic, beech and bottomland hardwood forest types.



Past development activities have substantially reduced the amount of woodland cover over the years, and associated beneficial values such as wildlife cover and habitat, soil stability, erosion control, runoff moderation, air quality and aesthetic benefits and noise reduction. As noted previously, roughly 76 percent of the Eastern Corridor is currently developed. Greenspace and agricultural land, which contain some woodland components, each comprise about 12 percent of the Eastern Corridor. Developed areas also contain some woodland components, especially the older residential urban areas of the Eastern Corridor such as Mariemont, residential areas developed along steep hillsides such as Columbia-Tusculum and new subdivisions in Anderson Township, and along old transportation corridors such as the Oasis Line along the Ohio River. Information obtained from the National Resources Inventory (www.agecon.ag.ohio-state.edu/programs/exurbs/pdf/LUfigures) indicate an approximately 20 percent reduction in forest land in Hamilton County as a whole between 1982 and 1997, and essentially no change in forest cover in Clermont County during the same time period. Specific trends within the Eastern Corridor study area are not known.

Future development activities in the Eastern Corridor will likely result in additional woodland impacts, however, further encroachment is not expected to be substantial since most development will occur in previously disturbed sites (infill), and future land use in the area indicates an overall increase in greenspace over time - some of which will likely include woodland area. In addition, project mitigation and/or other local greenspace infrastructure planning efforts in support of the land use vision goals for the Eastern Corridor may provide opportunity for restoration and/or preservation of woodlands.

Therefore, although past actions in the Eastern Corridor have resulted a loss of original woodlands and associated wildlife and other benefits since early settlement days, the proposed project and future actions are not expected to substantially contribute to additional loss, and may provide opportunity for an increase in the amount of woodland in the Eastern Corridor area over time - a possible cumulative benefit.

<u>Threatened and Endangered Species</u> – State and federal-listed species known from the project area are described in Chapter 4.1.7. Overall, the Eastern Corridor may contain potential habitat for three federal-listed species: Indiana bat, running buffalo clover and bald eagle, and sixteen state-listed species, most of which are fish and mussels associated with the Little Miami and Ohio Rivers. Potential habitat for Indiana bat includes relatively undisturbed upland and riparian woodlands, and buffalo clover primarily occurs in open woodlands and woodlots with a history of periodic disturbance. No bald eagles or nest sites are known from the project area.

Development activities in the Eastern Corridor resulting in woodland and stream impacts have either removed or degraded some amount of preferred habitat for these listed species, and it is not known how this has affected species distribution or vitality within the area. However, as noted previously, areas such as the Little Miami River, despite extensive development, still supports diverse aquatic and terrestrial biota. No substantial impacts to state-listed fish and mussels occurring in the Little Miami River are expected since, as described previously, freeflow will not be impeded and water quality will not be substantially impacted.

Future development activities in the Eastern Corridor will likely result in additional impacts to potential habitat for these species, however, further encroachment is not expected to be



substantial since most development will occur in previously disturbed sites (infill), and future land use in the area indicates an overall increase in greenspace over time - some of which will likely include riparian corridors and woodlands. In addition, project mitigation and/or other local greenspace infrastructure planning efforts in support of the land use vision goals for the Eastern Corridor may provide opportunity for restoration and/or preservation of preferred habitat for some listed species.

<u>Cultural Resources</u> – Cultural resources occurring in the Eastern Corridor are described in Chapter 4.3, and include both historic architecture and archaeological features. Impacts to these resources will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed. Based on preliminary information presented in Tables 5.12 and 5.13, the proposed multi-modal transportation plan for the Eastern Corridor as a whole may affect between 1 to 3 National Register Individual Properties, 1 to 4 National Register Districts and between 29 to 35 other cultural features whose significance/National Register eligibility will be determined in Tier 2.

Past disturbances, excavations, and other types of development have likely disturbed cultural resources, especially archaeological resources, in the area over time. As noted above, the project will result in direct encroachment on some resources, and all appropriate coordination and mitigation for NEPA compliance will be conducted during Tier 2 after a preferred alternative is selected. Local greenspace infrastructure planning efforts in support of land use vision goals, which may include a historic preservation component linked with greenspace preservation, may also provide opportunity for protection and enhancement of cultural resources in the area.

<u>Air Quality and Noise/Vibration</u> – The project is located in the Cincinnati Air Quality Control Region under local metropolitan planning organization jurisdiction, and is in OKI's current Transportation Improvement Plan (TIP). The TIP is consistent with the currently adopted 2030 Regional Transportation Plan, which is in conformity regarding air quality.

Tier 1 noise and vibration studies involved evaluation of potential noise and vibration receptors (indicating noise sensitivity only, not impact), and preliminary information for the Eastern Corridor as a whole is presented in Tables 5.12 and 5.13. Impacts related to highway and transit noise, and transit vibration will be evaluated in detail during Tier 2 when specific alignments for proposed Eastern Corridor transportation improvements are developed. Detailed noise and vibration analyses will be conducted in accordance with appropriate FHWA, FTA and ODOT procedures, and abatement measures, if required, will be developed during detailed design.

It is reasonable to assume that urbanization and other development within the Eastern Corridor over time has adversely affected air quality and has increased noise. However, additional impacts from the project and future development are not expected to be substantial in that: 1) proposed transportation improvements primarily follow existing transportation corridors, 2) future development in the Eastern Corridor will be primarily infill - in areas where noise already occurs, and 3) the proposed project and future development in the area will require compliance with state and federal statutes regarding air quality and noise. There may be some areas, however, such the proposed Little Miami River crossing area and adjacent



floodplain, where relocated SR 32 will result in some level of new noise impact and localized air quality impacts.

<u>Displacements and Property Impacts</u> – Residential and commercial displacements and other property impacts will be evaluated in detail during Tier 2 on a project-by-project basis when specific alignments for proposed Eastern Corridor transportation improvements are developed and preferred alternative selection takes place. Based on preliminary information presented in Tables 5.12 and 5.13, the proposed multi-modal transportation plan for the Eastern Corridor as a whole is expected to result in an estimated range of 115 to 480 single-family displacements, 3 to 20 multi-family displacements, and 80 to 142 commercial/industrial displacements.

Residential and commercial development has progressively increased in the Eastern Corridor over time, such that roughly 42 percent of the area is currently in residential use and 10 percent is in commercial/industrial use (see Chapter 5.6.2). Future land use for the Eastern Corridor consists of an increase in residential, commercial, office, industrial and mixed-use development, which is expected to be predominantly infill by nature, with emphasis on conversion of vacant land. Displacement impacts by the project or future actions are not expected to be substantial in that ample areas to move are expected to be available. In addition, acquisition and relocation for all parties displaced will be conducted in accordance with all applicable state and federal laws.

Discussion of Cumulative Benefits

As part of the cumulative analysis, consideration is given to the comparative benefits of past, present and future actions, as well as the proposed project, when formulating conclusions regarding the overall significance of expected impacts to environmental resources in the area.

As discussed in Chapter 5.6.3, the past, present and future actions that have affected, and will continue to affect, environmental resources and features in the Eastern Corridor include agricultural activities, transportation development, residential and commercial/industrial development, and greenspace development. While some of these actions have resulted in loss or modification of the area's environmental resources (and are expected to continue to do so in the future, although not substantially), these actions have also resulted in notable benefits within the Eastern Corridor. These benefits primarily include economic sustenance and quality-of-life improvements. For example, from an economic standpoint, construction of transportation corridors in the Eastern Corridor - from the early railroads to the current highways and interstates - has improved community and regional connectivity. This has contributed to the viability of local economic ventures - from early, predominantly agricultural operations, to commercial and industrial operations. These ventures not only supported the local economy and improved local quality-of-life, but also provided needed consumer goods that contributed to other regional economies, and, ultimately, the quality-of-life in those areas.

The multi-modal transportation improvements proposed for the Eastern Corridor will further improve connectivity in the area by providing better connections to the interstate system, and better links from the areas economic centers in Cincinnati and Hamilton County to developing residential areas in western Hamilton County and Clermont County. Providing greater mode choices, particularly transit options, also supports workforce development for non-driving individuals by better connecting them to places of employment. Proposed transportation



improvements will also better link economic centers, both locally and regionally, for more efficient movement of goods and services within and through the area. All of these actions will benefit the local economy and local quality-of-life and are consistent with planned land use outcomes.

As described previously, a unique aspect of the this project has been the development and implementation of a land use vision plan, such that land use priorities were identified and subsequently integrated into the transportation planning process to identify appropriate fit of proposed transportation solutions with desired land use. Overall, the Eastern Corridor land use vision plan, supported by proposed multi-modal transportation improvements, is configured to stimulate infill and expand greenspace within the Eastern Corridor. Such a strategy is beneficial to both the local economy and the environment in that it promotes redevelopment, reinvestment, as well as protection of existing natural resources. Project mitigation and local greenspace infrastructure planning efforts in support of land use vision goals that will occur in conjunction with the project, are also expected to provide cumulative environmental benefits within the Eastern Corridor.

Based on the above, cumulative benefits of the project in conjunction with past, present and other future actions in the area, are an overall improvement in public heath, including: 1) improved safety, characterized by fewer accidents due to better roadway conditions and reduced congestion, as well as improved conditions for police, fire and emergency personnel, 2) economic vitality from linking people to jobs and employment centers, 3) preservation of natural and cultural resources due to infill development, and 4) improved recreational opportunities due to better connection to and expansion of greenspace and parks.

By comparison, present conditions, without the multi-modal improvements proposed for the Eastern Corridor, are expected to support inefficient, "leapfrog" outward growth (instead of infill development) resulting in part from a poor transportation system that does not respond to capacity, efficiency, access or modal option needs of businesses, communities, the regional economy or the environment.

Conclusions

Based on the information presented in this preliminary cumulative impact evaluation, it is concluded that although past and present actions in the Eastern Corridor have resulted in some loss or modification to the area's environmental resources, these actions have also resulted in notable benefits within the Eastern Corridor.

Furthermore, the benefits of the project, combined with other past, present and expected future actions, are considerable. These benefits have played, and will continue to play, an important role in the local economy and overall quality-of-life in the project area.

Overall, the Eastern Corridor project is not expected to critically compound conditions that have resulted from other past and present actions, or that may result from expected future actions, when the specific benefits of the project are weighed against the project's expected direct and indirect impacts (costs).



5.7. CONSEQUENCES OF THE NO BUILD ALTERNATIVE

Under a No Build Alternative, no major transportation capacity investments would be made now or in the 30-year planning horizon, except for projects that are already approved and have specific funds committed. Coordination with OKI in 2002 identified over seventy TIP/STIP committed projects in the 13-county region. Three of these seventy TIP/STIP committed projects occurred within the Eastern Corridor, including: 1) Interstate 275 widening from State Route 32 to Five Mile Road, 2) a new interchange for Olive Branch-Stonelick Road at State Route 32, and 3) widening of State Route 125 from SR 32 to Corbly Road. The latter two projects have recently been completed and are open to traffic. About two-thirds of the I275 widening project is substantially complete. Recently (2004 update to TIP/STIP), a few other minor projects were added to the committed project framework for the No Build condition within the Eastern Corridor. These include minor resurfacing, bridge rehabilitation, signal coordination and landscaping projects.

The No Build Alternative, as defined above, involves some disruption of existing structures and land and some amount of direct environmental impacts for construction of committed projects. Secondary impacts associated with the construction of committed projects included in the No Build (most have which have been recently completed, as noted above) are addressed in Chapter 5.6.2.

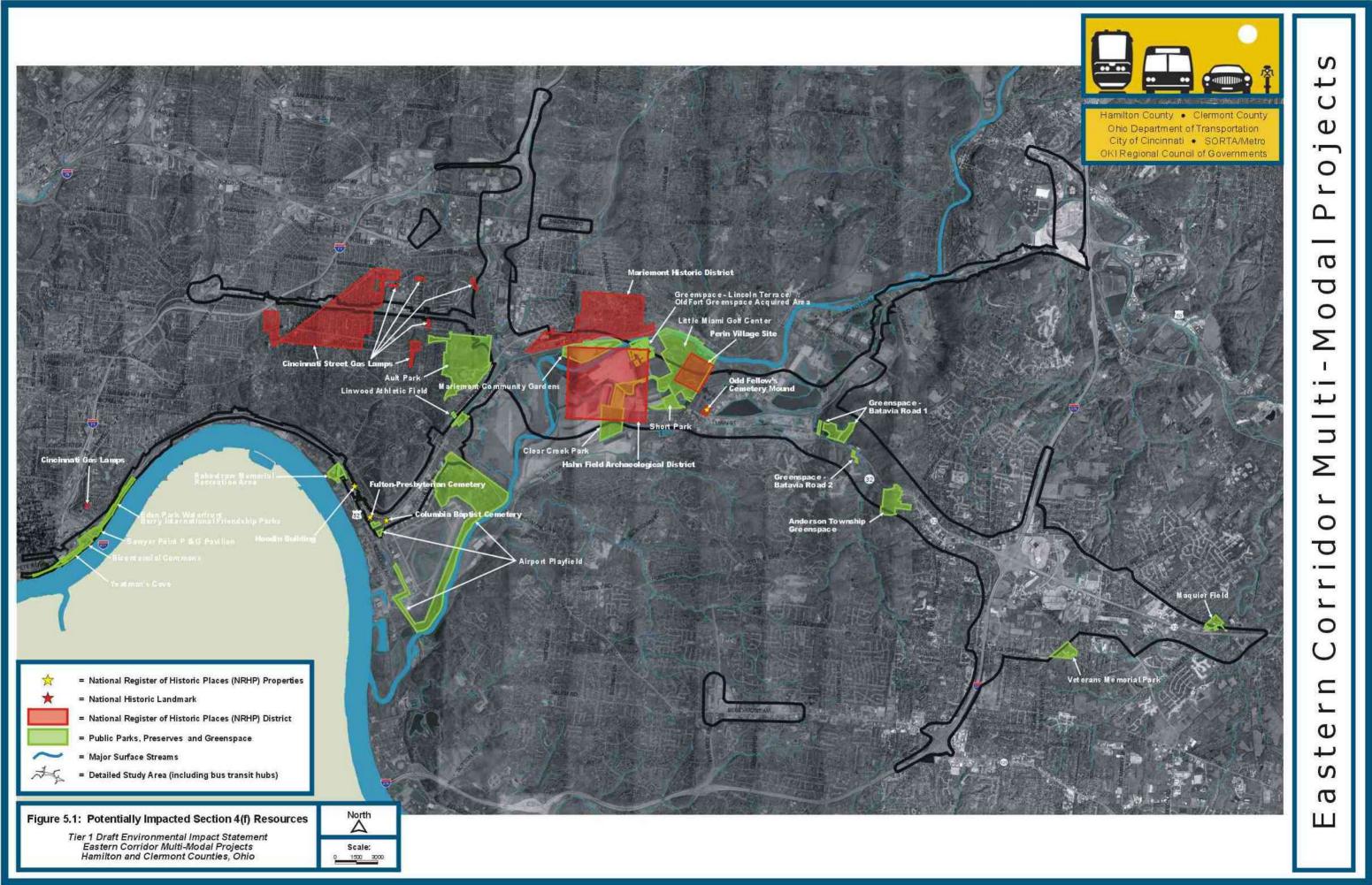
The Eastern Corridor Major Investment Study (April 2000) concluded that a No Build scenario would not meet the transportation needs of the project area. Key expected consequences of the No Build Alternative include the following:

- Current conditions and trends would continue in the corridor, with increasingly inefficient transportation linkages and related losses of population, employment and economic development opportunities.
- New capacity and connectivity improvements would not be built, while travel demand would continue to grow.
- Public expectations would not be met.
- Congestion, delays, travel times, and safety problems would be expected to increase without relief.
- Relative market areas for employment areas, communities and destinations would be expected to shrink due to increasing travel inefficiencies.
- No new non-car options for travel would be established (such as rail transit).
- Development would most likely be less consistent with land use plans, and the beneficial transportation-land use relationship established by various community, county and regional planning activities in the corridor would be diminished or made ineffective (and these risks and related potential adverse consequences are exacerbated under the State of Ohio's constitutional "home rule" authority granted to local governments which has no requirement or obligation for centralized or coordinated planning)
- Commerce and movement of goods and services would be expected to suffer, and would decrease the economic competitiveness of the Cincinnati metropolitan area and outlying eastern suburbs.
- Future development would be expected to occur as inefficient, "leapfrog" outward growth (instead of infill development) resulting in part from a poor transportation system that does not respond to capacity, efficiency, access or modal option needs of businesses, communities, the regional economy or the environment.



• Beneficial coordination among different jurisdictions, established and forwarded by the transportation and land use planning effort, would likely become less active and less effective on both a local and regional scale.

Projected travel times, delays and miles traveled in the Eastern Corridor and overall OKI region for a No Build versus multi-modal build alternative for the project are further described in Chapter 7.1 of this DEIS.





Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

CHAPTER 6 PUBLIC INVOLVEMENT AND COORDINATION



CHAPTER 6 PUBLIC INVOLVEMENT AND COORDINATION

This chapter of the DEIS outlines the methods, strategies and courses of action that have been used to include and receive feedback from communities and individuals potentially affected by the project. Included is a description of the public involvement activities conducted from the initiation of the Eastern Corridor Major Investment Study, through the land use vision plan process to the current Eastern Corridor Tier 1 work phase. This public involvement has and continues to provide important input for guiding and directing critical decisions made to resolve current and future transportation and land use issues in the Eastern Corridor.

6.1. PUBLIC INVOLVEMENT

6.1.1. NEPA Requirements

The National Environmental Policy Act (NEPA) of 1969 established public involvement as one of its fundamental principles in order to ensure the public ample opportunity to participate extensively throughout a project's entire decision-making process. Public input is a regulated process that requires state agencies to consider input of specific agencies and stakeholders before a project can be approved for federal funding and construction. The level of public involvement effort through NEPA is dependent on the purpose, scope and complexity of the project, the anticipated public reaction and the magnitude of the environmental impacts.

6.1.2. Public Involvement Strategies for the Eastern Corridor MIS

The main purpose of the Eastern Corridor MIS was to identify long-term transportation improvements for the Eastern Corridor that incorporated the four basic goals identified by the 58-member MIS Task Force. The 58-member Task Force included a cross-section of individuals and stakeholders affected by, and who could devise strategies to solve transportation issues facing the Eastern Corridor. The Task Force was charged with finding the best balance of efficiency, effectiveness, cost, social and economic benefit, and compatibility with environmental and quality of life goals when solving the transportation issues within the Eastern Corridor. The Task Force developed the MIS Recommended Plan for improving transportation in the Eastern Corridor that included a multi-modal set of transportation and mobility improvement initiatives. An MIS Public Hearing was held on March 25, 1999 to obtain comments on the MIS Recommended Plan. Results of the MIS Public Hearing are reported in the OKI Eastern Corridor Major Investment Study Report (OKI, April 2000; on file at the project office).

6.1.3. Public Involvement Strategies for the Eastern Corridor LUVP

It was identified during the MIS process that consideration of existing and future land use was a critical issue to the residents and communities of the Eastern Corridor. It was determined that one of the key needs of the Eastern Corridor study was the effective implementation of a transportation improvement plan that was developed around and responded to a desired land use scenario - as opposed to a scenario where land use plans conformed to or evolved out of



a transportation improvement project. This land use philosophy was identified as one of the four main goals of the project, and has been an integral part of the overall Eastern Corridor development process.

<u>Vision Group</u>: A core group of more than 60 people, representing a variety of interests and geographical areas in the Eastern Corridor was identified to act as a vision group for producing the Eastern Corridor Land Use Vision Plan (ECLUVP; Meisner and Associates, May 2002; on file at the project office). The role of this 60-person land use vision group was to guide and oversee the land use vision process and make land use recommendations.

<u>Focus Area Groups:</u> Members of the land use vision group were assigned to participate in one or more of the six focus area groups, which included the Wasson, Red Bank, Wooster, Ohio 32, Eastern Avenue/Lunken and River Plains focus areas. Focus area participation was further enhanced with local community members, employers, school district representatives and other individuals having an interest in the region. These focus area groups conducted indepth analyses of the strengths, opportunities, weaknesses and constraints within their respective focus areas; identified zones of potential change; made recommendations about how improvements could be made; and identified features that needed to be preserved or enhanced. Input and recommendations from the focus area meetings, along with other land use, economic and community information obtained through the course of the study, was then combined and reconciled to identify an overall consensus land use vision plan for the Eastern Corridor. Following this process and additional information gathering, citizen participants were able to make recommendations regarding the future of land use in the Eastern Corridor.

<u>Meetings:</u> Numerous meetings and open houses were held throughout the land use vision study area to ensure that stakeholders and persons from all affected communities and local jurisdictions were able to have access to project information while having the advantage of directing questions to members of the project team. This included vision group and focus group meetings. Additionally, several meetings were convened for publics, participants and jurisdiction representatives who were previously unable to attend meetings.

<u>Public Opinion Survey:</u> A Public Opinion Land Use Survey was conducted as part of the Eastern Corridor land use vision plan work program. This telephone survey of 1,022 persons living within the Eastern Corridor was conducted by the University of Cincinnati Institute for Policy Research. It included questions on community/neighborhood satisfaction, importance of economic and environmental costs and benefits regarding land use decisions, community/neighborhood development issues, transportation and access options, favorability to suggested community/neighborhood changes, and important land use issues by community. Results of the survey indicated broad-based support for the recommendations of the Eastern Corridor Land Use Vision Plan (ECLUVP; Meisner and Associates, May 2002).

<u>Adoption of the Land Use Vision Plan:</u> The ECLUVP was endorsed by the land use vision group on April 4, 2002 and the final report was completed in May 2002 (Meisner and Associates). Following its completion, the ECLUVP was adopted by the Hamilton County Regional Planning Commission and is in the process of being adopted by each of the political jurisdictions in the area.



Overall, the ECLUVP incorporates economic development, green space preservation and quality of life issues identified from existing community plans and new information gathered from public input identified by the focus area groups. Specific information concerning public involvement activities for the ECLUVP process are detailed in the two volume land use vision plan document on file at the project office.

6.1.4. Public Involvement Strategies for Tier 1 Eastern Corridor Work

Results, recommendations and output of the Eastern Corridor land use vision plan provided baseline information for consideration during transportation alternatives development and impact evaluation work conducted for the Eastern Corridor Tier 1 work. Public involvement in this phase of the project needed to communicate and effectively translate the complex processes of transportation planning into a language that individuals could easily respond to and understand. A public involvement plan was developed for the Eastern Corridor Tier 1 work phase that incorporated ten goals for effectively guiding project decision-makers and ensuring adequate levels of public involvement; they are as follows:

- Provide a high level of factual awareness about the Eastern Corridor Tier 1 process
- Develop an intimate dialogue with key stakeholders to reach true understanding of their needs
- · Generate mass participation from the public and stakeholders
- Encourage various entities of the public to become partners of the project
- Develop a partnership with the media to ensure accurate reporting of information
- Identify Environmental Justice communities in the study area and specifically solicit their input
- Be responsive to public questions and concerns
- Share public feedback with the study team
- Identify new opportunities and areas of concern as they arise
- Obtain documentation for the public involvement plan consistent with National Environmental Policy Act (NEPA) requirements

Public involvement integrated into the Eastern Corridor MIS, the land use vision plan and the Tier 1 work phase assure dissemination of accurate information to all persons potentially affected by the project in accordance with Title VI of the Civil Rights Act of 1964, which states:

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

An Environmental Justice Action Plan was specifically developed for the Tier 1 work phase of the project (see Appendix B-2), and general environmental justice public involvement strategies included in this plan are described below.

Components of the Tier 1 Public Involvement Plan

In order to facilitate accurate and thorough dissemination of information to individuals, communities and environmental justice groups in the Eastern Corridor, the public involvement plan was divided into tasks with specific deliverable items as described below. Depending on the quantity of information, deliverable items for each can either be found in Appendix B-1 of this DEIS document or are on file at the Eastern Corridor project office.



Public Meetings and Hearing

Public meetings were held to show citizens the progress that had occurred and to receive community comments relative to the study. Three series of meetings were held in May-June 2002, May 2003 and in January-February 2004. Meeting summaries can be found in Appendix B-1 and are on file at the project office. For each of the three series of meetings, several were held in identified environmental justice areas. Facilities were handicap accessible and on bus routes to enable participation. A formal Public Hearing will be held for the project upon approval and publication of the Tier 1 Draft Environmental Impact Statement (anticipated to be held in the fall of 2004).



Public Feedback Channels

Several public feedback channels are being used to provide the public contact with the study team. These channels include web site feedback, public information/mail feedback, and a telephone hotline and voice mail. Quarterly online feedback database reports have been generated since December 2001 and are on file at the project office. A telephone hotline and voice mail service have been active since February 2001, and a public information center has been open to the public since November 2001.



<u>Public Information Center</u> The Eastern Corridor project information center,

referred to as the Eastern Corridor Project Information center, opened in November 2001 and has served as a central location for individuals to obtain project information. The center is open to the public Monday through Thursday and contains project and projectrelated materials for public viewing. The office is located in an environmental justice area, and the facility is handicap accessible and on a bus route to enable participation.

Community Workshops

On-going workshops have been conducted in a number of communities throughout the Eastern Corridor since January 2002 (see Appendix B-1 for a listing of workshop presentation locations and dates). These workshops have provided opportunities for local individuals to receive project information and voice opinions. Several workshops have been held in environmental justice areas, focusing on specific issues and needs. Facilities where workshops were held were handicap accessible and on a bus route to enable participation.

Speaker's Bureau

A speaker's bureau was developed to educate residents, environmental justice groups, land and business owners, commuters and others in the Eastern Corridor area. Speakers make



presentations to assigned groups, facilitate discussions and lead question and answer sessions (see Appendix B-1 for a listing of presentation locations and dates).

Traditional Public Involvement Information Materials

The following materials have been used for this project and are on file at the project office:

- *Flyers* This resource was used as a community outreach tool to publicize workshops and encourage attendance. Project flyers were distributed at various community outlets including churches, community centers and schools.
- Newsletters This resource summarized key project information, announced public meetings and open houses, and provided responses to public questions and concerns. Volume 1, Issues 1-3 and Volume 2, Issue 1 have been distributed and posted on the project web site.
- Documentary Video This resource provided a visual illustration of the study's purpose and goals, outlining the reasoning behind the study and the future transportation solutions. The video began airing during Spring 2002 on local cable access stations and was posted on the project web site and shown during public workshops.
- Fact Sheets This resource summarized information shown on the website into one-page, easily accessible means of communication for the general public. Fact sheets covered a variety of topics including summary of the Eastern Corridor Tier 1 work program (see right), land use, project funding, the

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Little Miami River crossing, and rail transit options being considered for the Eastern Corridor. Fact sheets were included in media kits, mailings, and handed out at public meetings.

The above materials have been available at key locations for members of environmental justice target groups to obtain information on the project. Traditional marketing tactics (such as billboard and newspaper advertisements) have also been utilized in environmental justice communities to ensure balanced outreach to all areas of the Eastern Corridor.

Media Relations

Media relations included the distribution of factual, non-biased information on the Eastern Corridor Tier 1 study activities. A media database and kit were completed, as well as media tours. Media briefings were completed during the May 2003 workshops, and on-going media relations occur during significant project milestones. Major efforts were targeted to metropolitan dailies and broadcast outlets for maximum outreach. Publications serving environmental justice target groups were also identified and pursued.

Marketing Communications Materials

A paid marketing campaign was done to direct the public to the Eastern Corridor web site for factual information on activities and upcoming events, and to provide feedback. Newspaper and billboard advertisements have run prior to public meetings (information is on file at the project office).



Corporate Citizenship

The purpose of this component was to cultivate relationships with key corporations within the Eastern Corridor as well as companies that serve and communicate to people who live in the Eastern Corridor. A list of key companies and businesses was completed in January 2001 (see Appendix B-1 for a listing of key corporate contacts). Contacts were added to a stakeholder database so that they would receive e-mail updates during project milestones and offers for community meetings with stakeholder organizations.

Project Identity Materials

Distinguishable materials were developed (logo, letterhead, business cards, and mailing labels) that were easily associated with the Eastern Corridor Tier 1 work.

Stakeholders / Special Interest

Efforts were made to identify key stakeholders and groups with special interest in the project to provide opportunity for quality input. Email updates were distributed to these groups during significant project milestones including public meeting updates, announcement of availability of the newsletter on the project web site and offers for community meetings with stakeholder organizations. The database of stakeholders and interest groups included: environmental justice organizations, businesses, school districts, community councils, political jurisdictions, environmental protection organizations, public service providers and government and administration entities (see Appendices B-1 and B-2 for a listing of stakeholders, interest groups, and environmental justice community organizations targeted to receive mail and email updates concerning recent progress with the Eastern Corridor project).

Traffic Reporter / Agency Relations

This component allows for the flow of information from traffic reporters and agencies to the project team. It enables traffic reporters and agencies to provide a common sense check of the proposed transportation recommendations. Initial contacts with traffic agencies were made in February 2002.

Eastern Corridor Web Site

A project web site was developed to serve as a comprehensive and interactive resource center for people interested in learning about the Eastern Corridor project, public involvement meetings, recent news, studies, maps and other project related materials. A major function of the web site is to solicit feedback from the public (a survey form is provided on the site for this purpose). The web site is constantly being updated as work progresses. Visuals and maps from each of the public workshop series are available on the site.



Eastern Corridor Online Library / Archive

The online library is a branch of the Eastern Corridor web site for storing project documents and maps accessible by the public. An available search function allows the end user to locate specific documents and maps by typing in a key word or phrase.



Eastern Corridor Web Site Trend Analysis

Web trend reports are used to analyze and determine trends of navigation and use-levels of the Eastern Corridor web site. The reports are delivered monthly with an executive summary, and information is on file at the project office.

Provide Project Information to National Venues

The purpose of this component is to generate national trade interest in the Eastern Corridor Tier 1 work. Award and recognition opportunities have resulted. A trade publication list has been developed and is on file at the project office.

Participate in Advisory Committee Meetings

Advisory Committee Meetings have been held as a means of maintaining continuity and involvement from the MIS phase of the Eastern Corridor Task Force (now named the Eastern Corridor Advisory Committee), keep project decision-makers appraised of project status, developments or any special community needs and to ensure accurate dispersion of information and understanding among committee members. The Advisory Committee has met 1-3 times per year since the beginning of the Tier 1 work phase. The committee is made up of representatives from the project partners, federal, state and local agencies, community organizations, area businesses, and citizens. Materials and presentations developed for the Advisory Committee Meetings are available at the project office.

Implementation Group / Tier 1 Review Committee

A Tier 1 Review Committee, formerly known as the Implementation Group, has met on a monthly basis throughout the Tier 1 work phase to review progress and provide feedback on the project. This committee is comprised of the six project partners, led by the Hamilton County Transportation Improvement District. The meetings are open to all interested parties and the public.

Future Planned Public Involvement Activities

Public Involvement activities are part of an ongoing process that will continue through the end of Tier 1 and into Tier 2 work for the project. A Public Hearing is a formal meeting that will be held prior to the Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) in order to obtain comments for public record. This hearing is anticipated to be held in the fall of 2004. The community presentations and workshops will continue to be held throughout the study process to continually better understand the needs and concerns of area communities and how they fit into the Eastern Corridor.

6.1.5. Section 106 Public Involvement

Section 106 of the Historic Preservation Act requires federal agencies to take into account the effect of actions on historic properties, including the identification of consulting parties entitled to participate in the review process because of their potential interest in historic properties that may be affected by the project. These consulting parties are described below.



Historical Organizations

Historical and preservation organizations were identified in the project study area as consulting parties. Sixteen historical and preservation organizations have been included in the public involvement process through outreach that included mailings, notices and project updates (see Appendix B-3).

Tribal Coordination

Early coordination letters were sent to 17 Native American Tribes as part of the Section 106 consulting process (see Appendix B-3 for copies of coordination materials and Tribal response letters). Letters of response were received from the Delaware and Peoria Tribes of Native Americans. Neither tribe expressed any objection to the proposed project. Both tribes, however, have requested that work for the project be halted should skeletal remains be found during construction activities and that the appropriate tribes be contacted.

6.2. RESOURCE AGENCY COORDINATION

6.2.1. Resource Agency Meetings and Reviews

<u>Regulatory Agency Coordination Meetings:</u> Several Regulatory Agency Coordination Meetings have been held to date; January 17, 2002, April 18, 2002, October 17, 2002, and October 14, 2003. In general these meetings have been convened to update and to give further understanding to the agencies involved in the Eastern Corridor Multi-Modal Project on issues, processes and expectations. Represented at these sessions have been individuals from ODOT, FHWA, ODNR, Hamilton County TID, the City of Cincinnati DOT, USEPA, USFWS, USCOE, OEPA, NPS, OKI, SORTA/Metro, Clermont County and the project consultant team. Minutes from these meetings are on file at the project office.

<u>Project Coordination Meeting FTA, FHWA, USEPA and ODOT:</u> As discussed in Chapter 1, a project coordination meeting with representatives of the FTA, FHWA, USEPA, ODOT and the project consultant was held on April 12, 2002 at the FTA Regional Offices in Chicago, Illinois. This meeting was convened to update USEPA and FTA regarding the Eastern Corridor Project and its relationship to other initiatives in the Cincinnati Metropolitan area. A second meeting with federal agencies occurred on June 27, 2003 in Chicago, Illinois. The purpose of the second meeting was to give a general project update, ensure adherence to the NEPA process, and to make refinements to the tiered approach being used for the project. Minutes for both meetings are on file at the project office.

<u>Phase I Field Strategies Meeting:</u> A field strategies meeting was held on August 2, 2002 at the ODOT Central Office with representatives from ODOT, OEPA and the project consultant team. The meeting was held prior to the environmental consultants' start of Phase I field studies in order to establish an understanding of intended field activities and ODOT's expectations. Minutes for this meeting are on file at the project office, and Tier 1 environmental work plans developed from this coordination are included in Appendix A.



Review of Preliminary Draft Environmental Impact Statement

A Tier 1 preliminary Draft Environmental Impact Statement was provided for agency review in January 2004. Comments received are included in Appendix C and summarized in Chapter 6.2.2 below.

6.2.2. Agency Comments

Agency comments received to date regarding Eastern Corridor Tier 1 work and review of the preliminary Draft Environmental Impact Statement are included in Appendix C. A summary of comments (by agency) and responses are presented in Table 6.1.

Agency and Date (copies of letters in Appendix C)	Summary of Agency Comments and Response or Decision <i>(in bolded italics)</i>
Ohio Department of Natural Resources, Division of Natural Areas and Preserves	ODNR Natural Heritage Database information regarding the occurrence of rare and/or unique species, scenic rivers, parks, preserves, unique and natural areas in the project study area. Correspondence included an electronic list with locations of known occurrences of Federal and State listed species. No project specific comments offered. <i>Acknowledged; database</i>
August 20, 2001 (letter)	information incorporated into DEIS.
RE: Endangered species information request	
United States Department of the Interior Fish and Wildlife Service	USFWS correspondence regarding the occurrence of Federal listed species in the project study area. Recommended that project impacts be minimized for water quality and high quality fish and wildlife habitats such as forests, streams and wetlands, and that impacts to streams and wetlands be reported to USCOE and OEPA for possible Clean Water Act 404/401 permit requirements.
September 14, 2001 (letter) RE: Endangered species information request	Recommended that surveys for the Federal listed Indiana bat and running buffalo clover be conducted if suitable habitat is found and coordination with USFWS be conducted if nests for the Federal listed bald eagle were observed within ½ mile of the project area. Site specific impacts to these features will be determined on a project-by-project basis in Tier 2; site-specific avoidance, minimization and mitigation measures will be evaluated, and, as necessary, mitigation plans will be developed as part of the 404/401 permit process and included in
	final project plans. Preliminary mitigation commitments for further development in Tier 2 are discussed in DEIS Chapters 8.3 and 8.4.
Ohio Department of Natural Resources to the Sierra Club	ODNR presents comments concerning a bridge crossing of the Little Miami River (LMR) and impact minimization and mitigation. Mitigation measures outlined by ODNR for the LMR included: 1) undeveloped lands to be purchased fee simple for holding by the Department of Natural
June 7, 2002 (letter)	Resources and/or conservation easements placed over adjacent lands to prevent development and to prevent increases in impervious surfaces, increases in stormwater discharges and to
RE: ODNR response to letter from Sierra Club forwarded from Governor	protect the floodplain, 2) clear spanning of the LMR with a new bridge crossing, and elevation of all roadway sections on piers if located in the 100-year floodplain and 3) implementation of the most stringent Best Management Practices for bridge construction designed in cooperation with the ODNR Scenic Rivers staff. ODNR notes that a Scenic Rivers representative was part of the MIS Task Force voting membership, and, although ODNR did not vote to include a new bridge in the recommended plan, ODNR recognizes the level of local support for the project, and addresses the need to consider support of a new bridge, but not without substantial mitigation. ODNR also notes that the proposed new bridge would be located in an already disturbed corridor. Given these factors, along with proposed mitigation, ODNR felt confident that the LMR could be protected from further degradation while still allowing the new bridge to be completed. <i>ODNR mitigation measures are addressed under ODOT letter to ODNR dated March 5, 2003</i> (see below). Detailed mitigation for the LMR will be further developed in Tier 2. Preliminary mitigation and environmental commitments are discussed in DEIS Chapters 8.3 and 8.4.
Department of Heath and Human Services Centers for Disease Control and	No project specific comments offered. Recommended that areas of potential health concern be considered during the NEPA process and described in the project EIS as warranted including: air quality, water quality/quantity, wetlands, floodplains, hazardous materials/wastes, non-hazardous areas and the project labeled in th
Prevention (CDC) letter to Federal Highway Administration	solid waste/other materials, noise, occupational health and safety, land use and housing, and environmental justice. CDC areas of concern are addressed in DEIS Chapters 4 and 5; preliminary mitigation measures and environmental commitments for further development

 Table 6.1. Summary of Agency Comments and Response to Comments



Agency and Date (copies of letters in Appendix C)	Summary of Agency Comments and Response or Decision <i>(in bolded italics)</i>
June 10, 2002 (letter)	in Tier 2 are discussed in DEIS Chapter 8.3 and 8.4.
RE: Review of NOI	
U. S. Department of the Interior National Park Service letter to Federal Highway Administration July 12, 2002 RE: Review of NOI	NPS notes that the Little Miami River is a State-administered component of the National Wild and Scenic Rivers System, designated as such for the purpose of protecting it's free flowing character, water quality, and outstanding scenic, recreational, and/or biologic and geologic values. It is protected under Section 7(a) of the Wild and Scenic Rivers Act, and bridge crossings are water resource projects that require evaluation under Section 7(a) of the Act. Projects that have a "direct and adverse effect" on the values for which a river was added to the national system are prohibited, and NPS is responsible for evaluating projects and their effects on designated rivers. Section 7 applicability for the project was further discussed by ODOT and resource agencies, and conclusions were summarized in a letter by ODOT to ODNR dated March 5, 2003 (see below). Preliminary Section 7 applicability for the project, based on the conclusions derived from this coordination, is described in Chapter 5.5 of this DEIS.
Ohio Department of Natural Resources comments July 15, 2002 (email) RE: Regulatory agency coordination following review of Environmental Inventory Source Document	Reiteration of ODNR mitigation comments received in a letter dated June 7, 2002 (see above), with additional comments/information regarding 100-year floodplains and National Flood Insurance Program area participants. Contact information was provided for project-area-specific local floodplain administrators from Hamilton County, the Village of Newtown and the Cities of Terrace Park, Fairfax and Cincinnati for coordination of the project with specific development standards, permits and floodplain construction requirements for each area. <i>All required floodplain coordination, permit application and minimization/mitigation will be conducted on a project-by-project basis in Tier 2, as noted in DEIS Chapter 8.4, Table 8.3.</i>
U. S. Department of the Interior National Park Service letter to Federal Highway Administration November 7, 2002 RE: NPS as cooperating agency	Paragraphs 1 and 2: NPS accepts request from FHWA to be a cooperating agency in the preparation of the tiered environmental impact statement, and notes that the project has the potential to impact the Little Miami River. NPS states that the LMR is a component of the National Wild and Scenic Rivers System, and that NPS has the responsibility to prepare Section 7 determinations for water resource projects that affect components of the system; NPS also notes that they have responsibility to provide comments regarding impacts to Section 4(f)/6(f) resources per DOT Act. Subsequent coordination between ODOT, NPS, DOI and FHWA regarding Section 7 applicability, as summarized in a letter from ODOT to ODNR dated March 5, 2003 (see below), concluded that Section 7 would not apply to the mainstem of the Little Miami River at this time, assuming a clear span crossing of this feature and no impact to the bed or bank below Ordinary High Water. However, should further alignment development conducted during Tier 2 determine that instream work is needed on the LMR or tributaries, then Section 7 review may apply. As the project develops in Tier 2, Section 7 issues will be monitored and fully coordinated with NPS, as applicable. These conclusions regarding Section 7 applicability are presented in Chapter 5.5 of the DEIS. Preliminary impact issues regarding Section 4(f)/6(f) resources are described in Tier 2, avoidance and minimization of impacts to these resources will be further evaluated, and Section 4(f)/6(f) coordination and review will be conducted, as necessary.
Ohio Department of Transportation Office of Environmental Services (ODOT-OES) to Ohio Department of Natural Resources (ODNR) March 5, 2003 (letter)	 This letter from ODOT to ODNR summarized minutes and conclusions regarding applicability of Section 7 review, and appropriate mitigation strategies for the Little Miami River. October 28, 2002 telephone conference with NPS, FHWA (Ohio and Washington), DOI and ODOT-OES: NPS noted during early project coordination (see NPS letter dated July 12, 2002) that Section 7 of the National Wild and Scenic Rivers Act would apply to the project; OES review of Section 7 law determined that Section 7 review may not be necessary under certain criteria for this project, and
RE: Summary of interagency meetings/correspondence on State and National Scenic River issues for HAM-32 (PID 22972) - Eastern Corridor	this was further discussed during the telephone conference. Conclusion: It was determined that Section 7 would not apply to the mainstem of the Little Miami River assuming the proposed LMR crossing would not impact the bed or bank below the Ordinary High Water Mark (OHWM). However, NPS Section 7 Review may be necessary should a selected alternative require any in-stream work on the LMR mainstem or on any tributaries to the LMR. NPS stated that such work could include bank stabilization, temporary or permanent fills, bank or channel shaping or dredging, placing temporary or permanent



	initiary of Agency comments and Response to comments
Agency and Date (copies of letters in Appendix C)	Summary of Agency Comments and Response or Decision <i>(in bolded italics)</i>
	structures (such as coffer dams, piers, abutments), or any other instream work in the mainstem or in tributary channels.
	NPS stated that as the project develops, these issues must be monitored and coordinated with them to assure Section 7 compliance, and results need to be reported in the environmental document(s).
	August 29, 2002 meeting with ODOT-OES, ODOT District 8 and ODNR: A Scenic Rivers Approval, in accordance with ORC Section 1517.16 is required before the proposed project can be constructed. As a condition of Scenic Rivers Approval, a letter was issued from ODNR on September 13, 1999 stating that "substantial mitigation would be required before ODNR would approve the project" (these measures reiterated in an ODNR letter to Sierra Club dated June 7, 2002; see above) and reiterated in an email dated May 30, 2002 (see above Ohio Department of Natural Resources comments email dated July 15, 2002). The email resulted from a Regulatory Agency Coordination Meeting about the project Environmental Inventory Source Document. ODNR's mitigation proposed for a bridge crossing of the LMR included: 1) fee simple purchase of undeveloped lands or placement of conservation easements over lands adjacent to the proposed extension of SR 32, 2) clear spanning of LMR with a new bridge structure, 3) elevation of all roadway sections in the 100-year floodplain to allow unimpeded passage of a 100-year flood event and 4) implementation of the most stringent Best Management Practices for bridge construction sites in cooperation with Scenic Rivers staff.
	Conclusions: Concerning fee simple purchase of lands adjacent to the LMR, ODOT stated that Ohio Law does not permit them to acquire lands for stream mitigation through the use of eminent domain and that the purchase of lands for such must be from willing sellers. ODOT stated that this would be difficult because of commercial sod farms already operating in the 100-year floodplain. The ODNR Scenic Rivers Administrator stated that he would like ODOT to purchase these lands and then turn them over to ODNR. However, seeing the possible dilemma, the ODNR Deputy Director stated that mitigation in the form of land acquisition could occur within a reasonable distance from the proposed impact within the LMR watershed. In addition, the ODNR Scenic Rivers Administrator stated that he would also like to see a bridge structure that would clear span the LMR was possible but to include the entire 100-year floodplain was likely be unfeasible. ODOT reminded ODNR that the project was in the early stages of the development process and that results of final construction and mitigation plans would be included in the environmental document(s).
U. S. Department of the Interior National Park Service to Federal Highway Administration	Paragraph 1: NPS welcomes opportunity to participate in interagency meeting to be held October 14, 2003 as announced by FHWA. <i>Acknowledged. NPS participated in this meeting (held October 17, 2003).</i>
October 8, 2003 (letter) RE: Additional project comments	<u>Paragraph 2</u> : NPS requests that an avoidance alternative be considered to a Little Miami River crossing and that this be provided in all stages of the planning process (tier 1 and future tiers). There are no options for execution of the multi-modal concept plan outlined in the adopted MIS for the project that do not involve crossing the Little Miami River. Avoidance options were considered in the MIS phase by the broad stakeholder advisory group as well as by the public and were found not to meet the long term needs of the regional transportation system. The process surrounding this issue is outlined MIS document.
	<u>Paragraph 3</u> : NPS requests the opportunity to comment on all internal draft plan documents that affect the Little Miami River. NPS was provided the opportunity to review the preliminary Draft Environmental Impact Statement, and provided comments on this document in a letter dated May 27, 2004 (see below).
	<u>Paragraph 4</u> : NPS states that because the Little Miami River is a component of the National Wild and Scenic Rivers System, it has the responsibility for such projects to prepare Section 7 determinations per the Wild and Scenic Rivers Act. Additionally, NPS states that they have the responsibility to provide comments regarding impact to section 4(f)/6(f) resources under the Department of Transportation Act. <i>This comment is reiterated from an NPS letter dated</i> <i>November 7, 2002; please see above for response.</i>
	Paragraphs 5-8: NPS reiterates comments from a previous letter dated July 12, 2002 regarding applicability of Section 7 of the National Wild and Scenic Rivers Act. <i>For response, please see</i>



Agency and Date (copies of letters in Appendix C)	Summary of Agency Comments and Response or Decision <i>(in bolded italics)</i>
	NPS letters dated July 12, 2002 and November 7, 2002.
Ohio Environmental Protection Agency to Ohio Department of Transportation	OEPA acknowledges receipt and review of the Eastern Corridor Preliminary Draft Environmental Impact Statement (Tier 1) and offers comments included in this letter.
May 4, 2004 (letter)	Impaired or Disturbed Watershed and Watershed Improvement/Mitigation Opportunities: Comment 1- Little Miami River: OEPA comments that changes in land patterns in the LMR watershed are altering rates and types of nonpoint pollutants discharged within the
RE: Review of Tier 1 pDEIS	watershed, and encourages consideration of transportation design and construction activities that minimize impacts, alteration, fragmentation and destruction, and emphasize mitigation and restorative strategies that improve water quality and habitat conditions in this watershed, especially the Lower LMR subwatershed. <i>Preliminary mitigation commitments and</i> <i>expected permits for the Little Miami River for further development in Tier 2 are</i> <i>discussed in Chapters 8.3 and 8.4, and listed in Table 8.3. Commitment is made in this</i> <i>Tier 1 DEIS to complete all required coordination, evaluation and permit application</i> <i>applicable to the Little Miami River during Tier 2.</i>
	Comment 2 - Subwatersheds: OEPA comments that the eastern terminus of the detailed study area falls within the Lower East Fork and Shayler Run watersheds, Clermont County, and summarizes several goals from two management plans (i.e., the Lower East Fork Watershed Management Plan, 2003 and the Shayler Run Watershed Management Plan, 2002) issued by the East Fork Watershed Collaborative. OEPA also notes that Clermont County's Phase I Agreement is considering management as a method of controlling nonpoint pollution sources to the East Fork Lower Miami River Watershed. OEPA encourages the Eastern Corridor Study group to recognize problems and concerns in these watersheds, and notes that compensatory mitigation may focus on efforts within these watersheds that consider methods to abate the problems of impervious surfaces and nonpoint source discharges by improving/developing stormwater controls and wetland habitat to contain high peak flows, pollutants and sedimentation. <i>Site specific impacts to streams will be determined on a project-by-project basis in Tier 2; site-specific avoidance, minimization and mitigation measures will be evaluated, and, as necessary, mitigation plans, including measures for stormwater control, will be developed as part of the</i>
	404/401 permit process and included in final project plans. Preliminary mitigation commitments for further development in Tier 2 are discussed in Chapter 8.3 and 8.4.
	Area #2 – Ohio/Wooster West: Comment 1 - OEPA notes that this area contains high quality ecological and cultural resources, and that a recent study of the Horseshoe Bend area reported rare species of birds and other important flora and fauna. OEPA suggests considering design alternatives that minimize impacts to these resources, and states that they prefer an alignment either to the north or south of Horseshoe Bend. <i>This Tier 1 document presents a number of alignment</i> options under consideration in Area #2 that, depending on the alternative, were developed to avoid or minimize impacts to the numerous ecological and cultural resources occurring in this area. These alternatives will be further developed in Tier 2, and a detailed comparative analysis of environmental impacts per NEPA requirements will be conducted. A preferred alternative will be selected in consideration of avoidance and minimization of impacts, public input, cost, purpose and need, and other project issues.
	Comment 2 - Groundwater Aquifer: OEPA notes that a portion of the study area overlaps the Sole Source Aquifer (designated by USEPA), and cautions avoiding or minimizing impacts to this aquifer and control any discharges that may potentially contaminate it. <i>Please see Table 8.3 for commitments regarding avoidance and minimization of impacts to groundwater (to be further developed in Tier 2).</i>
	<u>Design Considerations</u> : To minimize impacts to aquatic resources, OEPA requests considering integrating existing transportation roadway structures with the Corridor 32 transportation design alternatives, if feasible. OEPA would like to see consideration of clear span bridge crossings instead of structures that involve placement of fill below the OHWM, especially for the LMR and its high quality tributaries. The proposed action is to clear-span the Little Miami River with no piers or permanent fill below the OHWM, as described in various locations in the Tier 1 document; structure crossings for other features will be evaluated in Tier 2, and impacts and mitigation will be fully evaluated through the 404/401 permit process.



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	<u>General Mitigation Suggestions</u> : OEPA offers general suggestions on compensatory mitigation, including: acquisition and conversion of brownfields into greenspace, restoration/enhancement/ development of riparian and wetland habitat, "stream daylighting" (from buried culverts and pipes), and restoration of floodplain habitat. OEPA encourages the Eastern Corridor group to network its mitigation efforts with local watershed groups. <i>The preliminary mitigation strategy for the</i> <i>Eastern Corridor, discussed in Chapters 5.6 and 8.3.2, provides opportunity for the types of</i> <i>mitigation OEPA describes; mitigation details will be further developed in Tier 2, and fully</i> <i>evaluated and coordinated through the 404/401 permit process.</i>
U.S. Environmental Protection Agency to Ohio Department of Transportation	USEPA has reviewed the Preliminary Draft Environmental Impact Statement, and offers attached comments for developing the Tier 1 DEIS.
May 6, 2004	<u>Comment 1</u> – Levels of Service on highway segments: Regarding Table 2.2, USEPA comments that the DEIS should explain why LOS is reported as a range, or refine the table to a single
RE: Review of Tier 1 pDEIS	expected LOS value per highway segment. USEPA also recommends that current LOS be reported for the same highway segments. <i>Table 2.2 has been revised to list only highway</i> segments with projected below-standard LOS (E or F). An assessment of LOS and volume/capacity ratio was conducted that showed expected relative changes from the current period through the 2030 planning horizon. This work used projections and outputs from the OKI Regional Travel Demand Model (RTDM) as indicators of relative change. From modeling forecasts for the four Districts that encompass the Eastern Corridor, about 7.9 % of all travel in the corridor operated under LOS of E or F in 1995 (the RTDM base year), with just under 12% at E or F during the afternoon peak period. By 2030, under a 'No-Build' condition, the LOS E and F total will reach about 16.2 % for all travel, and nearly 27% for the PM peak period, an increase of more than 100%. Similar results are found when volume/capacity versus lane-miles of roadway were examined using the RTDM. For example, the 1995 base year showed the Eastern Corridor operating with about 80 total lane miles under a V/C ratio of 1.0 or greater during the afternoon peak hour (a V/C ration of 1.0 is roughly equivalent to a LOS of F). By 2030, this lane-mile total is projected to grow to 166 (more than 100% increase). Morning, midday and night peaks exhibited the same magnitude of percent of increase.
	<u>Comment 2</u> – Little Miami River bridge crossing: USEPA notes that two options for relocating SR 32 were presented in the PDEIS, and that Option 1, which includes a new LMR bridge crossing, was carried forward, but Option 2, which avoids a new crossing, was not. USEPA comments that a Tier 1 DEIS should retain feasible options that address the project's purpose and need and avoid environmental impacts, and that the PDEIS does not successfully demonstrate that Option 2 is not feasible. USEPA therefore recommends that Option 2 be carried forward as an alternative, and that the status of the LMR as a National Wild and Scenic River warrants further analysis on the impacts and benefits of each option. These options were evaluated in the MIS phase and Option 2 was found to be not able to adequately or appropriately address regional transportation-efficient location than Option 1, as a modification or expansion of an existing bridge crossing along the Beechmont Levee in order to provide a "no new crossing" option for consideration by the stakeholder group concluded that Option 1 was the only concept plan appropriate for meeting the long-term needs of the region, but recognized important potential impact concerns and, with the input of agencies and interest groups, established a strategy for addressing those issues in the next phase of work. Option 1 formed the basis of the Recommended Plan identified in the MIS for alternatives development and evaluation under NEPA.
	<u>Comment 3</u> – Highway Relocation in relation to other projects within the study area: USEPA notes that the decision to characterize a new bridge over the LMR as unavoidable affects other decisions, such as location of the multi-modal convergence area in the Fairfax area, and the highway alternatives in Area #2. USEPA in unclear as to whether the multimodal convergence area or highway relocation alternatives are controlling the new bridge location or are a result of it, and recommend explaining the selection of this particular corridor for a bridge crossing in the DEIS. USEPA does not agree that the PDEIS confirms that a new bridge crossing is unavoidable, and reiterates (from Comment 2) that decisions based on that determination may need to be reevaluated in the DEIS or during Tier 2 work. <i>Please see response to Comment 1, above. The multi-modal convergence area is a reflection of the location and relationship of the general corridors identified in the MIS Recommended Plan.</i>



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	<u>Comment 4</u> – Cultural Resources: The PDEIS reports that all alternatives in Area #2 are likely to impact the Hahn Field Archaeological District, which is on the National Register, and USEPA comments that the location of the new bridge appears to determine the location of the highway through this resource. USEPA suggests that reinstating Option 2 may yield other alternatives during Tier 2 that minimize impacts to the Hahn Field. <i>Please see response to Comment 1, above. Regarding impact minimization, Tier 1 alternatives have been identified that minimize to Hahn Field, and this effort will continue in Tier 2 as more and better data that describe the limits and value of the resource become available and integrated in the process.</i>
Ohio Department of Natural Resources to Ohio Department of Transportation May 11, 2004 (email)	ODNR reiterates information provided in previous correspondence noted above (August 20, 2001 and July 15, 2002) regarding Natural Heritage Database information on rare and endangered species in the project vicinity, scenic rivers, fish and wild life, and special flood hazard areas. ODNR notes that additional comments regarding scenic rivers and fish and wildlife may be submitted as the project is better defined. <i>Comment acknowledged; no response needed.</i>
	submitted as the project is better defined. Comment acknowledged, no response needed.
RE: Review of Tier 1 pDEIS U.S. Army Corps of Engineers, Louisville District, Ohio Field Office to Ohio Department of Transportation May 24, 2004 RE: Review of Tier 1 pDEIS	Paragraphs 1-4: USACOE exercises regulatory authority under Section 10 of the Rivers and Harbor Act and Section 404 of the Clean Water Act, and notes that the data provided in the pDEIS indicates authorizations under one or both of these sections of law, but that insufficient information is available for the USACOE to determine permit needs for this particular proposal at this time. <i>Permit requirements will be determined in Tier 2 on a project-by-project basis following</i> <i>development of alignment-specific details and preferred alternative selection, and further</i> <i>coordination with USACOE will be conducted, as appropriate. Preliminary mitigation</i> <i>issues and the various permits expected to be required for the Eastern Corridor are</i> <i>summarized in Chapter 8.3.</i>
	Paragraphs 5-6: USACOE notes that jurisdictional wetland determinations need to be conducted per 1987 COE manual, and that a report of investigation and findings is normally provided for ACOE review and concurrency; USACOE is available for onsite field verification of determinations and delineations prior to preparation of the DEIS. Wetland determinations conducted in Tier 1 are presented in the Eastern Corridor Ecological Resources Inventory Report (Balke American, February 2003), available to USACOE upon request; additional wetland work, including delineations, will be conducted in Tier 2 on a project-by-project basis, and a request for field verification by USACOE will be made at that time.
	<u>Paragraph 7</u> : USACOE notes that avoidance, minimization or potential mitigation will be required for aquatic resources, and that this process should be included in the alternatives analysis and feasible alternatives selection process. As discussed in the DEIS, Tier 1 feasible alternatives have been developed with consideration of avoidance and minimization to the extent practicable, and further avoidance, minimization and mitigation will be evaluated in Tier 2 during detailed alignment development.
	<u>Paragraph 8</u> : USACOE comments that it is best to ultimately submit a formal DA permit application once the feasible alternative selection process is completed, and encloses a packet containing applicable permit information and forms. As noted above, 404/401 and other required permits will be determined in Tier 2, and further coordination with USACOE and 404/401 permit application will take place at that time (following development of alignment details and preferred alternative selection).
U. S. Department of the Interior National Park Service to Federal Highway Administration	NPS General Comments: Paragraph 1: NPS recognizes comprehensiveness of PDEIS and complexity of the multi-modal planning effort. Comment acknowledged; no response needed.
May 27, 2004 (letter) RE: Review of Tier 1 pDEIS	<u>Paragraph 2</u> : NPS is concerned by lack of alternatives that avoid LMWSR bridge crossing (even though piers in the water are not anticipated), as requested in October 2003 letter to ODOT. There are no options for execution of the multi-modal concept plan, as outlined in the adopted MIS for the project to address long-term transportation for the region, that do not involve crossing the Little Miami River. Avoidance options were considered in the MIS phase by the broad stakeholder advisory group as well as by the public and were found not to meet the long term needs of the regional transportation system. The process surrounding this issue is outlined in the MIS document.



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	NPS comments that document lacks baseline data on LMWSR, and evaluation did not consider national significance of river. Chapter 4.1.4 of the DEIS presents background information on the LMR regarding its state and national designations, adjacent recreational uses, preliminary Section 7 and Section 4(f) applicability, OEPA use designations, aquatic life use attainment and impairment, previous OEPA biological and water quality studies conducted in the project vicinity (including mussel surveys) and threatened and endangered species. Also included are channel and riparian corridor descriptions and QHEI information for the LMR at the general proposed stream crossing locations based on Tier 1 field studies conducted for the project.
	This level of data collection for the LMR was determined appropriate for Tier 1 based on joint agency coordination held early in the Tier 1 work program, as described in Chapter 1.5.2 and included in Appendix A of the DEIS. Additional, more detailed field studies, as appropriate, will be conducted in Tier 2 when further alignment details for feasible alternatives are developed and a preferred crossing location is identified.
	<u>Paragraph 3</u> : NPS comments that an alternative avoiding significant impacts to LMWSR be fully evaluated, and believes that an alternative embracing all modes without a (new) bridge crossing is feasible (would meet project purpose and need, avoid significant impacts to the LMWSR and reduce costs of a bridge that fully spans LMWSR floodplain). <i>Please see response to Paragraph 2, above. The proposed action, incorporating a clear span of the LMR channel and avoiding permanent fill below the Ordinary High Water elevation, may avoid adverse impacts of primary significance or concern expressed by the NPS.</i>
	<u>Paragraph 4</u> : NPS comments that pDEIS does not provide rigorous evaluation of potential impacts (direct, indirect and cumulative) the proposed bridge would have on LMWSR ORVs. <i>Preliminary evaluation of secondary and cumulative impacts to categories that contribute to LMR ORVs is included in Chapter 5.6.</i>
	A discussion of these impacts in context of the funds used to rehabilitate the river should be included in the existing cost-benefit section (Chapter 1.6.3). Rehabilitation efforts by ODNR and other groups are referenced in Chapter 5.6 as they relate to past actions (greenspace preservation) that have occurred within the Eastern Corridor.
	Paragraph 5: NPS describes various concerns regarding selection of SR 32 Option 1 (which included a new LMR crossing) during the MIS phase, as summarized in pages 3-7 and 3-8 on the PDEIS, related to:
	 Hamilton Co. Engineers position paper (NPS wants paper disclosed in DEIS) performance/purpose and need
	O impacts Please see response to Paragraph 2, above. The Eastern Corridor MIS was metropolitan- area transportation planning work that: 1) considered a broad range of needs and options, 2) involved stakeholders and the public, and 3) considered constraints and possible impacts at an appropriate level, including those of the man-made and natural environment, in the development of conceptual alternatives and a Recommended Plan. The starting point in the MIS work was to identify a solution that would: 1) not require a new crossing of the LMR and 2) still be able to meet the long-term transportation needs of the region. In confirmation with the stakeholders and the public, the MIS concluded that there was no workable, feasible solution that did not involve crossing the LMR.
	The MIS document, which was approved by the stakeholders, supported by the public and adopted by the OKI Board of Trustees as a key part of the long-range plan for the region, addresses the information in the comment.
	<u>Paragraph 6</u> : NPS requests a visual simulation of the LMR bridge design be provided in Tier 1 document, as well as discussion of feasibility of design that precludes in-stream piers. <i>Bridge</i> design details, including the type of structure, as well as a specific crossing location, have not been determined in Tier 1; therefore a visual simulation has not been developed. Visual simulation of the LMR bridge design may be developed in Tier 2, as necessary for facilitating public and agency review and understanding. Regarding feasibility of a design that precludes instream piers, the conceptual design at this stage in project development has established that the structural crossing will provide a clear span over the river channel and immediate riparian area. Possible bridge types include cable-stayed, extrados, truss,



Table 6.1. Summary of Ag	ency Comments and Response to Comments
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	haunched steel girder, or box girders. This descriptive information on the conceptual design for the bridge has been added to Little Miami River discussions included in Chapters 4.1.4 and 5.2.2.
	<u>Paragraph 7</u> : NPS's preliminary Section 7(a) determination is that bridge structure would have a direct and adverse effect on the scenic and recreational ORVs of the LMWSR, and requests continued consultation on bridge design and associated features that would require federal permits or otherwise qualify the project as a "water resources project". As noted in previous responses, coordination between ODOT, NPS, DOI and FHWA regarding Section 7 applicability, as summarized in a letter from ODOT to ODNR dated March 5, 2003, concluded that Section 7 would not apply to the mainstem of the Little Miami River at this time, assuming a clear span crossing of this feature and no impact to the bed or bank below Ordinary High Water. However, should further alignment development conducted during Tier 2 determine that instream work is needed on the LMR or tributaries, then Section 7 review may apply. As the project develops in Tier 2 and detailed bridge design and location are determined, any actions involving Section 7, as well as any other federal permits, will be monitored and fully coordinated with NPS and the appropriate federal agencies, as applicable.
	NPS Specific Comments:
	<u>Title page; Summary and Introduction</u> : Indicate that NPS is a cooperating agency; eliminate Part A and Part B referencing (use only tier 1 and tier 2). NPS is identified as a cooperating agency on the DEIS cover page, as well as in the Summary and Chapter 1.5.2 of the DEIS. Part A and Part B references have been eliminated from the DEIS and replaced with Tier 1 and Tier 2, as noted.
	Page S-2, Alternatives Under Consideration: NPS comments that PDEIS does not clearly present alternatives proposed, and that a matrix of each active/action alternative being considered for each mode, highlighting either/or options and/or segments, as well as a matrix outlining impacts for each set of alternatives be included here and fully presented in Chapter 3. As a point of possible clarification, the proposed action is a multi-modal plan, including investments in rail, bus, highway and existing system improvements in order to address different needs. Alternatives developed in Tier 1 are described in detail in Chapter 3; matrices presenting preliminary ranges of impacts for the alternatives under consideration within each mode are included in Tables 5.2 (TSM), 5.3 (bus hubs), 5.4 (rail transit), 5.5 (rail stations), 5.6 through 5.8 (highway alternatives by segment), and 5.9 (bikeways). Total end-to-end preliminary ranges of impact for the Eastern Corridor as a whole are presented in Tables 5.12 (highway alternatives) and 5.13 (rail transit alternatives).
	Page S-5, Segments I-III: NPS requests here and elsewhere that LMR be identified as Little Miami Wild and Scenic River (LMWSR). <i>The document uses "Little Miami River" as the official name per OEPA Water Quality Use Designations (OAC 3745-1) and as listed in the USGS Hydrologic Unit Code Watershed identification.</i>
	Page S-9, Preliminary Impact Assessment for Feasible Multi-Modal Alternative by Area: NPS comments on confusion regarding alternatives and associated impacts and requests clarification on purpose of this section. The Tier 1 DEIS describes feasible alternatives and presents impacts for alternatives in two ways: by mode and by geographic area. Describing impacts "by area" was, in part, a response to information needs expressed by the public (most people want to see everything that might happen in a specific area on one map or in one table, regardless of what project category the actions might fall into). Modal alternatives are described first (Chapter 3.4.1), including the various TSM, bus transit, rail transit, highway and bikeway alternatives under consideration for the Eastern Corridor as a whole. The Eastern Corridor, however, is not single-mode based, but a multi-modal plan in which the various modes are being developed together for eventual implementation. The Eastern Corridor land use vision work, conducted prior to Tier 1, identified land use priorities for six geographic regions within the Eastern Corridor. The land use plan, along with the Eastern Corridor MIS, provided the framework for Tier 1 alternatives development. As such, feasible modal alternatives developed for Tier 1 are grouped and described together in a multi-modal framework by six geographic areas (feasible multi-modal alternatives by area; Chapter 3.4.2), generally corresponding to the focus areas used in the land use vision process. This grouping generally accounts for logical termini and



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	operational considerations (local and/or regional), and how various projects may be broker out for Tier 2 work. Impact analyses are also presented the same way – by mode (Chapter 5.1) and by geographic area (Chapter 5.2).
	Page S-11, Agency Coordination, Paragraph 1: Indicate when regulatory agency meeting were held. <i>Revised as noted.</i>
	Paragraphs 2/3: Indicate here and on page I-10 that NPS is a cooperating agency. NPS is <i>identified as a cooperating agency on the DEIS cover page, as well as in the Summary and Chapter 1.5.2 of the DEIS.</i>
	Page S-11, Project Implementation: Change "will" to "would". Revised as noted.
	Page S-12, Permits: NPS recommends that Section 4(f) resources and Section 106 evaluations be listed as separate issues here and throughout document. <i>Revised as noted.</i>
	<u>Chapter 1.2.2., MIS Goals</u> : NPS requests elaboration of "larger environmental goals for the Eastern Corridor", how goals will be evaluated and how it will be determined which alternative bes meet goals. Chapter 1 of the DEIS deals with Project History and Background. Those four goals listed in Chapter 1.1.2 were part of the MIS process and were part of the considerations weighed by stakeholders and the public in the development of the MIS Recommended Plan. Public information displays for the MIS process described how the Recommended Plan (the basis of the Tier 1 proposed action) forwarded each of the four goals. Public input confirmed that the Plan was on target for supporting those goals. The current action is simply execution of Recommended Plan, with consideration of the four MIS goals as ongoing guideposts. Public involvement in the PE/EIS phase recapitulated those goals as a framework for moving forward, and has invited input as to how the work is seen as keeping those goals intact.
	Chapter 1.2.3., MIS Evaluation Process and Recommended Plan: NPS reiterates concerns noted in General Comments, Paragraph 5 (above) regarding MIS evaluation of alternatives to avoid an LMR river crossing, adding that decision:
	O was made without a vigorous environmental analysis
	O did not involve all entities having jurisdictional responsibility
	O was made prior to NOI
	NPS also reiterates Chapter 1.2.2 comments regarding MIS environmental goals. The MIS work for the Eastern Corridor was conducted by the Ohio-Kentucky-Indiana Regional Council of Governments and followed metropolitan area rules for transportation planning per 23CFR450(c). The MIS considered a broad range of information, including environmental factors and public and stakeholder input, in identifying a Recommended Plan for long-range improvements in the Eastern Corridor. Technical analyses, including consideration of environmental factors, were at a scale and level of detail appropriate for the regional plan issues under consideration. The public and stakeholders confirmed the approach and decision-making process. Local, state and federal agency stakeholders wer invited to participate in the process. The affected political jurisdictions that make up the corridor voted unanimously in support of the Recommended Plan outlined in the MIS. See also response to comment on Chapter 1.2.2. (above).
	<u>Chapter 1.5.2., Tiered NEPA Process</u> , Paragraph 1: NPS comments that tiering does not necessarily take place in only two stages and requests clarification. Paragraph 2: Change phrase " and level of expected impact" to " and degree or intensity of predicted impact". Revised a. noted.
	Page 1-10, Coordination for Tier 1 Work Plans, first sentence: Clarify by changing "assessment" to "analysis". <i>Revised as noted.</i>
	NPS requests that methodologies, impact thresholds, and criteria for analysis be discussed here and in Chapter 5. <i>Tier 1 methodologies (ecological, cultural and hazardous materials) are presented in Appendix A.</i>
	<u>Chapter 1.6.3., Benefit/Cost Analysis</u> : Clarify this section and how it relates to NEPA process. The benefit/cost analysis is external to the DEIS. and is a tool that the local stakeholder



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	group, in coordination with the public, will use to help determine priority actions within the overall framework.
	<u>Chapter 1.7.3., Environmental Conditions</u> : Clarify "man-made", "built-up communities", "air quality and noise" (these are not features), and add LMR to discussion of environmentally sensitive resources in paragraph 2. <i>Revised as noted.</i>
	<u>Chapter 2.1., Purpose and Need</u> : Clarify if "long range plan for the region" is identified in the ECLUVP, and indicate if this regional plan was subject to NEPA review. As described in Chapter 1.3, transportation recommendations developed during the Eastern Corridor MIS, and subsequently adopted by OKI's long range regional plan, were used a guideposts, but not incorporated as specific recommendations or required actions of the final land use vision plan. Instead, the land uses from the vision plan were integrated into the Eastern Corridor Tier 1 planning process to identify appropriate fit and effectiveness of transportation solutions in supporting the vision plan land uses. See NPS comment on Chapter 3.1.2 (below) for response regarding regional plan and NEPA review.
	NPS comments that four project goals are broadly defined and notes that PDEIS does not indicate level of mobility improvements or economic support desired. <i>Please see response to NPS comment Chapter 1.2.2 (above).</i>
	NPS also reiterates Chapter 1.2.2 comments regarding MIS environmental goals. <i>Please see response to NPS comment Chapter 1.2.2 (above).</i>
	Table 2.1,2.2: State source and indicate model assumptions and/or limitations. Footnote added to table indicating source; model assumptions are described in Chapter 1.6.2.
	<u>Chapter 2.2.4., Safety issues</u> : Define "high traffic volumes" and "below standard levels of service" and cite source of information in Table 2.4. Text revised for clarification; footnote added to <i>table indicating source.</i>
	<u>Chapter 2.2.4. Intersection Accidents</u> : Identify causes of accidents and how trends compare to other areas with similar population and/or growth rates. Chapter 2.2.4 was revised identifying general causes of accidents, as available from Ohio Department of Public Safety; text already notes that 84 percent of roadways evaluated in the Eastern Corridor exceeded the statewide accident average, based on comparison of similar facilities throughout the state (trend comparison).
	<u>Chapter 3, Organization</u> : NPS comments that Chapter 3 does not demonstrate requirements of 40 CFR 1502.14 regarding evaluation of reasonable alternatives, comparison of impacts, identification of a preferred alternative, and mitigation. <i>As described in Chapter 1.5.2, this project was determined to warrant a tiered NEPA strategy due to the complexity involved in coordination of multi-modal improvements, prioritization of projects, and the different construction timing (implementation) expected for the needed transportation investments identified from the project MIS. A tiered NEPA process customized for the Eastern Corrido was developed with guidance and scoping input from FHWA, FTA and resource agencies. Overall, Tier 1 work, as presented in this DEIS, includes description of purpose and need (Chapter 2), development of feasible alternatives (Chapter 3), identification of environmental resources occurring in the area based on a combination of secondary source information and field studies (Chapter 4), preliminary assessment of expected impacts for feasible alternatives and fit with identified land use vision goals (Chapter 5), a summary of public and agency involvement (Chapter 6) and an overview of implementation considerations (Chapter 7). The goal of Tier 1 work is not an either/or determination amon, modes or alternatives within a mode. It is rather an effort intended to identify how the various modal investments, in a multi-modal framework consistent with the recommendations of the MIS, may be best implemented in consideration of many factors, including engineering, environmental, financial, public input, land use and community development issues. Tier 2 work for the Eastern Corridor will be a completion of the NEPA process by the preparation of individual environmental documents for each of the projects carried through from Tier 1. These Tier 2 NEPA documents will refer to the project purpose and need and other background information presented in the Tier 1 ElS, but will incorporate more detailed altern</i>



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	project-by-project basis. As such, all NEPA requirements per 40 CFR 1502.14 regarding alternatives evaluation, preferred alternatives selection, and mitigation will be met by the end of Tier 2.
	NPS also reiterates comments for page S-9 regarding alternatives by mode versus geographic area. <i>Please see response to NPS comment Page S-9 (above).</i>
	NPS also reiterates General Comment, paragraph 3, regarding evaluation of an alternative that avoids the LMR crossing. <i>Please see response to NPS General Comment, paragraph 3</i> (above).
	<u>Chapter 3.2.1, Summary of MIS Alternatives</u> : NPS requests clarification of why MIS decisions were not evaluated as part of Tier 1, or otherwise subject to requirements of NEPA and/or stakeholder input. In the transportation development process, the MIS is an early planning study used in an urban area, and sponsored by a metropolitan planning organization, to a decision-makers in identifying transportation problems and possible solutions, for the kee purpose of arriving at a consensus on design concept and design scope for a project that is a major financial investment and/or that affects a large corridor. The design concept a scope identified through the MIS process is the solution that has been determined to bes satisfy transportation goals and objectives, and that takes into account other goals for the region, such as land use, economic development, air quality and goods movement. In general, the MIS involves early, overview-level analysis of a range of alternatives and overview of impacts - conducted prior to the advancement of a project into the NEPA process (e.g., the EIS phase), and helps define how the NEPA process will be completed. The MIS is a collaborative effort involving key federal, state and local stakeholders and public input working together to agree on a transportation solution, which is then approv by the MPO board, adopted into the long range plan, and forwarded for continuation and completion of the NEPA process.
	For the Eastern Corridor, this collaborative process involved input and decision-making from an approximately 60-member MIS task force that included representatives from OKI (the regional MPO), federal and state transportation agencies, 18 local political subdivisions, resource agencies (including ODNR Scenic Rivers), and local business leaders. A variety of alternatives and preliminary concepts for addressing current and projected transportation problems were evaluated during the MIS process, including subcommittee review of river crossing options, as summarized in Chapter 3.2.2 of the DE and documented in the Eastern Corridor MIS report. The conclusion reached by the task force at the end of the MIS process was that the best solution for addressing transportati need in the Eastern Corridor consisted of a multi-modal plan - the MIS Recommended Pla - that included as part of the highway component, a relocated SR 32 alternative on new alignment from the Eastgate area to US 50 in Fairfax, and that included a new Little Miam. River crossing near Red Bank Road/US 50. ODNR Scenic Rivers, although they did not vote to include a new bridge in the recommended plan, recognized the level of local support for the project, and addressed the need to consider support of a new bridge, but not without substantial mitigation, as noted in a letter dated June 7, 2002 (see above). A described in Chapter 1.2.1, the MIS Recommended Plan was approved by OKI's Policy Board in 1998, and incorporated into the 2030 long-range regional transportation plan.
	<u>Chapter 3.1.3., Documentation of Alternatives</u> , paragraph 3: NPS asks why NOI was not published prior to three rounds of public meetings. Language revised for clarification: NOI was published in May 2001, prior to first round of public meetings held in May-June 2001.
	<u>Chapter 3.2.2., Relocated SR 32 Options 1 and 2</u> : NPS requests quantification of travel benefits described in MIS relative to Option 1 and 2, including methodology used and decision on how Option 2 performed more efficiently. <i>This commentary pertains to the MIS process. This information is available in the MIS documentation. This section of the DEIS is simply recapping what work transpired at the metropolitan area planning level so to give understanding to further development of specific alternatives for the multi-modal plan.</i>
	NPS requests that Beechmont Levee traffic volumes reported in MIS be updated with current date and further describe what "substantial impact" to existing development in Linwood would be. <i>The commentary pertains to the MIS process. This information is available in the MIS documentation.</i>



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	NPS requests further description of environmental impacts along LMR for Options 1 and 2, and disclosure of factors that were used by task force to select Option 1 over Option 2. <i>This commentary pertains to the MIS process. This information is available in the MIS documentation. These options were evaluated in the MIS phase and Option 2 was found be not able to adequately or appropriately address regional transportation need. Option formed the basis of the Recommended Plan identified in the MIS for alternatives development and evaluation under NEPA.</i>		
	NPS asks if the general provisions for mitigating adverse impacts to the LMWSR outlined by the MIS task force were discussed in context of ORVs; requests discussion of potential noise impact and comments that these questions and decisions regarding Options 1 and 2 are appropriate to the PDEIS not MIS. This commentary pertains to the MIS process. This information is available in the MIS documentation. ORVs were not likely part of the specifics of the MIS phase of work except as brought to the discussion by NPS, ODNR, or Little Miami Incorporated; however, the assumed underlying factors of consideration in the development of ORVs were part of the context of discussion. Specific noise impacts and mitigation will be part of the Tier 2 EIS. The decisions regarding Options 1 and 2 in the M were part of the narrowing of focus under the metropolitan area transportation planning effort, where approaches that are unable to adequately or appropriately address regiona needs are eliminated from consideration (just as passenger ferries operating on a specific route from Anderson Township to downtown Cincinnati on the Ohio River were also eliminated in the MIS).		
	NPS requests that a tunnel be considered as a potential alternative transportation crossing und the LMWSR. The NPS request for a tunnel as a crossing type alternative has been forwarded to USDOT for consideration, and will be evaluated in Tier 2.		
	<u>Chapter 4.1.4: Little Miami River and Other Surface Streams</u> : NPS comments that LMWSR should be treated as a stand-alone impact topic in this Chapter and Chapter 5 per 40 CFR 1508.27) and requests that name be changed from LMR to LMWSR. <i>Please see response to NPS comment Page S-5 regarding LMR name.</i>		
	NPS suggests moving discussion of laws, regulations, agency coordination and involvement relevant to the LMR to Chapter 5 under a separate heading, and to add reference to Section 1(of the Wild and Scenic Rivers Act. The suggested information pertaining to the LMR has been included in Chapter 4 as pertinent background information, and reiterated in Chapter 5.5 as it relates to environmental consequences.		
	<u>Chapter 4.1.4., LMWSR</u> : NPS comments that this section lacks critical baseline information regarding the LMWSR, and provides four paragraphs of information that should be included in Chapter 4, that should also serve as benchmark for evaluating impacts to the LMWSR or conducting cost/benefit analyses; the four paragraphs include information on:		
	 discussion of the LMWSR ORVs reference to a August 1997 letter to OKI regarding DOI management objectives for t LMR outlined in a 1973 LMR scenic river study 		
	 notation that the lower 28 mile section of LMR was initially deemed ineligible when f studied for inclusion in the national system, but later met requirements following rehabilitation efforts by state, local and federal agencies 		
	 information regarding financial assistance and funding that has been provided over the version of the provided over the second se		
	NPS also comments that LMWSR classifications (scenic / recreational), per Section 2(b) of the National Wild and Scenic Rivers Act is indication of the degree of development at the time of designation and how the segment will be administered, and that classification has little bearing impact analysis under Section 7(a) of the Act or NEPA. Language has been revised in this section and throughout the document to clarify that scenic and recreational are classifications per Section 2(b) of the Wild and Scenic Rivers Act.		
	Chapter 4.1.4., (page 4-12) Agency Coordination Regarding Section 7 Applicability, second		

<u>Chapter 4.1.4., (page 4-12) Agency Coordination Regarding Section 7 Applicability, second</u> paragraph: NPS provides two paragraphs of clarification on Section 7 language. **Text has been**



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,	revised in this section of Chapter 4.1.4 to clarify Section 7 language.
	<u>Chapter 4.1.4.</u> , <u>Preliminary Section 4(f) Involvement</u> : NPS recommends this section be a stand- alone topic and include Section 6(f) resources. Preliminary Section 4(f) involvement is denoted as a stand-alone topic by underlining in Chapter 4.1.4 and by its listing in the TOC , and information is reiterated as a stand-alone topic in Chapter 5.3.4. Section 6(f) resources are described in Chapter 5.4 .
	<u>Chapter 4.1.7., Threatened and Endangered Species, Mussels</u> : NPS recommends treating this as a stand-alone sub-heading, and provided factual information (4 points) for inclusion in the document. T&E mussels are treated as a separate topic in Chapter 4.1.7; NPS factual information was incorporated into this section, as appropriate.
	Chapter 4.1.11., Air Quality and Noise/Vibration, Noise Associated with Roadway Improvements: NPS comments that LMWSR should be included as a Category A receptor, and stated various reasons. The lower LMR in the project crossing vicinity has a recreational classification, but is not subject to on-going public use. As such, the river itself is not considered to be a Category A receptor under current federal guidelines. However, several public parks occurring along the Little Miami River floodplain, where active recreational activities take place (soccer fields, golf), are Category B receptors, including Clear Creek Park, Short Park, Little Miami Golf Center and Indian Valley Golf. As described in Chapter 4.1.11, the Tier I noise evaluation consisted of a preliminary screening only - to determine potential noise receptors, indicating areas of noise sensitivity - not necessarily impact. Detailed noise and vibration studies will be conducted during Tier 2 in accordance with all state and federal guidelines when alignments are further developed and receptors are more specifically identified. Noise and/or vibration abatement measures, if required, will be developed during the detailed design phase of a project and included in the final project plans.
	<u>Chapter 4.3., Cultural Resources</u> : NPS requests that the document indicate that NRHP is the Nation's official list of cultural resources identified as worthy of preservation and that administered by NPS. <i>This information has been added to Chapter 4.3 text for clarification to the lay reader.</i>
	NPS also notes that projects having effects on properties listed or eligible for NR listing must provide the Advisory Council on Historic Preservation and the appropriate SHPO office reasonable opportunity to comment, and requested consultation with SHPO and the Advisory Council to ensure Section 106 requirements are met. <i>SHPO was involved early in the Tier 1 work phase during development of the Tier 1 environmental work plans. It was determined during a strategy meeting held in August 2002 (and subsequent follow-up), and agreed upon between FHWA, ODOT and SHPO, that the SHPO would not be involved in review of the Eastern Corridor Tier 1 environmental document, but would become involved during Tier 2 of the project when more specific alignments were developed, direct impacts were better defined, and the need for affect determination(s) could be identified. SHPO was in concurrence with the strategy outlined regarding Tier 1 cultural resources studies, and attended an informal follow-up meeting on October 29, 2002, where the project team and cultural resources consultant staff provided an update on the preliminary findings of Tier 1 field cultural resources investigations.</i>
	<u>Chapter 5, Organization</u> : NPS expresses confusion about how chapter is organized, and reiterates need to review matrix of impacts for each alternative, and rigorous evaluation of alternatives. <i>Please see response to NPS comments Pages S-2 and S-9 (above).</i>
	NPS also comments that organizational arrangement of Section 4(f)/6(f) and Section 7 Wild and Scenic Rivers Act issues make it difficult to track impacts, and requests that LMWSR be discussed as a separate sub-section (with all of these issues included), and include discussion of ORVs. These topics are presented separately in the document as stand-alone NEPA issues, and the LMR happens to fall under numerous NEPA-related topics. For these reasons, the DEIS is thought to be best organized in its current format. Discussion of LMR ORVs as related to secondary and cumulative impacts is included in Chapter 5.6.
	<u>Chapter 5, Table 5.1</u> : NPS requests that LMWSR be included as an individual Environmental Impact Category, and be called out as a Category A receptor in the cell titled "Noise Associated



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	with Highway Improvements" and called out in the cell "Visually Sensitive Resources", and that this information be carried forward into the other impact tables in Chapter 5. Table 5.1 provides general descriptions of the categories of environmental features evaluated in the Tier 1 preliminary impact assessment, and the first category – USGS Streams – includes the LMR (in general, specific features are not call out anywhere in Table 5.1). The LMR is identified as a visually sensitive resource in the individual modal impact tables, including Table 5.4 (rail transit impacts) and Table 5.7 (highway impacts in Segment II/III). Please see response to NPS comment Chapter 4.1.11 regarding noise receptors.
	<u>Chapter 5.2.2., Key Environmental Issues for Area #2, LMR</u> : NPS provides clarification on language regarding LMR <i>designation</i> - i.e., it is a federally designated component of the National Wild and Scenic Rivers System per the Wild and Scenic Rivers Act, and therefore had values that are to be protected and enhances – and LMR <i>classification</i> – i.e., it is classified as recreational, which is an indication of the degree and kinds of development occurring at the time of designation. <i>Language has been revised in this section and throughout the document to clarify that scenic and recreational are <u>classifications</u> per Section 2(b) of the Wild and Scenic Rivers Act.</i>
	NPS also reiterates from the General Comments (paragraph 4) that impacts to ORVs be discussed and presented in terms of context, intensity and duration. <i>Preliminary evaluation of secondary and cumulative impacts to LMR ORVs is included in Chapter 5.6.</i>
	<u>Chapter 5.2.2, LMR, Water Quality Impacts</u> : NPS comments that indirect (short and long-term) and cumulative impacts be presented. Preliminary evaluation of secondary and cumulative impacts to water quality is included in Chapter 5.6 of the DEIS.
	<u>Chapter 5.2.2, LMR, Visual Resources</u> : NPS comments that a more rigorous and quantitative analysis is required that what is presented, including discussion of context, intensity, short and long-term, cumulative impacts, and visual simulations of the proposed bridge crossing. Recommends visual impacts be discussed as a stand-alone topic. <i>Bridge design and river crossing details will not be developed until Tier 2, at which time, visual impact assessment, as necessary, will be conducted following FHWA guidelines (Visual Impact Assessment for Highway Projects, Office of Environmental Policy, undated; Publication No. FHWA-HI-88-054), and mitigation will be developed, as necessary based on assessment of findings and agency coordination. Visual mitigation measures, if required, will be developed during the detailed design phase and included in the final project plans. Preliminary evaluation of cumulative impacts regarding the scenic/aesthetic value of the LMR is presented in Chapter 5.6.</i>
	<u>Chapter 5.2.2, Area #2, Section 4(f), 6(f) and Section 7 Issues</u> : NPS comments that this information be developed as independent section for each topic. <i>Individual topics are presented this way in Chapters 5.3.4, 5.4 and 5.5; they are only summarized here as they relate to impacts by multi-modal alternatives under consideration in this geographic area.</i>
	NPS comments that the pDEIS does not clearly demonstrate avoidance and minimization of impacts to Section 4(f) and Section 6(f) resources. <i>Tables 5.10 and 5.11 show, for each resource, avoidance and minimization alternatives based on preliminary corridors and evaluation conducted in Tier 1.</i>
	NPS also comments that a preliminary Section 7(a) determination of effects be included in the document. As noted in previous responses, coordination between ODOT, NPS, DOI and FHWA regarding Section 7 applicability, as summarized in a letter from ODOT to ODNR dated March 5, 2003, concluded that Section 7 would not apply to the mainstem of the Little Miami River at this time, assuming a clear span crossing of this feature and no impact to the bed or bank below Ordinary High Water. However, should further alignment development conducted during Tier 2 determine that instream work is needed on the LMR or tributaries, then Section 7 review may apply. As the project develops in Tier 2 and detailed bridge design and location are determined, any actions involving Section 7 will be monitored and fully coordinated with NPS, as applicable.
	<u>Chapter 5.2.2, Preliminary Mitigation Measures Under Consideration for the LMR</u> : NPS comments that a discussion of the predicted direct, indirect and cumulative impacts associated with mitigation measures be presented in order to understand merit. <i>Preliminary evaluation of</i>

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Table 6.1. Su	mmary of Agency Comments and Response to Comments
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,	secondary and cumulative impacts associated with proposed mitigation is included in Chapter 5.6 (a new DEIS section since circulation of the pDEIS).
	<u>Chapter 5.6.</u> Consequences of the No Build Alternative: NPS comments that this section lacks quantitative description of impacts (equal treatment). NPS also comments that comparison and contrasting of impacts with the preferred and other action alternatives be discussed. <i>The No Build alternative is always an option of consequence. The MIS work concluded that no-action was not an appropriate response to the transportation needs and goals of the region. Therefore, for the Tier 1 DEIS, the no-build scenario is considered a non-feasible alternative as a solution to the long-term transportation problem. Section 5.6 describes the summary-level consequences of a No Build Alternative. Because it would involve no new construction, a no build alternative would have essentially none of the potential primary impacts identified for the build alternatives, but would have adverse impacts in the secondary and cumulative categories.</i>
	NPS Section 4(f)/Section 6(f) Comments:
	Section 4(f): NPS requests coordination with SHPO, and that the final Section 4(f) documentation should include SHPO concurrence with findings and mitigation. <i>Please see response to NPS Comment Chapter 4.3 - Cultural Resources regarding SHPO coordination.</i>
	NPS also comments that Section 4(f) evaluation does not provide discussion of potential proximity impacts (increased noise and visual intrusion), and that Chapter 5.10 indicates that highway noise impacts to sensitive receptors (parks and recreation area) will be addressed in the noise analysis, but fails to mention other 4(f) resources. As discussed in Chapter 5.3.1, Tier 1 work involves identification of known Section 4(f) resources occurring within the feasible alternative corridors for planning purposes (i.e., Tier 1 alternative corridors were developed to avoid or minimize encroachment on such features to the extent practicable); further avoidance and minimization measures will be evaluated in Tier 2 when specific alignments are more fully developed, and detailed Section 4(f) analyses, including discussion of proximity impacts will be prepared at that time, as necessary.
	<u>Section 6(f)</u> : NPS comments that the project could have impacts to sites funded by the Land and Water Conservation Fund, and provides a listing of sites in Hamilton and Clermont Counties that have bee included in the L&WC program, along with an ODNR contact person who administers the program in Ohio. <i>The L&WC program director was contacted during preparation of the PDEIS, and the PDEIS notes that two sites funded by the L&WC program may be potentially impacted by the feasible alternatives under consideration, including Short Park and Eden Park Waterfront.</i>
	NPS also provides a list of sites for the City of Cincinnati who have obtained Urban Park and Recreation Recovery (UPARR) funding, along with a contact person with the Cincinnati Park Board for coordination purposes. <i>No UPARR sites occur within the feasible alternative corridors under consideration in Tier 1. A notation of this has been added to Chapter 5.4.</i>
	NPS Preliminary Section 7 Determination, Wild and Scenic Rivers Act Comments:
	NPS comments that all federal permits for "water resources projects" on the LMWSR or tributaries require NPS to prepare a Section 7 determination; construction activities occurring within the bed and/or bank of the river meet definition of water resource project; water resource projects that are determined to have a direct and adverse effect to any of the LMR values are expressly prohibited. NPS reiterates (from General Comment, Paragraph 7) that it is their preliminary Section 7 determination that construction of an additional multi-lane highway bridge meeting the definition of a water resources project and crossing the LMR would likely have a direct and adverse effect on the outstanding remarkable scenic and recreational values of the river. <i>Please see response to NPS General Comment, Paragraph 7.</i>
	If necessary, the NPS will provide a preliminary Section 7 document for inclusion in the DEIS and FEIS assuming all necessary information is provided, and will prepare a final Section 7 determination for all water resource projects as described in a Section 404 permit prepared for the project. As noted in previous responses, coordination between ODOT, NPS, DOI and FHWA regarding Section 7 applicability, as summarized in a letter from ODOT to ODNR dated March 5. 2003. concluded that Section 7 would not apply to the mainstem of the Little Miami



Table 6.1. \$	Summary (of Agency	Comments and	Response to Comments
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	River at this time, assuming a clear span crossing of this feature and no impact to the bed or bank below Ordinary High Water. However, should further alignment development conducted during Tier 2 determine that instream work is needed on the LMR or tributaries, then Section 7 review may apply. As the project develops in Tier 2 and crossing type and location are determined, any actions involving Section 7, as well as any other federal permits (such as a USCOE Section 404 permit), will be monitored and fully coordinated with NPS and the appropriate federal agencies, as applicable. At this time, a preliminary Section 7 determination for inclusion in the Tier 1 environmental document is not necessary.
	Other NPS Comments (page 15-16 of NPS letter):
	<u>Chapter 6.2.1., Agency Comments, Table 6.1</u> : NPS requests that all NPS comments be presented together in chronological order by agency, and that all NPS correspondences be included in this summary (including NPS letters submitted November 8, 2002 and August 26, 1997). Table 6.1 and Appendix C presents correspondence for the project in an overall chronological sequence - by date of letter, not by agency - to illustrate how project documentation and agency involvement has developed over time.
	Chapter 8.3.1, Summary of Expected Environmental Mitigation and Permit Requirements: NPS comments that list of bulleted items on page 8-8 should include Section 106 compliance separate from Section 4(f) evaluations. <i>Revised as noted.</i>
	<u>Chapter 8.3.2., Preliminary Environmental Mitigation Strategy</u> : NPS requests that a discussion of efforts to avoid LMWSR be included in the second paragraph and footnote. Not necessary; bridge crossing options evaluated during the MIS phase of work are summarized in Chapter 3.2.2.
	Table 8.3, Summary of Preliminary Environmental Commitments for Further Evaluation in Part B: NPS requests changing Part B to Tier 2. <i>Revised as noted throughout the document.</i>
	NPS also comments that this table should include preliminary environmental commitments resulting from preliminary/final Section 7 and/or Section 4(f)/6(f) consultations with NPS during Tier 1; all feasible and acceptable mitigation strategies should be documented. As noted in previous responses, coordination between ODOT, NPS, DOI and FHWA regarding Section 7 applicability, as summarized in a letter from ODOT to ODNR dated March 5, 2003, concluded that Section 7 would not apply to the mainstem of the Little Miami River at this time, assuming a clear span crossing of this feature and no impact to the bed or bank below Ordinary High Water. However, should further alignment development conducted during Tier 2 determine that instream work is needed on the LMR or tributaries, then Section 7 review may apply. As the project develops in Tier 2 and crossing type and location are determined, any actions involving Section 7, as well as any other federal actions requiring Section 4(f)/6(f) consultation, will be monitored and fully coordinated with NPS and the appropriate resource agencies, as applicable; these commitments are included in Table 8.1.
	Appendix D, List of Preparers and Reviewers: NPS comments that they should be listed. <i>Revised as noted.</i>
	<u>Appendix E, Distribution List</u> : NPS comments that USFWS should be included along with NPS under DOI. <i>Revised as noted.</i>
	NPS Summary Comments:
	<u>Paragraph 1 (page 16)</u> : NPS reiterates (from previous comments) that all avoidance alternatives, including Option2, be fully evaluated; inclusion of avoidance alternatives would allow comparison of each action alternative with respect to quantifiable environmental impacts, relative to the alternatives ability to meet all or portions of the stated purpose and need. <i>Please see responses to NPS General Comments, Paragraphs 3 and 5, and NPS comment regarding Chapter 3.2.2 (above) regarding avoidance alternatives.</i>
	NPS also comments the analysis of all action alternatives should fully consider the national significance of the LMWSR, and that the document should include an assessment of impacts



Table 6.1.	Summary	of Agency	Comments and Response to Comments	
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	(direct, indirect, cumulative) to the LMWSR; impacts should be discussed in terms of timing, duration and intensity and supported by quantitative data. <i>Preliminary evaluation of secondary and cumulative impacts to the LMR is included in Chapter 5.6. (a new DEIS section since circulation of the pDEIS).</i>
	Paragraph 2: NPS reiterates (from previous comments) that the LMR is protected under Section 7(a) of the National Wild and Scenic Rivers Act, and comments that should bridge construction or associated stormwater outfalls require either an ACOE Section 404 or 10 permit, a Section 7(a) evaluation will be required. NPS's preliminary determination (also from previous comments) is that an additional bridge constructed with piers and/or abutments in the bed or banks of the LMR would have a direct and adverse effect on the river's values; therefore, the ACOE cannot issue Section 404/10 permits associated with bridge components within the bed/banks of the LMR. As noted in previous responses, coordination between ODOT, NPS, DOI and FHWA regarding Section 7 applicability, as summarized in a letter from ODOT to ODNR dated March 5, 2003, concluded that Section 7 would not apply to the mainstem of the Little Miami River at this time, assuming a clear span crossing of this feature and no impact to the bed or bank below Ordinary High Water. However, should further alignment development conducted during Tier 2 determine that instream work is needed on the LMR or tributaries, then Section 7 review may apply. As the project develops in Tier 2 and crossing type and location are determined, any actions involving Section 7, as well as any other federal permits (such as a USCOE Section 404 permit), will be monitored and fully coordinated with NPS and the appropriate federal agencies, as applicable.
	Paragraph 3: NPS requests a separate chapter addressing Section 4(f)/6(f) resources and comments that if Section 4(f) resources are used/impacted, the Tier 1 DEIS must contain a Section 4(f)/6(f) evaluation. As a preliminary 4(f) evaluation, NPS does not concur that there are no prudent and feasible alternatives to additional use of the LMWSR. Absent discussion of alternatives for use of other Section 4(f) resources, NPS is not able to concur with both provisions of the DOT's Act regarding use of Section 4(f) resources. NPS comments that SHPO and the Advisory Council, if necessary, should be involved in discussions involving impacts or mitigation on NR listed or eligible properties. As discussed in previous responses (NPS Comment Section 4(f) and NPS Comment Chapter 4.3), and as described in Chapter 5.3.1, Tier 1 work involves identification of known Section 4(f) resources occurring within the feasible alternative corridors for planning purposes (i.e., Tier 1 alternative corridors were developed to avoid or minimize encroachment on such features to the extent practicable); further avoidance and minimization measures will be evaluated in Tier 2 when specific alignments are more fully developed, and detailed Section 4(f)/6(f) analyses, will be prepared at that time, as necessary. SHPO was involved early in the Tier 1 work phase during development of the Tier 1 environmental work plans. It was determined during a strategy meeting held in August 2002 and subsequent follow-up, and agreed upon between FHWA, ODDT and SHPO, that the SHPO would not be involved in review of the Eastern Corridor Tier 1 environments were developed, direct impacts were better defined, and the need for affect determination(s) and Section 4(f) analyses could be identified.
U. S. Coast Guard, 8 th Coast Guard District, Bridge Branch	US Coast Guard has determined that the project is not a waterway over which the Coast Guard exercises jurisdiction for bridge administration purposes, and concludes that a Coast Guard bridge permit is not required. <i>No response needed.</i>
June 16, 2004 (email) June 22, 2004 (note)	
RE: Review of Tier 1 pDEIS	
United States Department of the Interior Fish and Wildlife Service to Ohio Department of Transportation June 18, 2004 (letter) RE: Review of Tier 1 pDEIS	Paragraphs 1-4: USFWS reviewed the Eastern Corridor pDEIS, as well as comments on the pDEIS from ODNR (May, 2004 email), NPS (May 27, 2004 letter), and OEPA (May 4, 2004 letter). USFWS shares OEPA's and NPS's position of recommending improvements or expansions of existing bridges across the LMR rather than constructing a new one. As noted in the responses to NPS May 27, 2004 comments on the pDEIS presented above, the framework for Eastern Corridor Tier 1 alternatives development was the multi-modal recommendations that evolved out of the Eastern Corridor MIS process. The Eastern Corridor MIS involved input and decision-making from an approximately 60-member MIS task force that included representatives from OKI (the regional MPO) federal and state transportation agencies 18
	representatives from OKI (the regional MPO), federal and state transportation agencies, 18 local political subdivisions, resource agencies (including ODNR Scenic Rivers), and local business leaders. A variety of alternatives and preliminary concepts for addressing



Agency and Date (copies of letters in Appendix C)	Summary of Agency Comments and Response or Decision <i>(in bolded italics)</i>
	current and projected transportation problems were evaluated during the MIS phase, including subcommittee review of river crossing options, as summarized in Chapter 3.2.2 of the DEIS and documented in the Eastern Corridor MIS report. The conclusion reached by the task force at the end of the MIS process was that the best solution for addressing transportation need in the Eastern Corridor consisted of a multi-modal plan - the MIS Recommended Plan - that included as part of the highway component, a relocated SR 32 alternative on new alignment from the Eastgate area to US 50 in Fairfax, and that included a new Little Miami River crossing near Red Bank Road/US 50.
	<u>Paragraph 5:</u> USFWS recommends that partial compensatory mitigation for the project focus on restoring and/or preserving native vegetation in the floodplains of the LMR and East Fork, and supports "stream daylighting" for stream restoration. The preliminary mitigation strategy for the Eastern Corridor, discussed in Chapter 8.3.2, provides opportunity for these types of mitigation components; mitigation details will be further developed in Tier 2, and fully evaluated and coordinated through the 404/401 permit process.
	Paragraph 6: USFWS notes that the emphasis on the fish and wildlife resource values and local community efforts to preserve the LMR ORVs should not be lost during the planning of multi- modal transportation improvements. As noted in Chapter 8.3.2 as well as other areas in the DEIS, river crossing and other greenspace and corridor preservation issues were emphasized by the MIS task force and the public during both the Eastern Corridor MIS work phase and Eastern Corridor Land Use Vision process. Priority needs identified for the area included items such as preservation of land in the river plains for agriculture or open space, re-establishment of forested streamside corridors for preservation and enhancement of water quality, preservation of wooded hillsides, floodplain protection, and moderation of stormwater runoff. In addition, resource agencies that have been involved with the Eastern Corridor through Tier 1 have emphasized that minimization and mitigation be developed, and for resources such as the Little Miami River, outlined strategies for further consideration and development. Therefore, it has been recognized from the beginning of the Eastern Corridor project that emphasis be placed on protecting the LMR and other environmentally sensitive resources in the area. There is expectation by the project stakeholders, local communities, and resource agencies that this commitment for protecting the LMR be carried forward through Tier 1 of the Eastern Corridor work phase to continued, more detailed mitigation development in Tier 2, as noted in Chapter 8.3.2 and Table 8.3 of this DEIS.
	<u>Paragraph 7:</u> USFWS notes that the LMR supports a diverse terrestrial and aquatic fauna, and concurs with NPS that emphasis be placed on the mussel fauna of the LMR. Secondary source <i>information regarding mussels in the LMR drainage are presented in Chapter 4.1.7.</i> Additional, more detailed field studies, including mussel studies, as appropriate, will be conducted in Tier 2 when further alignment details for feasible alternatives are developed and a preferred crossing location is identified.
	<u>Paragraph 8</u> : USFWS lists species groups from the LMR and East Fork drainages that have various state T&E status, as provided by ODNR. T&E information included for the LMR in Chapter 4.1.4 of the DEIS (LMR, Threatened and Endangered Species) is from ODNR, but total number of species reported in this chapter only includes species records from the LMR within the project study area - not the total drainage area.
	USFWS Updated Federally Listed and Candidate Species Comments: USFWS noted that the project lies within the range of the federal endangered Indiana bat, running buffalo clover, and bald eagle, and recommends mitigation strategies, including: 1) the saving of potential Indiana bat trees where possible, and restrictive cutting where unavoidable, 2) possible mist netting depending on the amount of potential habitat to be impacted, 3) field surveys for running buffalo clover and 4) restrictive work near bald eagle nests, if located within ½ mile of the project. USFWS also noted that the project is within the range of two federal candidate mussels, including rayed bean mussel and sheepnose mussel, and recommends that the LMR and East Fork be surveyed for mussels prior to the initiation of the project. <i>As presented in Table 8.3 of this DEIS, field surveys to determine the occurrence of populations or potential habitat for federal and state listed species will be conducted in Tier 2 on a project-by-project basis, specifically for Indiana bat, running buffalo clover, bald eagle and/or mussel surveys, as appropriate. All required coordination and mitigation will be conducted as necessary for compliance with provisions of the Fish and Wildlife Coordination Act (48 stat. 401. as</i>



Agency and Date (copies of letters in Appendix C)	Summary of Agency Comments and Response or Decision <i>(in bolded italics)</i>	
	amended; 16 USC 661 et seq.), Section 7 of the Endangered Species Act of 1973, as amended, and the U.S Fish and Wildlife Service's Mitigation Policy. Specific avoidance and minimization measures will be developed following agency coordination, and incorporated into final project plans, as necessary. Updated information regarding federal candidate mussels has been added to Chapter 4.1.7 of the DEIS.	
	<u>USFWS Recommendations for the Eastern Corridor Multi-Modal Projects:</u> USFWS lists five recommendations for the project related to: 1) minimization of impacts to fish and wildlife resources of the LMR, 2) minimization of water quality impacts by use of best construction and management practices, 3) maximization of efforts to protect or restore stream corridor or floodplain areas along the LMR, 4) full coordination with USFWS on all future plans regarding fish and wildlife resources, including mitigation plans, and 5) if a river crossing is not avoidable, USFWS recommends that the crossing be designed to avoid impacting the stream and floodplain, if possible. The preliminary mitigation strategy for the Eastern Corridor, discussed in Chapter 8.3.2, and the preliminary environmental commitments listed in Table 8.3, provide opportunity for these types of mitigation strategies; mitigation details will be further developed in Tier 2, and fully evaluated and coordinated through the 404/401 permit process, and with USFWS and other federal agencies, as applicable.	



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CHAPTER 7 IMPLEMENTATION CONSIDERATIONS



CHAPTER 7 IMPLEMENTATION CONSIDERATIONS

This chapter of the DEIS describes the factors considered in determining how the multi-modal transportation plan for the Eastern Corridor will be implemented. It includes a summary of preliminary performance (modeling) results, preliminary cost estimate information by mode, and description of the implementation approach and financial strategy being developed for eventual construction of the Eastern Corridor multi-modal plan components.

7.1. PERFORMANCE (RTDM MODELING) RESULTS

Travel demand forecasting conducted for the project used the OKI/Miami Valley Regional Planning Commission [MVRPC] Travel Demand Model (RTDM), Version 6.0, which was updated for the Eastern Corridor study to include enhancements from work associated with the I-75 Corridor study, and incorporation of specific future land use information developed for the Eastern Corridor as part of the land use vision work (Eastern Corridor Land Use Vision Plan, May 2002). The Tier 1 RTDM work (i.e., the modeling work conducted for information presented in this DEIS) used the Version 6.0 model to assist in the evaluation the effectiveness of various mode elements and multi-modal scenarios (using a 2030 horizon year) of the multi-modal plan.

The RTDM work conducted in Tier 1 consisted of an incremental build up of model runs by transportation mode group, as noted below (abbreviations used in this document are shown in parentheses):

- Existing + Committed (E + C)
- Regional Baseline (RB)
- Transportation System Management (TSM)
- Expanded Bus (EB)
- Rail Transit (RT)
- Highway Multi-Modal Plan (MMP) (corresponds to the MIS recommended multi-modal plan, and the intent of the action outlined in this DEIS)
- Multi-Modal Plan with Land Use Vision Plan (MMPLUVP)

A description of the transportation components included in each of these model runs is provided in Section 7.1.1. Only the MMP (including MMPLUVP) configuration is consistent with the intended action of this DEIS, based on ability to meet purpose and need and public input. The other model runs were conducted to help understand the role of each mode group in moving the multi-modal plan forward.

Output from these model runs was compiled for on two levels, corridor-level (within the Eastern Corridor only) and regional-level (the entire three-state, eight county OKI region):

 The <u>Eastern Corridor</u>: For measurables expressed in trips, model output represents trips or riders beginning and ending within the broad two-county Eastern Corridor area (corresponding to OKI Districts 1 through 4). For measurables such as Vehicle Hours of Travel or Vehicle Miles of Travel, the reported model output represents only road segments within the Eastern Corridor area (not the



larger regional network).

2) The <u>OKI Region</u>: Model output represents trips or riders beginning and ending within the entire eight county OKI region, and includes all road segments within the OKI region.

Key output parameters included transit share (as percent of total person trips), Vehicle Hours of Travel (VHT), Vehicle Hours of Delay (VHD), and Vehicle Miles of Travel (VMT).

7.1.1. Model Run Summaries

RTDM work for Tier 1 is still under development, review and final documentation. Any substantive updates or revisions to these results will be reported in the Final Environmental Impact Statement. Model run descriptions and a summary of key RTDM output to date are presented below by run.

1. Existing + Committed (E + C)

Included in this analysis was evaluation of the existing roadway and transit network, plus committed regional and state improvements (TIP and STIP projects). No regional rail corridor (I-71 LRT or other) was included. Also, the E+C run does not include any major new capacity improvements within the Eastern Corridor, highway or transit.

Summary of Key RTDM Output:

- Eastern Corridor person trips = 508,000
- Region person trips = 6,669,000
- Eastern Corridor transit share = 2.2%
- Region transit share = 1.1%

Output from the E + C model run was used as the baseline for comparison of modal and multimodal model results.

2. Regional Baseline (RB)

Included in this analysis was evaluation of E + C (with TIP/STIP projects as noted above), plus other selected reasonable and foreseeable major transportation system management (TSM) and capacity improvement projects (highway and bus, but no rail). The Regional Baseline content was developed by OKI in coordination with the regional highway and transit agencies, and is a scenario used in comparative evaluations by the Federal Transit Administration. The same Regional Baseline makeup is being used in other current regional transportation studies (I-75 study).

Summary of Key RTDM Output:

- Generally no change from E + C
- Eastern Corridor transit share = 2.2%
- Region transit share = 1.1%



3. Transportation System Management (TSM)

Included in this analysis was evaluation of E + C, RB, and an expanded range of existing system improvements within the Eastern Corridor. No rail transit was included in this model run.

Summary of Key RTDM Output:

- Eastern Corridor: TSM reduces VHT and VHD by 1,000+ hours and VMT by 8,000 miles
- Region: TSM reduces VHT and VHD by about 1,000 hours and VMT by 16,000 miles
- Output indicates that most TSM benefit occurs within the Eastern Corridor area; helps with spot problems within the network

4. Expanded Bus (EB)

Included in this analysis was evaluation of E + C, RB, TSM, and expanded primary and secondary bus service linked to six new transit hubs with express service and local circulators. No rail transit was included in this model run.

Summary of Key RTDM Output:

- Eastern Corridor transit share increases from 2.2% to 2.7% (14,000 trips)
- Regional transit share: no substantial change (about 76,000 trips)
- Eastern Corridor: EB reduces VHT, VHD by 5,000 hours and VMT by 45,000 miles
- Region: EB reduces VHT and VHD by 4-6,000 hours and VMT by 75,000 miles
- Output indicates that most EB benefit is within the Eastern Corridor; not much existing network help in terms of congestion relief

5. Rail Transit (RT)

Included in this analysis was evaluation of E + C, RB, TSM, EB, and one rail line in the Eastern Corridor (five rail combination options were evaluated; see below), with the expanded bus (EB) network modified to perform rail feeder function. This model run also included the planned I-71 Light Rail Transit (LRT) service (from northern Kentucky to Blue Ash). Five different Eastern Corridor rail lines were individually evaluated in this set of model runs, as follows:

- 1) Oasis Line from downtown to Milford,
- 2) Wasson Line from Xavier to Eastgate,
- 3) Wasson single seat from downtown to Eastgate,
- 4) Oasis cross from downtown to Eastgate, and
- 5) Wasson cross from downtown to Milford.

This set of model runs consisted of two general categories of transit ridership measure, including:

1) <u>Unlinked trips</u>, which provide an estimate of ridership *per individual transit line* (e.g., I-71 LRT versus Oasis Line) where trips with transfer are counted under each line used in making the total trip from origin to destination, and



2) <u>Linked trips</u>, which provide an estimate of ridership *per transit mode*, where transfer trips are counted only once under the highest mode (rail=highest, local bus lowest).

Trips reported as Eastern Corridor rail trips are linked trips with both origin and destination within Districts 1-4. In general, unlinked trips describe activity, whereas linked trips (whole trips) are an overall better indicator of the transit role in a multi-modal network.

Model output for rail are presented in Table 7.1 (unlinked versus linked trips), Table 7.2 (modeling results for the Eastern Corridor) and Table 7.3 (modeling results for the OKI region) below:

	Unlinke	ed Trips	Linked Trips		
Rail Alternative	Rail Trips	s per Line	Total	Total Decion	Eastern
	I-71 LRT	Oasis / Wasson	Region Rail Trips	Total Region Transit Trips	Corridor Rail Trips ^[1]
Oasis (Milford)	27,900	5,422	30,555	101,673	5,925
Oasis Cross (Eastgate)	28,044	5,617	30,768	102,430	5,991
Wasson (Eastgate)	30,379	8,134	32,202	103,168	6,456
Wasson Single Seat (Eastgate)	22,478	14,274	34,733	105,161	7,120
Wasson Single Seat Cross (Milford)	22,333	13,145	33,715	103,363	6,712
[1] "Eastern Corridor Ra	il Trips" are define	ed as rail person	trips with both origin	and destination in Di	stricts 1 through 4

Table 7.1. Rail Modeling Output – Unlinked Versus Linked Trips

Table 7.2. Rail Modeling Output – Eastern Corridor Area Total Daily Year 2030

	E+C	Oasis	Oasis Cross (Eastgate)	Wasson Transfer	Wasson Single Seat (Eastgate)	Wasson Single Seat Cross (Milford)
EC Person Trips	507,995	504,792	504,761	504,009	504,261	504,329
EC Car Person Trips	496,642	487,954	487,796	487,051	486,779	487,496
EC Rail Trips	0	5,925	5,991	6,456	7,120	6,712
EC Transit Trips	11,353	16,838	16,965	16,958	17,482	16,833
EC Transit Share EC Vehicle Hours	2.2%	3.3%	3.4%	3.4%	3.5%	3.3%
of Travel	310,211	303,621	302,800	303,735	303,262	304,235
Change from E + C		-6,590	-7,411	-6,476	-6,949	-5,976
EC Vehicle Hours of Delay	132,904	127,713	127,008	127,842	127,706	128,399
Change from E + C		-5,191	-5,896	-5,062	-5, 198	-4,505



	5.0	Ossia	Oasis Cross	Wasson	Wasson Single Seat	Wasson Single Seat Cross
	E + C	Oasis	(Eastgate)	Transfer	(Eastgate)	(Milford)
EC Vehicle Miles of Travel	8,110,810	8,038,666	8,033,498	8,035,324	8,022,811	8,032,426
Change from E + C		-72,144	-77,312	-75,486	-87,999	-78,384

Table 7.2. Rail Modeling Output – Eastern Corridor Area Total Daily Year 2030

Table 7.3. Rail Modeling Output – OKI Region Total Daily Year 2030

	E+C	Oasis	Oasis Cross (Eastgate)	Wasson Transfer	Wasson Single Seat (Eastgate)	Wasson Single Seat Cross (Milford)
Person Trips	6,668,683	6,667,340	6,667,274	6,667,583	6,667,343	6,667,459
Car Person Trips	6,597,573	6,565,667	6,564,844	6,564,415	6,562,182	6,564,096
Rail Trips	0	30,555	30,768	32,202	34,733	33,715
Transit Trips	71,110	101,673	102,430	103,168	105,161	103,363
Transit Share	1.1%	1.5%	1.5%	1.5%	1.6%	1.6%
Oasis or Wasson Boardings	0	5,422	5,617	8,134	14,273	13,145
Vehicle Hours of Travel	1,776,566	1,763,691	1,762,572	1,762,216	1,761,050	1,763,776
Change from E + C		-12,875	-13,994	-14,350	-15,516	-12,790
Vehicle Hours of Delay	507,265	498,407	497,797	497,466	496,969	498,588
Change from E + C		-8,858	-9,468	-9,799	-10,296	-8,677
Vehicle Miles of Travel	57,150,298	56,961,814	56,947,79 4	56,939,98 7	56,915,82 3	56,954,14 8
Change from E + C		-188,484	-202,504	-210,311	-234,475	-196,150

A summary of key findings from these rail transit-modeling results is presented below.

Summary of KEY RTDM Output:

- For unlinked trips of unconstrained origin or destination, the I-71 LRT part of the rail network (the I-71 project is not part of this DEIS action) would carry more passengers than either the Oasis or Wasson lines (61% to 79% more). With the I-71 LRT project in place, the Oasis Line would carry about 16% of all unlinked rail trips in the OKI region, and the Wasson Line would carry between 21% and 39%.
- For unlinked trips of unconstrained origin or destination, there would be about 50% more passenger boardings on the Wasson Line (using Eastgate Transfer option, including I-71 LRT) than the Oasis Line on a daily basis (higher under the Wasson Single Seat option).



- For unlinked trips with the Wasson Line (Eastgate Transfer), the I-71 LRT would gain about 2,500 passenger boardings, most of which are transfers from the Wasson Line at Xavier/Evanston. For the Wasson Single Seat, however, the I-71 LRT would lose more than 5,400 trips, as less transfer from the Eastern Corridor Line would be needed and the Wasson Line would compete directly for unlinked trips with I-71 LRT in the area from Xavier north and south to downtown Cincinnati.
- On a regional basis, the Oasis or Wasson rail transit options, in combination with the I-71 LRT project, would result in 31,000 to 35,000 total rail transit trips (including I-71) and 102,000 to 105,000 total transit trips (rail + bus) each day in the region. The higher end of the range would be for the Wasson options.
- For both the Wasson and Oasis rail lines, an alignment terminating in Eastgate would result in only slightly higher rail trips or ridership than one terminating at Milford.
- Within the Eastern Corridor, linked trips are similar for both the Wasson and Oasis lines, generally between 6,000 and 7,000 linked trips daily.
- Regarding effect on existing traffic, model results indicate that rail (any option) would reduce car person trips by 9,000-10,000 in the Eastern Corridor and 32,000-35,000 in the OKI region.
- With rail, the Eastern Corridor transit share increases from 2.2% to 3.3-3.5%, with a peak share for transit at about 5%.
- With rail, the OKI region transit share increases from 1.1% to 1.5-1.6%.
- With rail, VHT and VHD in the Eastern Corridor decrease by about 5,000-7,000 hours and VMT decreases by 72,000-88,000 miles.
- With rail, VHT and VHD in the OKI region decrease by 9,000-15,000 hours and VMT decreases by 188,000-234,000 miles.
- Overall, these model results for rail indicate that: a) most regional rail benefit is outside the Eastern Corridor (due to the I-71 LRT role), b) benefits within the Eastern Corridor are similar for both the Oasis and Wasson Lines, c) rail is a solid contributor of transit share, with bus being an important part of the rail transit, and d) rail does provide some benefit to existing congestion and capacity problems (as evidenced by VHT and VHD results).

6. Highway Multi-Modal Plan (MMP)

Included in this analysis was evaluation of E + C, RB, TSM, EB, RT (assuming Oasis Line) and new SR 32 from I-71 to I-275 (a moderate capacity, controlled access highway). Model outputs for MMP are presented in Table 7.4 and a summary of key findings follows.



Table 7.4.	Highway	Multi-Modal	Plan (MMP)	Modeling Output –
		Total Daily	Year 2030	

	Eastern Corridor		OKI R	egion
	E+C	MMP	E + C	MMP
Person Trips	507,995	505,440	6,668,683	6,667,298
Car Person Trips	496,642	488,275	6,597,573	6,566,163
Rail Trips	0	6,227	0	30,849
Transit Trips	11,353	17,165	71,110	101,135
Transit Share	2.2%	3.4%	1.1%	1.5%
Vehicle Hours of Travel	310,211	301,802	1,776,566	1,755,915
Change from E + C		-8,409		-20,651
Vehicle Hours of Delay	132,904	124,425	507,265	491,549
Change from E + C		-8,479		-15,716
Vehicle Miles of Travel	8,110,810	8,203,880	57,150,298	57,013,149
Change from E + C		93,070		-137,149

Summary of Key RTDM Output (MMP):

- With the multi-modal plan (compared to the previous RT run), transit share stays around 3.4% in the Eastern Corridor, about 1.5% in the OKI region, and at about 5% for peak hours.
- With the multi-modal plan, VHT and VHD decrease by 8,000 in the Eastern Corridor and 16,000-21,000 in the OKI region.
- With the multi-modal plan, VMT in the Eastern Corridor increases by 93,000, but decreases by 137,000 in the overall OKI region.
- Overall, these model results for the multi-modal plan indicate that: a) inclusion of highway in the MMP does not hurt transit usage, b) the multi-modal plan new highway capacity relieves some congestion and capacity problem areas by placing pent-up demand volumes on facilities better able to accommodate that travel, c) the multi-modal plan reduces traffic on several key routes, including I-275 (3-8% reduction in traffic), I-471 (5% reduction in traffic), SR 561 (2-19% reduction in traffic) and Five Mile Road (7-8% reduction in traffic), and d) the multi-modal plan reduces through traffic in several communities, including Mt. Lookout, Madisonville, Newtown, Mt. Carmel and Mt. Washington.

7. Multi-Modal Plan with Land Use Vision Plan

Included in this model run was the Multi-Modal Plan as described above (TSM + Bus + Rail + Highway) and the Eastern Corridor land use vision plan with a 2030 market constraint forecast using the following two assumptions: 1) no net increase in population and employment for the OKI region over the OKI 2030 forecast and 2) a significant increase in the Eastern Corridor (including downtown Cincinnati), including 12,800+ jobs and 25,000+ population over the OKI 2030 forecast. Summaries of key findings from this model run are presented below.



Summary of Key RTDM Output (MMP with Land Use Vision):

- With the Eastern Corridor land use vision plan (ECLUVP), transit share (compared to MMP) increases from 3.4% to 3.7% in the Eastern Corridor, and from 1.5% to 1.7% in the OKI region.
- Rail ridership increases from 6,000 to 8,000 in the Eastern Corridor and from 31,000 to 36,000 in the OKI region.
- The LUVP reduces average car trip time in the region by about 1.5%. This amounts to regional travel timesavings of 9.6 million hours per year due to beneficial land use changes.

7.1.2. Summary of Findings

Evaluation of output from the model runs described above indicate the following key findings:

- The Eastern Corridor Multi-Modal Plan (MMP) provides broad transportation benefits to both the Eastern Corridor area and the OKI region.
- Transit on all levels plays an important role in the beneficial outcomes, with peak transit usage in the Eastern Corridor approaching 5%.
- Highway, and to some extent, TSM investments are important to addressing basic travel efficiency problems for most trips.
- Rail transit ridership is not hurt by the highway components of the Multi-Modal Plan.
- The basic ridership numbers for the various rail transit options (Wasson and Oasis Lines) are similar within the Eastern Corridor.
- The Eastern Corridor land use vision plan allows increases in population and employment within the corridor to be accommodated while decreasing average time and travel in the region.
- The Eastern Corridor land use vision plan increases projected transit use in the Multi-Modal Plan.
- The Multi-Modal Plan provides capacity relief for important parts of the regional transportation network and a sound framework for meeting all elements of the described project purpose and need.

7.2. PRELIMINARY COST ESTIMATES

7.2.1. Estimated Costs

Estimated capital and operation and maintenance (O&M) costs for the proposed multi-modal components of the Eastern Corridor are summarized below:

Multi-Modal Project	Estimated Capital Outlay	O&M Cost (annual)
TSM ^[1] Expanded Bus System Highway w/ Transitway Oasis Rail Transit	<pre>\$ 45,100,000 \$ 49,380,000 \$506,060,200 \$410,752,000</pre>	n/a ^[2] \$21,000,000 ^[3] \$ 950,000 \$18,911,000



Wasson Rail Transit^[4]

\$308,567,000

\$ 7,700,000

^[1] Estimated capital cost for TSM will change as financial strategy plan is finalized and local programs, actions, and priorities for TSM improvements are refined.

^[2] O&M Costs for TSM assumed within local sponsor existing budgets.

^[3] O&M Costs for Expanded Bus uses mid-range estimate.

^[4] The Wasson Rail transit is scheduled as an extension of the I-71 LRT.

7.2.2. Preliminary Funding Assumptions and Requirements

Preliminary federal, state and local funding share assumptions for Capital and O&M costs for the multimodal projects are as follows:

Multimodal	Capital Cost Share		are	O&M Cost Share (annual)			
<u>Project</u>	Federal	State	Local	Federal	State	Local	
TSM	0%	0%	100%	0%	0%	100%	
Expanded Bus System	50%	0%	50%	50%	0%	50%	
Highway w/ Transit-way ^[1]	78%	11%	11%	0%	100%	0%	
Rail Transit	50%	25%	25%	0%	0%	100%	

^[1] Capital cost for Highway w/ Transitway assumes 50% Federal, 25% State and 25% Local share for the transitway cost element of this highway alternative.

Summarized below are the amounts of federal, state and local resources required to construct, operate and maintain the Eastern Corridor Multimodal Projects under the funding source assumptions noted above:

Capital Funding for Multimodal Projects	Federal Share	State Share	Local Share	<u>Total</u>
TSM ^[1]	\$ 0	\$0	\$ 45,100,000	\$ 45,100,000
Expanded Bus System	\$ 24,690,000	\$0	\$ 24,690,000	\$ 49,380,000
Highway w/ Transit-way	\$ 393,228,000	\$56,416,100	\$ 56,416,100	\$ 506,060,200
Oasis Rail Transit	\$ 205,376,000	\$102,688,000	\$ 102,688,000	\$ 410,752,000
Wasson Rail Transit ^[3]	\$ 154,283,500	<u>\$77,141,750</u>	\$ 77,141,750	\$ 308,567,000
Total	\$ 777,577,500	\$236,245,850	\$ 306,035,850	\$1,319,859,200

O&M Funding for Multimodal Projects ^[2]	Federal Share	St	ate Share	<u>Lc</u>	ocal Share	<u>Tc</u>	otal
Expanded Bus System Highway Oasis Rail Transit Wasson Rail Transit ^[3] Total	\$ 10,500,000 \$ 0 \$ 0 \$ 0 \$ 0 \$ 10,500,000	\$ \$ \$ \$	0 950,000 0 950,000	\$ \$ \$ \$ \$ \$	10,500,000 0 18,911,000 7,700,000 37,111,000	\$ \$ \$ \$ \$ \$	21,000,000 950,000 18,911,000 7,700,000 48,561,000

^[1] Estimated capital cost for TSM will change as financial strategy plan is finalized and local programs, actions, and priorities for TSM improvements are refined.

^[2]O&M Costs for TSM assumed within local sponsor existing budgets.

^[3] The Wasson Rail transit is scheduled as an extension of the I-71 LRT.



7.3. IMPLEMENTATION APPROACH AND FINANCIAL STRATEGY

The Tier 1 work presented in this DEIS recommends a series of corridor-wide transportation improvements, focusing on broad issues such as general corridor location by mode, performance, and preliminary environmental impacts. The Tier 1 work also describes portions of the transportation improvements that have independent utility - meaning logical points for breaking the overall project into smaller, discrete portions that are logical from a land use, transportation and environmental perspective.

Once the Tier 1 environmental process is completed and Record of Decision approved, the Eastern Corridor project will continue with a series of separate Tier 2 environmental and design studies for each of the identified independent utility sections and/or modes. As each Tier 2 environmental document is completed and approved, then final design and construction would begin for that project section. As such, the project will be constructed in segments incrementally over time (long-term) until all parts of the multi-modal plan are in place.

Chapter 7.4 below describes the strategies recommended for the long-term implementation of the Eastern Corridor multi-modal plan. This implementation approach and financial strategy is outlined in Tier 1, and specific details will be further developed during Tier 2, in conjunction with jurisdictional benefit/cost work and other Tier 2 engineering and environmental studies.

7.3.1. Project Phasing

The Eastern Corridor Multimodal Projects are scheduled for completion over a ten-year period beginning in 2005, as summarized below:

<u>Multi-Modal Project</u>	Construction Period	Opening Year
	0005 0000	0000
TSM	2005 – 2008	2009
Expanded Bus System	2005 – 2010	2011
Highway w/ Transitway	2007 – 2011	2012
Oasis Rail Transit	2005 – 2013	2014
Wasson Rail Transit	2008 – 2014	2014 ^[1]

^[1] The Wasson Rail transit is scheduled as an extension of the I-71 LRT, and is dependent upon its implementation; see below.

Service is planned to be introduced incrementally as follows:

- Transportation System Management (TSM) projects match up with highway, expanded bus and rail transit modal construction, and can begin in 2005 with completion in 2008;
- Expanded Bus Transit can be phased with other modal implementation beginning in 2005 through 2010;
- Highway can be phased in four segments beginning in 2007, with the I-275/SR 32 interchange (Eastgate area) and Red Bank Road (I-71 to US 50) improvements in place by 2010, and relocated SR 32 from US 50 to Newtown Road, and Newtown Road to Eastgate completed by 2011;



- The Oasis Rail Transit Line can be phased in two segments beginning in 2005, with the downtown Cincinnati to Newtown section in place by 2010, and the Newtown to Milford section in place by 2013; and
- The Wasson Rail Transit Line is scheduled as an extension of the planned I-71 LRT, and is dependent upon implementation of the I-71 LRT for function and system linkage consistent with project purpose and need. A separate NEPA action will be required for the I-71 LRT project and, although a preliminary DEIS has been prepared, there currently is no plan to further project development due to funding uncertainties. As such, the current recommendation in this action for the Eastern Corridor is that the Wasson alternative, as recommended in the MIS, be part of the long-term framework with no immediate action in project development other than preservation of existing rail right-of-way for future transportation purposes. This information is reiterated in Chapter 8.1.

7.3.2. Implementation Approach

Principles for Project Development

The proposed Eastern Corridor transportation improvements include major investments in four modal categories (bus transit, rail transit, highway, and transportation system management, including bike and pedestrian modes) occurring over multiple jurisdictions, and being constructed in segments incrementally over a long-term (expected ten-year) period.

Implementing such a project requires an innovative approach that outlines strategies for coordinating, phasing and managing financial investments, community priorities, and land use and development issues across jurisdictional boundaries.

Overall, the Eastern Corridor land use vision plan established the framework for community development (desired land use) in the Eastern Corridor, and the Tier 1 work identified which modal components are best suited for the establishing the transportation framework of the area. Both components of the Eastern Corridor (community development and transportation) should be integrated in the overall long-term program for the area, and leveraged within the entire funding strategy.

Specific principles for successfully implementing the project that are consistent with the overall plan for the Eastern Corridor include the following:

- Accomplish regional and local goals simultaneously;
- Create context-sensitive design through working with local jurisdictions;
- Identify all potential funding sources and create strategic joint funding plans;
- Package community development and conservation initiatives with transportation projects to leverage funds; and
- Develop guidelines and incentives for economic development, access management, community development, and open space to support the overall corridor land use goals and to establish future transportation efficiencies.

Two-Part Implementation Approach

Based on these development principles, a two-part implementation approach for of the Eastern Corridor is recommended:



- Corridor Wide Implementation pursue specific steps and projects that will ensure development of the overall corridor transportation plan, as identified from the Tier 1 work program (i.e., projects recommended for further development in Tier 2), and
- Target Specific Local Projects support development of specific locally motivated, independent utility projects (i.e. "bite-sized" pieces). Targeted local projects should be those that fit within the overall Eastern Corridor plan and, once pieced together, start to resemble the overall corridor concept.

These two approaches are not mutually exclusive, but both are essential to leveraging funding for implementation of the corridor-wide plan, and will be pursued simultaneously. For example, many local projects can be completed early-on, before some of the long-term, corridor-wide efforts are in place. These early start projects will not only integrate with the overall corridor plan, but will be developed to establish a local match component in order to secure state and federal funding sources and leverage private and other public investments for the longer-term corridor-wide projects.

7.3.3. Financial Strategy

The financial strategy for the Eastern Corridor will need to incorporate a new way of approaching, managing and leveraging mutually beneficial actions across jurisdictional boundaries. This is expected to be accomplished by combining traditional transportation actions with community investment (such as community development projects and brownfield redevelopment) and policy and program (such as greenspace and stormwater) actions, some of which will be coupled with impact mitigation strategies developed for the project.

Implementation Partnerships

The success of the Eastern Corridor requires cooperation and coordination among the implementation partners. Local funding sources are unique to local governments, with each jurisdiction having varying home rule authorities, taxing authorities, resources, responsibilities and priorities. By using resources available to it, each jurisdiction can implement specific components of the overall plan, effectively leveraging the larger corridor-wide plan.

Keys to this implementation partnership include:

- Agreement on the "big picture";
- Recognize differences in needs, abilities, and timing;
- Create mutually-beneficial relationships among jurisdictions;
- Identify jurisdictional benefits as a framework for funding;
- Anticipate compromise (*win-win approach*); and
- Continually work to unite local, state, and federal agencies and resources.



Key Financial Strategies

A variety of federal and local funding options are available for the corridor, and it is unlikely that funds for the entire project would be secured from a single source. The recommended financial strategy for the Eastern Corridor, therefore, includes the following key components:

- Pursue corridor-wide implementation;
- Create a comprehensive approach;
- Work across jurisdictional boundaries;
- Identify all potential funding sources (federal and non-federal), including innovative and nontraditional approaches;
- Target specific local projects and combine locally available funding sources;
- Leverage regional funding strategy through local projects;
- Develop a pooled funding investment portfolio (not one big check or funding source);
- Match projects with specific funding sources;
- Pursue a phased development approach; and
- Adequately define jurisdictional benefits.

Overall, the key to successful project implementation will be to: a) continually target a variety of funding sources (both federal and non-federal), b) effectively match the nature of the project with the purpose or goal of the funding source, and c) secure the local match funding component in order to attract state and federal resources and additional private investments available to invest in the plan.

7.3.4. Further Development of the Implementation Plan

Several steps for the implementation and funding of the proposed Eastern Corridor transportation improvements are currently in the early stages of development. These steps, summarized below, will be further developed through Tier 2 of the project as specific implementation and funding details are identified, described and coordinated among the implementation partners, and in conjunction with Tier 2 jurisdictional benefit/cost work and other design and environmental studies:

- Establish a financial strategy subcommittee comprised of representatives of the implementation partners to refine locally available funding and allocation;
- Begin development of the Tier II EIS;
- Continue development of the implementation partnership, with on-going communication/coordination between the Eastern Corridor focus area coordinating committees, local jurisdictions and stakeholders;
- Seek to secure funding by targeting state, federal and locally available funding programs;
- Coordinate environmental issues and strategies identified through Tier 1 work and the ECLUVP with environmental agencies;



- Pursue inclusion of the Eastern Corridor as a national high priority corridor and designation as a new segment of the Appalachian Development Highway System (these actions do not guarantee funding, but are important steps in securing new funding sources);
- Coordinate with all agencies and organizations with jurisdiction over the specific modes represented by the overall Eastern Corridor transportation plan (i.e., highway, TSM, bus transit, rail transit [fixed guideway], bikeways/pedestrian movement, enhancements, mitigation);
- Establish inter-disciplinary planning teams to further develop specific issues or project commitments such as development of an environmental mitigation plan, focus area infrastructure/community and economic development coordination, and riverfront/Oasis rail transit coordination;
- Begin development of intergovernmental agreements for project development and joint funding strategies, such as mitigation banking and local match credit banking; and
- Continue public information efforts and coordination with resource agencies.



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CHAPTER 8 CONCLUSIONS AND RECOMMENDATIONS FOR TIER 2



CHAPTER 8 CONCLUSIONS AND RECOMMENDATIONS FOR TIER 2

The procedural goal of the Eastern Corridor Tier 1 work and this Tier 1 DEIS is to identify feasible alternatives, across multiple modes, that meet the project purpose and need and are recommended to be carried forward into Tier 2 evaluation. The Tier 1 work and this Tier 1 document do not identify preferred alternatives or final actions.

This chapter of the DEIS presents key conclusions regarding the Eastern Corridor multi-modal plan from Tier 1 environmental evaluation. Included is a summary of the recommended feasible transportation alternatives to be carried through into Tier 2 for detailed evaluation, a summary table of expected key environmental impacts, description of a preliminary mitigation strategy for the project, and a preliminary list of environmental commitments for the project that need to be carried forward into Tier 2 for further development.

8.1. RECOMMENDED MULTI-MODAL ALTERNATIVES FOR DETAILED EVALUATION IN TIER 2

8.1.1. Summary of Alternatives

The following paragraphs describe feasible alternatives, in various improvement categories or mode groups, that are recommended in this action to be carried forward into the next phase of evaluation (Tier 2 environmental document or equivalent).

Transportation System Management (TSM):

• 55 TSM core projects, consisting of a combination of operational strategies, minor existing roadway corridor improvements, as well as use of transportation demand management (TDM) strategies; includes 15 intersection improvements, 34 roadway corridor improvements, 2 interchange improvements, 2 more frequent service bus routes, and 2 park-and-ride facilities.

TSM core projects for the Eastern Corridor were selected based on anticipated improvement to the multi-modal transportation services within the Eastern Corridor, ability to meet key transportation needs such as safety and congestion, support of the Eastern Corridor Land Use Vision Plan, and other issues such as funding availability and project readiness. This core TSM list will be updated in Tier 2 as the project financial strategy is finalized and priorities for TSM are refined. TSM actions that are not of independent utility and minor localized impacts will be included in the Tier 2 environmental evaluation for the Eastern Corridor. Other TSM actions will continue forward in project development under traditional project-level environmental evaluation processes.

Expanded Bus:

The expanded bus plan for the Eastern Corridor contains three main components, including:

• primary (expanded bus) routes for serving identified primary and secondary linkages in the Eastern Corridor (Chapter 3, Table 3.5),



- new community circulator and feeder routes to compliment rail transit (Chapter 3, Table 3.6), and
- twelve hubs, consisting of six bus-only hubs and six bus/rail transit hubs (Chapter 3, Table 3.7)

Most bus transit actions are of independent utility and minor localized impacts, and therefore will not be included in the Tier 2 environmental evaluation. Most bus actions will continue forward in project development under traditional project-level environmental evaluation processes. Hub development and related actions, including local circulator bus and related community issues, are part of the anticipated Tier 2 analysis framework.

Rail Transit:

Two general rail transit corridors, each including minor route alternatives and alignment variations as described and illustrated in Chapter 3.4.1, are recommended for action in the Eastern Corridor, including:

- Primary corridor and near-term action: The Oasis Line, extending from downtown Cincinnati to Milford (along a combination of the existing Oasis rail corridor, new alignment co-located with the highway corridor, and on or closely paralleling existing Norfolk-Southern rail right of way), and using Diesel Multiple Unit (DMU) technology; total length about 17.1 miles. The Oasis Line includes approximately 10 rail stations, four of which are combined bus/rail transit hubs. Several alternative location options for portions of this rail line are under consideration in the downtown Cincinnati area, in the Lunken Airport vicinity, in the co-located right-of-way segment, and along the N-S right-of-way. This corridor and its locational alternatives is a stand-alone action that meets purpose and need independent of other major transit investments, and is recommended for specific evaluation in Tier 2.
- Secondary corridor and long-term action: The Wasson Line, extending from the Xavier/Evanston vicinity to the Eastgate area in Clermont County (along a combination of the existing Norfolk-Southern "Wasson" rail corridor and new alignment co-located with the highway corridor), and using Electrically Powered Light Rail (LRT) technology consistent with other parts of the I-71 LRT corridor (see next paragraph); total length about 11.7 miles. The Wasson Line includes approximately 6 rail stations, four of which are combined bus/rail transit hubs. Minor alternative location or configuration options for portions of this rail line are under consideration in the constricted areas along parts of the N-S "Wasson" segment and in the co-located right-of-way segment.

As noted in Chapter 3.4.1, the Wasson Line is scheduled as an extension of the planned I-71 Light Rail Transit (LRT) corridor, and is dependent upon implementation of the I-71 LRT for function and system linkage consistent with project purpose and need. A separate NEPA action will be required for the I-71 LRT project and, although a preliminary DEIS has been prepared, there currently is no plan to further project development due to funding uncertainties. As such, the current recommendation in this action for the Eastern Corridor is that the Wasson alternative, as recommended in the MIS, be part of the long-term framework with no immediate action in project development other than preservation of existing rail right-of-way for future transportation purposes.

In the reporting of data and potential impacts in this Tier 1 document, values for both the Oasis and Wasson corridor alternatives have been included as a conservative measure. The Tier 2 document will refine these values for the appropriate actions.



New Highway Capacity:

Highway alternatives for the Eastern Corridor were developed for four geographic segments of the study area (see Chapter 3.4.1); total new highway length for all segments combined is about 12.6 miles. In all cases, the general configurations and locations described do not infer final information; further adjustments and refinements will occur in Tier 2 to address impact minimization or other project development factors.

- <u>Segment I</u> (Red Bank Corridor, I-71 to US 50) Roadway improvements in Segment I involve consolidation and management of access points along existing Red Bank Road and Red Bank Expressway in order to establish a controlled access arterial roadway of improved capacity and safety from I-71 to US 50. This segment has a total length is about 2.5 miles, and would expand or closely follow the existing roadway alignment. The feasible alternatives framework for Segment I consists of three main components: basic highway mainline, interchange options at US 50, and local access roadway network, as summarized below:
 - Two basic highway mainline alternatives incorporating closely spaced location options, all proximate to or on existing roadway right-of-way (Alternatives A and A2),
 - Three alternative configurations for a new Red Bank Road/US 50 interchange (Alternatives B1, B2 and B3),
 - Three side road/intersection improvement options for consolidating traffic access points to Red Bank Road and improving local access (Alternatives SR1, SR2 and SR3).
- <u>Segment II</u> (US 50/River Crossing to Newtown Road) Roadway improvements in Segment II involve consolidation and management of access points for establishing relocated SR 32 as a controlled access arterial roadway west of I-275, with a clear span crossing (a joint roadway/rail transit crossing) of the Little Miami River; total length is about 2.6 miles. Alternatives recommended for consideration under Tier 2 include:
 - Four basic multi-lane mainline location alternatives for approaches to and crossing of (by clear-span) the Little Miami River (Alternatives C, D, E and F), and
 - Six basic multi-lane mainline alternatives for traversing the Little Miami River floodplain east of the river main channel and Clear Creek (Alternatives G, H, I, J, K and L).
 - Segment II alternatives include a parallel rail transit corridor (co-located in common right-ofway).
- <u>Segment III</u> (Newtown Road to Mt. Carmel-Tobasco Road) Similar to Segment II, roadway improvements in Segment III involve consolidation and management of access points for establishing relocated SR 32 as a controlled access arterial roadway west of I-275; total length is about 3.4 miles. Alternatives recommended for consideration in Tier 2 include:
 - Four basic multi-lane mainline alternatives through Newtown and the developed Ancor area to the east of Newtown (Alternatives M, N, O and P), and
 - Four basic multi-lane mainline alternatives in the vicinity of the Mt. Carmel hillside (Alternatives Q, R, S and T).
 - Segment III alternatives may include development or preservation of a parallel rail transit corridor (impacts and costs reported in this document include the co-located transit corridor in this segment).



- <u>Segment IV</u> (Mt. Carmel-Tobasco Road to Olive Branch-Stonelick Road) Roadway improvements in Segment IV involve consolidation and management of access points for establishing improved SR 32 as a limited access arterial roadway east of I-275; total length is about 4.1 miles. The range of alternatives recommended for consideration in Tier 2 include:
 - Alternative I (IV) a configuration providing full directional flyover ramps connecting mainline I-275 and mainline SR 32, replacing the existing cloverleaf interchange,
 - Alternative P (IV) a configuration consisting of a relocated I-275/SR 32 interchange, and
 - Alternative Q-3 (IV) a configuration using collector-distributors along both I-275 and SR 32.

There are minor functional variations on these interchange configuration groups that may also be considered in Tier 2, as well as possible phasing of portions of the alternatives over time, but these variations are not outside of the general footprint established or range of impacts reported.

Bikeway:

The bikeway plan for the Eastern Corridor includes dedicated (planned) bikeways/trails and alternative bike links under consideration as described in the OKI Regional Bike Plan and incorporation of findings from the Eastern Corridor land use vision plan. Key bikeway connections include the following:

- Planned bikeway along US 50/Wooster Pike (following existing roadway and rail) and in Otto Armleder Memorial Park connecting an existing trail in Milford to existing bike trails in the Lunken Airport vicinity.
- Planned bikeway between Columbia Avenue and Eastern Avenue (following existing roadway and rail) connecting downtown Cincinnati to existing trails in the Lunken Airport vicinity.
- Planned bikeways along portions of Round Bottom Road, Newtown Road, Wasson Road, Murrey Avenue and Batavia Road (following existing roadways and/or rail) connecting area parks and greenspaces, and ultimately linking to existing trails in Milford and the Lunken Airport vicinity.
- Planned bikeway along Kellogg Road extending south from existing trails in the Lunken Airport vicinity (Ohio River Bike Trails).

8.1.2. Summary of Recommended Project Phasing

As previously described (Chapter 7.4.1), the Eastern Corridor Multimodal Projects are scheduled for completion over a ten-year period beginning in 2005, as summarized below:

Multi-Modal Project	Construction Period	<u>Opening Year</u>
TSM	2005 – 2008	2009
Expanded Bus System	2005 – 2010	2011
Highway w/ Transitway	2007 – 2011	2012
Oasis Rail Transit	2005 – 2013	2014
Wasson Rail Transit	2008 – 2014	2014 ^[1]

^[1] The Wasson Rail transit is planned as an extension of the I-71 LRT, and is dependent upon its implementation; see below.



Service is planned to be introduced incrementally as follows:

- Transportation System Management (TSM) projects match up with highway, expanded bus and rail transit modal construction, and can begin in 2005 with completion in 2008;
- Expanded Bus Transit can be phased with other modal implementation beginning in 2005 through 2010;
- Highway can be phased in four segments beginning in 2007, with the I-275/SR 32 interchange (Eastgate area) and Red Bank Road (I-71 to US 50) improvements in place by 2010, and relocated SR 32 from US 50 to Newtown Road, and Newtown Road to Eastgate completed by 2011;
- The Oasis Rail Transit Line can be phased in two segments beginning in 2005, with the downtown Cincinnati to Newtown section in place by 2010, and the Newtown to Milford section in place by 2013; and
- The Wasson Rail Transit Line is scheduled as an extension of the planned I-71 LRT, and is dependent upon implementation of the I-71 LRT for function and system linkage consistent with project purpose and need. A separate NEPA action will be required for the I-71 LRT project and, although a preliminary DEIS has been prepared, there currently is no plan to further project development due to funding uncertainties. As such, the current recommendation in this action for the Eastern Corridor is that the Wasson alternative, as recommended in the MIS, be part of the long-term framework with no immediate action in project development other than preservation of existing rail right-of-way for future transportation purposes.

8.2. IMPACT SUMMARY

Preliminary environmental impacts expected by the various modal alternatives under consideration in the Eastern Corridor are presented in detail in Chapter 5.1. Included are tabular summaries of the range of impacts and environmental concerns for TSM (Table 5.2), bus hubs (Table 5.3), Oasis and Wasson rail lines (Table 5.4), rail stations (Table 5.5), highway alternatives in Segment I (Red Bank Corridor; Table 5.6), highway/transit alternatives in Segment II/III (Red Bank at US 50 to Mt. Carmel-Tobasco Road; Table 5.7), highway alternatives in Segment IV (Eastgate area; Table 5.8) and new bikeway (Table 5.9). In addition to modal impacts, Chapter 5.2 of this DEIS discusses preliminary impacts of multi-modal alternatives by geographic area within the Eastern Corridor.

Since feasible alternatives developed in Tier 1 are not specific alignment locations, but alternative corridors that will be further developed in Tier 2, impact quantities are based on conservative estimates of corridor widths. Corridor widths used in assessing impacts vary by mode and location, and are specified in Chapter 5. Overall, the preliminary impact assessment conducted for Tier 1 presents an overview of the range of likely impacts expected by the different modes and multi-modal alternatives being considered for the Eastern Corridor. Actual impacts will be different (may be higher or lower) once alignment location and configuration is more specifically determined during Tier 2, and detailed design is developed.

Based on the impact information reported in Chapter 5, Table 8.1 below presents a general summary of the environmental impacts and concerns expected by the multi-modal alternatives assessed in Tier 1 for each of the six Eastern Corridor geographic areas.



Whereas more impact details are presented in Chapter 5, Table 8.1 provides a general overview of the environmental features and resources expected to be affected within each of the geographic areas, and highlights key concerns.

Eastern Corridor Area	Key Concerns	Other Potentially Impacted Features
Area #1: Wasson/Red Bank Road	Potential residential and business displacements	USGS streams; floodplains; sole source aquifer; wetlands; parks; hazardous materials concern sites; residential, commercial, industrial land uses; National Register District and other cultural resources; potential highway and rail noise
Area #2: Ohio 32/Wooster West	Little Miami River; public parks (several); National Register Districts (Hahn, Perin and Mariemont); archaeological sensitivity; potential residential and commercial displacements	Wetlands; floodplain; sole source aquifer; state-listed species; hazardous materials concern sites; residential, commercial, industrial, agricultural land uses; National Register individual properties; other cultural resources; potential highway and rail noise; visually sensitive resource
Area #3: Wooster East	None (multi-modal alternatives primarily follow existing transportation corridors)	USGS streams; floodplain; sole source aquifer; Public Water Supply (Township Fields and Tavern); hazardous materials concern sites; industrial land use; other cultural resources; potential rail and highway noise; visually sensitive resources
Area #4: Eastern Avenue/Lunken	None (multi-modal alternatives primarily follow existing transportation corridors)	USGS streams; floodplains; sole source aquifer; parks; hazardous materials concern sites; National Register individual property; other cultural resources; rail noise
Area #5: Eastern Avenue/Lunken and Ohio 32	None (multi-modal alternatives primarily follow existing transportation corridors)	Floodplain; sole source aquifer; parks; commercial land use; other cultural resources; potential commercial and industrial displacements
Area #6: Ohio 32/Eastgate	Potential residential, commercial and industrial displacements	USGS streams; hazardous materials concern sites; residential, commercial land uses; other cultural resources; potential highway and rail noise

Table 8.1. Summary of Preliminary Impacts by Geographic Area

8.3. PRELIMINARY ENVIRONMENTAL MITIGATION ISSUES AND EXPECTED PERMITS

8.3.1. Summary of Expected Environmental Mitigation and Permit Requirements

Detailed evaluation of avoidance and minimization of impacts to environmental features by the Eastern Corridor multi-modal alternatives will be conducted on a project-by-project basis during Tier 2 when more detailed alignment-specific alternatives are developed.



In general, unavoidable impacts to any state and federal regulated features by a preferred alternative developed during Tier 2 studies will require the development of mitigation measures and/or permit preparation based on the most current statutory requirements. Resources identified in the Eastern Corridor for which mitigation, abatement and/or permit preparation may be required during further project development in Tier 2, if determined to be impacted, are summarized in Table 8.2 below by area.

Overall, one or more of the following coordination, permits or mitigation issues are expected to require attention during further Eastern Corridor project development in Tier 2:

- Ohio Department of Natural Resources (ODNR) Scenic Rivers Approval (ORC Section 1517.16) Little Miami River
- Section 7 coordination (Wild and Scenic Rivers Act) Little Miami River and possible tributaries
- Section 404 permit and Section 401 water quality certification Little Miami River and other streams, wetlands
- Section 7 coordination (Endangered Species Act) threatened and endangered species
- Section 4(f) public parks, cultural resources, Little Miami River (possible 4(f) involvement)
- Section 106 evaluation cultural resources
- Section 6(f) evaluation (Land and Water Conservation Fund)- public parks
- Floodplain permit FEMA floodplains
- Compensatory mitigation streams, wetlands, sole source aquifer
- Potential abatement or other mitigation highway/rail noise, noise vibration, hazardous materials

Table 8.2. Preliminary Expected Environmental Mitigation and Permit Summary by Geographic Area

	Area #1	Area #2	Area #3	Area #4	Area #5	Area #6
	(Wasson / Red Bank Road)	(Ohio 32 / Wooster West)	(Wooster East)	(Eastern Avenue / Lunken)	(Eastern Avenue / Lunken and Ohio 32)	(Ohio 32 / Eastgate)
Geographic Area Location	I-71/Xavier to Red Bank/US 50	Red Bank/ US 50 to Ancor / Mt. Carmel Hill	Ancor/Mt. Carmel Hill to Milford	Downtown to Lunken/ US 50	Lunken/US 50 to I-275/ Eastgate	Ancor/Mt. Carmel Hill to Eastgate
Multi-Modal Transportation Components in Area	TSM, rail, expanded bus, new roadway capacity, bikeway	TSM, rail, expanded bus, new roadway capacity, bikeway	TSM, rail, expanded bus, bikeway	TSM, rail, expanded bus, bikeway	TSM, expanded bus, bikeway	TSM, rail, expanded bus, new roadway capacity
Mitigation and/or P ("X" ind	ermits Expe icates mitigat				es by Area	
Streams and Wetlands						
- Section 404/401 permit / water quality certification	Х	Х	Х	х	Х	Х
- Compensatory mitigation	Х	Х	х	Х	Х	Х
Sole Source Aquifer (BVAS)						
- Avoidance, minimization and mitigation evaluation	Х	Х	Х	Х	Х	



Table 8.2. Preliminary Expected Environmental Mitigation and Permit Summary by Geographic Area

	by C	Seograph	ic Area			
	Area #1	Area #2	Area #3	Area #4	Area #5	Area #6
	(Wasson / Red Bank Road)	(Ohio 32 / Wooster West)	(Wooster East)	(Eastern Avenue / Lunken)	(Eastern Avenue / Lunken and Ohio 32)	(Ohio 32 / Eastgate)
FEMA Floodplain Permit	Х	Х	Х	Х	Х	Х
Little Miami River						
- Possible Section 404 permit and Section 401 water quality certification		Х				
- ONDR Scenic Rivers Approval (ORC 1517.16)		Х				
- Section 7 coordination (Wild and Scenic Rivers Act)		Х				
- Compensatory mitigation (see Chapter 8.4)		Х				
- Possible Section 4(f) involvement		х				
Public Parks						
- Section 4(f) evaluation	Х	х		Х		
- Section 6(f) evaluation		Х		Х		
Threatened/Endangered Species						
- Section 7 coordination (Endangered Species Act)	Х	Х	Х	Х	Х	Х
Cultural Resources/National Register properties						
- Section 4(f)/106 evaluation	Х	Х	Х	Х	Х	
Potential Hazardous Materials						
- Possible mitigation	Х	х	Х			х
Highway Noise						
- Possible abatement	Х	Х				Х
Rail Noise and/or Vibration						
- Possible abatement	Х	Х	х	х		х

8.3.2. Preliminary Environmental Mitigation Strategy

During early planning stages of the project, the Eastern Corridor Major Investment Study (MIS) Task Force evaluated alternatives related to a potential new crossing of the Little Miami River,



and recommended that the MIS multi-modal transportation plan include a relocated SR 32 alternative on new alignment with a new Little Miami River crossing near Red Bank Road/US 50. The MIS Task Force, however, recognized concerns regarding potential environmental impacts of a new bridge over the Little Miami River, and outlined general provisions for mitigating adverse environmental impacts related to a new Little Miami River crossing.

River crossing and other greenspace and corridor preservation issues were also noted by the public during the Eastern Corridor Land Use Vision process, and priority needs identified for the project area included items such as preservation of land in the river plains for agriculture or open space, re-establishment of forested streamside corridors for preservation and enhancement of water quality, preservation of wooded hillsides, floodplain protection, and moderation of stormwater runoff. In addition, resource agencies that have been involved with the Eastern Corridor through Tier 1 have emphasized that minimization and mitigation be developed, and for some resources (such as the Little Miami River), outlined strategies for further consideration and development¹.

Therefore, it has been recognized from the beginning of the Eastern Corridor project that emphasis be placed on avoidance, minimization and mitigation of impacts to environmentally sensitive resources in the area. There is expectation by the project stakeholders, local communities, and resource agencies that this commitment for mitigation be carried forward from Tier 1 to continued, more detailed development in Tier 2.

As such, an Eastern Corridor environmental mitigation plan will be developed for the project in conjunction with more detailed alignment development, preferred alternative selection, permit preparation, agency coordination, and stakeholder and public input efforts conducted during Tier 2. This project mitigation plan will be consistent with state and federal requirements, and may be in part administered at the local level in conjunction with other local preservation, mitigation or enhancement plans, with a combination of local, state and/or federal funding, as applicable.

Key components of the Eastern Corridor environmental mitigation plan under development at this time include the following:

- <u>Address project impacts</u> the mitigation plan will address three key impact categories for the Eastern Corridor identified from Tier 1 studies:
 - o ecological resources (streams, floodplain, wetlands, aquifer, habitat),
 - o parkland (Section 4(f)), and
 - o cultural resources (Section 106/4(f)).
- <u>Integrate mitigation with local programs</u> the plan will emphasize integrating mitigation measures developed for the project with local land use, watershed, greenspace, floodplain, aquifer and other environmental stewardship programs for habitat, water quality, and important community resources.

¹ Preliminary mitigation measures relative to the Little Miami River under consideration at this time, and to be further developed in Tier 2 in conjunction with the overall Eastern Corridor environmental mitigation plan, are described in Chapter 5.2.2 of this DEIS and listed in Table 8.3)



- <u>Multi-jurisdictional participation</u> the stitching together of project mitigation with on-going local resource protection efforts will provide framework for effective implementation of the mitigation plan and multi-jurisdictional (and multi-agency) participation in the plan.
- <u>Diverse funding sources</u> multi-jurisdictional and multi-agency participation in the plan will provide opportunity to utilize locally available resources outside traditional transportation funding through flexible local match and other program sources.
- <u>Environmental stewardship</u> overall, the Eastern Corridor environmental mitigation strategy focuses on specific contributions of federally funded transportation projects to ecosystem conservation (an FHWA Vital Few Goal), and is an example of proactive environmental stewardship.

These six components summarized above are being incorporated in the implementation framework currently being developed and will be carried forward into the Tier 2 work for further refinement as part of the overall strategy.

8.4. PRELIMINARY ENVIRONMENTAL COMMITMENTS FOR FURTHER DEVELOPMENT IN TIER 2

The primary goal of the Eastern Corridor Tier 1 work has been to identify feasible multi-modal alternatives to be carried through into Tier 2 for further development and evaluation. Tier 2 work will involve the preparation of separate NEPA documents for the various projects carried through from the first phase. The environmental documents prepared in Tier 2, which may be EIS's, environmental assessments or categorical exclusions depending on project complexity and impact, will typically involve more detailed alignment development, environmental field studies and evaluation, environmental impact assessment and detailed alternatives analysis for determining a preferred alternative on a project-by-project basis. Tier 2 work will also include identification and development of specific mitigation measures and environmental commitments to sufficiently address and complete the NEPA process.

As such, the permit issues and environmental mitigation plan described above, and preliminary list of environmental commitments, presented in Table 8.3 below, provide a *general overview* of key environmental-related work that will need to be carried forward into the remaining phases of the project. This preliminary list of commitments will be continually updated and refined as the various projects in Tier 2 progress through additional environmental study, detailed design, agency review and permit application. Specific commitment items that are developed through this time will be incorporated into the final NEPA document and final design of the various projects carried forward into Tier 2.



Table 8.3.	Summary of	Preliminary	Environmental	Commitments
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Environmental Feature/Category	Preliminary Commitment(s) for Further Development in Tier 2			
Little Miami River	Minimization of adverse impacts to the Little Miami River are of special concern for the Eastern Corridor project, and development of specific mitigation measures, and agency coordination and approval, will be required due to its Exceptional Warmwater Habitat and state and national designations.			
	The Eastern Corridor project involvement with the Little Miami River may require resource agency coordination in accordance with Section 404 and Section 401 of the 1972 Federal Clean Water Act (as amended in 1977), Section 7 of the National Wild and Scenic Rivers Act, Section 1517.16 of the Ohio Revised Code (ODNR scenic rivers approval), and/or Section 4(f) involvement under the 1966 U.S. Department of Transportation Act (coordination with U.S. Coast Guard has determined that Section 9 bridge permit per Rivers and Harbor Act is not needed; see Appendix C)			
	Commitment is made in this Tier 1 environmental document to complete all required coordination, evaluation and permit application applicable to the Little Miami River during Tier 2.			
	In addition, commitment is made to further evaluate and develop (in Tier 2) mitigation measures for the Little Miami River. It is expected that a mitigation strategy will be consistent with state and federal requirements, and may be in part administered at the local level in conjunction with other local preservation, mitigation or enhancement plans, with a combination of local, state and/or federal funding, as applicable.			
	Strategies under consideration at this time (based on Tier 1 resource agency coordination and stakeholder and public input), including the following:			
	 Clear spanning of the Little Miami River crossing area for shared roadway/rail transit use. Stream mitigation such as restoration, preservation or other measures within the Little Miami River watershed, which may include land acquisition, placement of conservation easements or other measures (to be determined during the 404/401 permit process). Controlled access throughout this section of relocated SR 32, with no new access points through the Little Miami River crossing area (except for recreational purposes). Incorporation of special design measures to allow for the unimpeded Little Miami River 100-year flood event. Development of stringent Best Management Practices for implementation during bridge construction (such as sediment and erosion control practices, project phasing, minimization of vegetation clearing, etc.), including rigid application of ODOT's Construction Plan (SWPP). NPDES storm water permit application and coordination with OEPA will be conducted for the project for compliance with the Clean Water Act and current provisions of the Ohio Water Pollution Control Act (ORC Chapter 6111) per ODOT's Construction (Item 107.19; ODOT, 2002). 			
Other Streams	Site-specific stream impacts will be determined on a project-by-project basis during Tier 2 of the Eastern Corridor study, and site-specific stream avoidance, minimization and mitigation measures will be evaluated as the project progresses through the NEPA process and detailed design in Tier 2. A final stream mitigation plan (as necessary for a Tier 2 project) will be developed as part of the 404/401-permit application process.			



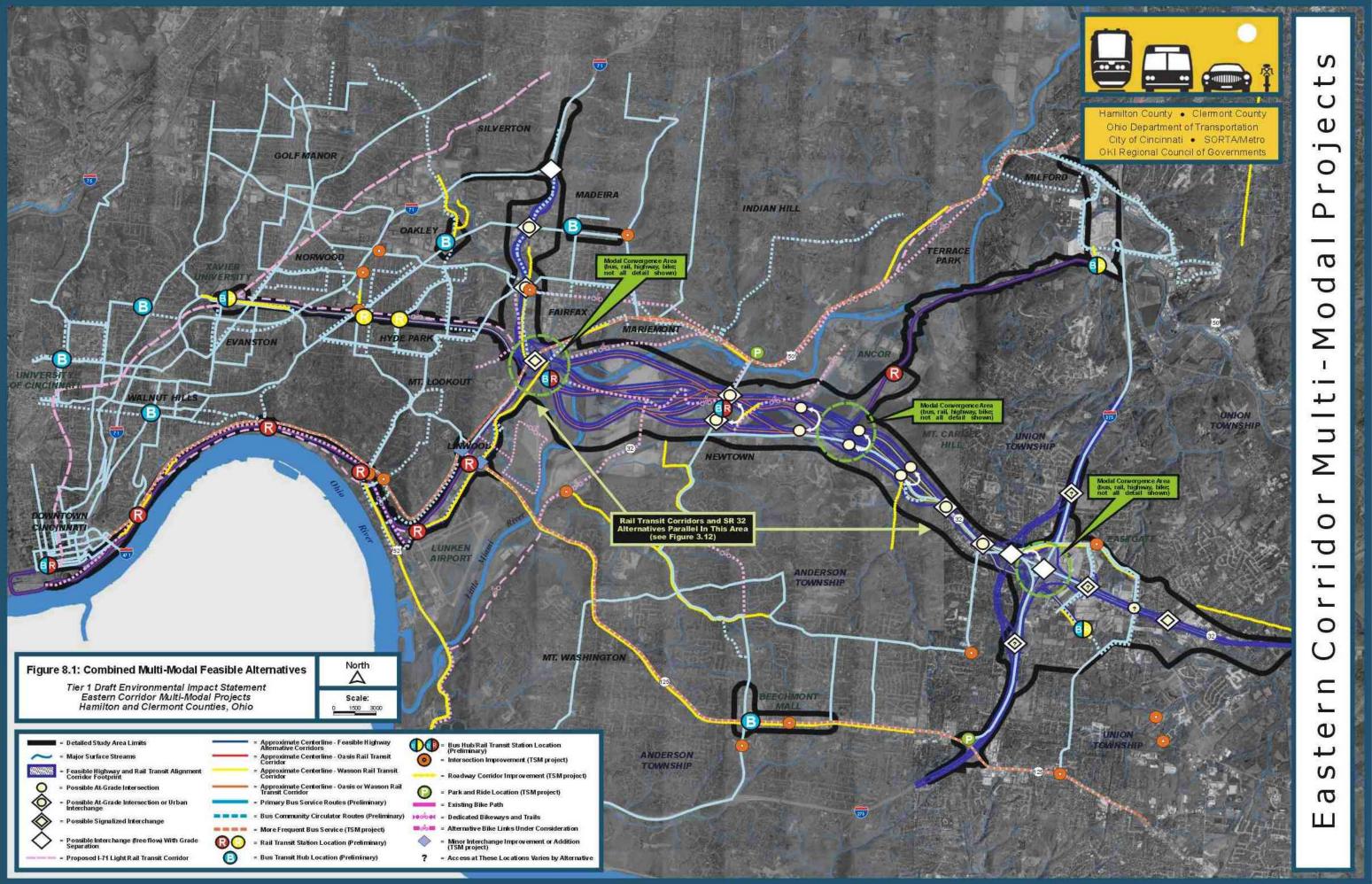
Table 8.3. Summary of Preliminary Environmental Commitments

Environmental Feature/Category	Preliminary Commitment(s) for Further Development in Tier 2
Floodplains	For Tier 2 projects involving floodplain encroachment, coordination with the appropriate local floodplain coordinator will be conducted during detailed design to assure that proposed structures meet local floodplain requirements for design and minimization/mitigation. Mitigation of floodplain impacts (as necessary) will be incorporated into project plans during detailed design based on this coordination and other agency review. All floodplain permits will be obtained prior to project construction.
Sole Source Aquifer (BVAS) and Public Water Supplies	Requirements of the federal Safe Water Drinking Act pertaining to sole source aquifers will continue to be satisfied throughout the project. During Tier 2 of the Eastern Corridor study, a Preliminary Screening Report will be prepared on a project-by-project basis, where warranted, and submitted to USEPA, and specific measures for protecting aquifer resources and public water supplies will be identified. Commitment is made to evaluate and develop the utmost protection measures during all remaining phases of a project, including detailed design, construction and operation and maintenance.
Wetlands	Detailed wetland delineations and site specific wetland impacts (including isolated wetland determinations) will be conducted on a project-by-project basis during Tier 2 of the Eastern Corridor study, and site specific wetland avoidance, minimization and mitigation measures will be evaluated as the project progresses through the NEPA process and detailed design in Tier 2. A final wetland mitigation plan (as necessary for a Tier 2 project) will be developed as part of the 404/401-permit application process.
Threatened and Endangered Species	Field surveys to determine the occurrence of populations or potential habitat for federal and state listed species will be conducted in Tier 2 on a project-by-project basis, specifically for Indiana bat, running buffalo clover and bald eagle. All required coordination and mitigation will be conducted as necessary for compliance with provisions of the Fish and Wildlife Coordination Act (48 stat. 401, as amended; 16 USC 661 et seq.), Section 7 of the Endangered Species Act of 1973, as amended, and the U.S Fish and Wildlife Service's Mitigation Policy. Specific avoidance and minimization measures will be developed following agency coordination, and incorporated into final project plans, as necessary.
Parkland	Avoidance and minimization of encroachment on public parks and Section 4(f) and Section 6(f) evaluations will be further developed in Tier 2 on a project-by-project basis. Appropriate mitigation will be developed, as necessary, based on resource agency and local park district coordination during the Section 4(f) and 6(f) processes.
Hazardous Material Concern Sites	Environmental site assessment screenings (and any other required assessments) will be conducted in Tier 2 on a project-by-project basis. Unavoidable encroachment on an identified hazardous site will be mitigated according to all applicable federal, state and local requirements and agency coordination.
Land Use	Commitment is made through all remaining phases of projects carried forward into Tier 2 to consider, to the extent practicable, the goals and priority items identified through the Eastern Corridor Land Use Visioning process, and to coordinate with the appropriate local jurisdictions for fit with local plans and requirements.
National Register Properties (Individual or District)	Commitment is made for Tier 2, on a project-by-project basis, to avoid impacts to known National Register properties to the extent practicable, and as necessary, additional field study will be conducted (such as for the Hahn Archaeological District), a Section 4(f) evaluation will be prepared and appropriate mitigation will be developed following coordination with resource agencies during the Section 4(f) process.
Other Historic or Archaeological Resources	Phase I field studies (and any other required assessments) will be conducted in Tier 2 on a project-by-project basis for compliance with Section 106 requirements, and Section 4(f) evaluation (avoidance, minimization and mitigation) will be conducted, as necessary.
Potential Displacements (residential and/or commercial)	Projects carried forward into Tier 2 will be further developed to the extent practicable to minimize displacement of residences and businesses. Acquisition and relocation for all parties displaced by a project will be conducted in accordance with all applicable state and federal laws.



Table 8.3. Summary of Preliminary Environmental Commitments

Environmental Feature/Category	Preliminary Commitment(s) for Further Development in Tier 2
Environmental Justice	As in Tier 1 of the Eastern Corridor study, identified environmental justice populations/communities in the project area will continue to be addressed through the public involvement and impact assessment process for all projects carried forward into Tier 2 in accordance with Executive Order 12898 and the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) Policy for Environmental Justice (OKI 2001).
Air Quality	The project is located in the Cincinnati Air Quality Control Region under local metropolitan planning organization jurisdiction (OKI), and is in OKI's recently adopted FY 2004-2007 Transportation Improvement Plan (TIP). The TIP is consistent with the currently adopted regional long-range transportation plan (2030 Regional Transportation Plan), which is in conformity regarding air quality. Based on this, no individual air quality analysis is expected to be required for the proposed project alternatives carried forward into Tier 2.
Noise Associated with Roadway Improvements	For projects carried forward into Tier 2 that contain highway components, detailed noise analyses will be conducted in accordance with the Federal Highway Administration (FHWA) Title 23 Code of Federal Regulations Part 772, "Procedures for Abatement of Highway Traffic Noise and Construction Noise", FHWA guidance entitled "Highway Traffic Noise Guidance Policies and Written Noise Policies" (June 12, 1995), and the Ohio Department of Transportation Policy No. 21-001 (P) (October 22, 2001) and Standard Procedures No. 417-001 (SP) (September 17, 2001). Highway noise abatement measures, if required, will be developed during the detailed design phase of a project and included in the final project plans.
Noise and Vibration Associated with Rail Transit	For projects carried forward into Tier 2 that contain rail and bus transit components, detailed noise and vibration analyses will be conducted in accordance with Federal Transit Administration guidelines and methodologies (Transit Noise and Vibration Impact Assessment, April 1995). Noise and/or vibration abatement measures, if required, will be developed during the detailed design phase of a project and included in the final project plans.
Visually Sensitive Resources	For projects carried forward into Tier 2 that contain visually sensitive resources (as identified in Chapters 4 and 5 of this DEIS), visual impact assessment will be conducted following FHWA guidelines (Visual Impact Assessment for Highway Projects, Office of Environmental Policy, undated; Publication No. FHWA-HI-88-054), and mitigation will be developed, as necessary based on assessment findings and agency coordination. Visual mitigation measures, if required, will be developed during the detailed design phase of a project and included in the final project plans.





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REFERENCES



REFERENCES

- Balke American, Gray and Pape, Inc., and H.C. Nutting Company. March 15, 2002. *Eastern Corridor Environmental Inventory Source Document*. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Balke American. June 2002. *Eastern Corridor Traffic Accident Summary Report*. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Balke American. September 2002. *Survey of Conceptual Highway Alternatives,* Eastern Corridor PE/EIS Technical Memorandum. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Balke American. February 2003. *Ecological Resources Inventory Report*. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Balke American. August 2003. *Summary Update of Conceptual Highway Alternatives in the Eastgate Area (Segment IV).* Eastern Corridor PE/EIS Technical Memorandum. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Balke American. November 2003. Addendum to Part A Environmental Studies. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Balke American. November 2003. Oasis/Riverfront Rail Transit Study, Eastern Corridor *PE/EIS, Part A Evaluation of Alternative Alignments*. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.

Balke American and Resource International. December 29, 2003. *Draft Eastern Corridor Total Cost Summary.* Cincinnati, Ohio.

- Cowardin, L.M., F.C. Golet and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* U.S. Fish and Wildlife Service, Office of Biological Services Report. FWS/OBS-79/31.
- Economics Research Associates. January 2002. *Eastern Corridor Vision Plan Economic Analysis.* Cincinnati, Ohio.
- Federal Highway Administration (FHWA). April 24, 1984. FHWA Policy, FHPM 6-7-3-2. Washington, D.C.



- Federal Highway Administration (FHWA). July 1998. *FHWA Traffc Noise Model* ® *Look-Up Tables.* U.S. Department of Transportation Research and Special Programs Administration, John A. Volpe National Transportation Systems Center Acoustics Facility. Cambridge, Massachusetts.
- Federal Transit Authority. April 1995. *Transit Noise and Vibration Impact Assessment.* Guidance Manual. Washington, D.C.
- Gordon, Robert B. 1969. *The Natural Vegetation of Ohio in Pioneer Days.* The Ohio State University. Columbus, Ohio.
- Gray and Pape Incorporated. 2002. Cultural Resources Context Information in Support of the *PE/EIS Part A Development and Identification of Feasible Alternatives, Volume 1.* Cincinnati, Ohio.
- H.C. Nutting. 2002. Results of Hazardous Materials Environmental Study (Corridor Inventory and File Review of Priority Sites), Eastern Corridor PE/EIS Hamilton and Clermont Counties. Cincinnati, Ohio.
- Heeden, S., M. Miller and G. Brand. 2001. Bridge to Ruin, Highway to Destruction: The Threatened Future of the Little Miami National Wild and Scenic River. Sierra Club informational booklet, 16pp. Cincinnati, Ohio.
- Hoggarth, M.A. 1992. The Unionidae and Corbiculidae of the Little Miami River System in Southwestern Ohio. Walkerana, 6(16):247-293.
- Hoggarth, M.A. 1998. Unionidae (Freshwater Mussels) of the Little Miami River at Newtown Road. Department of Life and Earth Sciences. Otterbein College. Westerville, Ohio.
- Hoggarth, M.A. 2001. A Study of the Mussels (Unionidae) of the East Fork Little Miami River at the IR-275 Bridge in Cincinnati, Ohio. Department of Life and Earth Sciences. Otterbein College. Westerville, Ohio.
- Kimley-Horn and Associates. February 22, 2002. *Formulation of Preliminary Bus transit Service Options*. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Kimley-Horn and Associates. April 2002. *Eastern Corridor Multi-Modal Projects, Development of Bus Transit Alternatives* (PowerPoint® presentation). Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Kimley-Horn and Associates. February 2003. Further Evaluation of Expanded Bus Alternatives, Eastern Corridor PE/EIS Multi-Modal Projects. Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. ODOT PID #22970. Cincinnati, Ohio.
- Meisner and Associates. May 2002. *Existing and Future Land Use, Eastern Corridor Land Use Vision Plan.* Cincinnati, Ohio.



- Ohio Department of Natural Resources (ODNR). 1960. *Gazetteer of Ohio Streams*. Division of Water. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 1989. Biological criteria for the protection of aquatic life, Vol. III: Standardized biological field sampling and laboratory methods for assessing fish and macroinvertebrate communities. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 1995. *Biological and Water Quality Study of the Little Miami River and Selected Tributaries*. Ecological Assessment Unit, Monitoring and Assessment Section, Division of Surface Water. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 1996. Ohio Water Resource Inventory 305(b) Report. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 1998. Community Water Systems in the State of Ohio. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 2000. Year 2000 Ohio Water Resource Inventory 305(b) Report. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 2000. *Biological and Water Quality Study of The Little Miami River Basin.* Ecological Assessment Section. Division of Surface Water. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 2001. Ohio Rapid Assessment Method (ORAM) for Wetlands, Version 5.0. Division of Surface Water. Columbus, Ohio.
- Ohio Environmental Protection Agency (OEPA). 2002. Ohio 2002 Integrated Water Quality Monitoring and Assessment 305(b) and 303(d) Report. Division of Surface Water. Columbus, Ohio.
- Ohio, Kentucky, Indiana Regional Council of Governments (OKI). April 2000. 2020 Vision for the Eastern Corridor, OKI Eastern Corridor Major Investment Study. Cincinnati, Ohio.
- Ohio, Kentucky, Indiana Regional Council of Governments (OKI). November 2001. OKI Policy for Environmental Justice (draft edition). Cincinnati, Ohio.
- Ohio, Kentucky, Indiana Regional Council of Governments (OKI). February 2003. OKI Policy for Environmental Justice (draft edition). Cincinnati, Ohio.
- Omernik, J.M. and A.L. Gallant. 1988. Updated by Woods et. al., 1999. *Ecoregions of the Upper Midwest States.* U.S. Environmental Protection Agency, Environmental Research Laboratory. Corvallis, Oregon.
- Southwest Ohio Regional Transit Authority. June 2002. *MetroMoves Regional Transit Plan.* Cincinnati, Ohio.
- State of Ohio. April 2000. Urban Revitalization Initiative. Access Ohio. Columbus, Ohio.



- URS Corporation. February 22, 2002. *Summary of Conceptual Rail Transit Alternatives*. Eastern Corridor PE/EIS Technical Memorandum. Cincinnati, Ohio.
- URS Corporation. April 19, 2002. *Eastern Corridor Multi-Modal Projects, Summary of Preliminary Rail Transit Alternatives* (PowerPoint® presentation). Cincinnati, Ohio.
- URS Corporation. December 2002. *Transportation System Management (TSM) Preliminary Alternatives Update.* Eastern Corridor Summary Memorandum. Cincinnati, Ohio.
- United States Army Corps of Engineers (USCOE) Environmental Laboratory. 1987. Corps of Engineers wetland delineation manual, Technical Report Y-87-1, U.S. Army Engineers Waterways Experiment Station. Vicksburg, Mississippi.
- United States Environmental Protection Agency. January 2001. Our Built and Natural Environment. Washington, D.C.
- Woolpert LLC, Meisner and Associates and Balke American. April 2003. Eastern Corridor Sub-Area Scoping Study I-71 and Ridge Avenue Area, Columbia Township-City of Cincinnati (I-71, Ridge Ave., Highland Ave., Kennedy Ave., Duck Creek Road Area). Dayton, Ohio.



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APPENDIX A TIER 1 ENVIRONMENTAL WORK PLANS

- Environmental Site Assessment / Geotechnical Tier 1 Work Plan for the Eastern Corridor
- Ecological Resources Tier 1 Work Plan for the Eastern Corridor
- Cultural Resources Tier 1 Work Plan for the Eastern Corridor



ENVIRONMENTAL SITE ASSESSMENT / GEOTECHNICAL TIER 1 WORK PLAN

Environmental Site Assessment (ESA)

• Further evaluate "priority" sites

The initial environmental inventory / literature review conducted for the project identified numerous (470+) "suspect" hazardous materials in the original "core study area", but narrowed priority sites down to eleven (five active or closed Solid Waste Landfills, three RCRA Large Quantity Hazardous Waste Generators, one Corrective Action site and two miscellaneous sites).

Tier 1 work will consist of further evaluation of these eleven priority sites by detailed review of EPA files, further literature review of historical maps (topos and Sanborns), historical aerial photographs, water well reports, etc. and a literature review of records from the Cincinnati Office of Environmental Management; no BUSTR review will be conducted at this time (Tier 2 work, as necessary).

• Conduct limited field assessment

Based on findings from this further literature review, field assessment (visual survey and photographs only) will be made for those sites which still appear to have outstanding environmental issues from either an impact or a regulatory standpoint; but no field sampling (i.e., no soil and/or water samples) to be conducted at this time (Tier 2 work, as necessary).

Documentation

The Tier 1 hazmat report will be titled "File Review" (not a Phase 1 ESA).

Geotechnical Work

• Emphasis on LMR crossing area

Tier 1 geotechnical work will concentrate on the Little Miami River crossing vicinity to identify potential problem sites and provide pre-design geotechnical data to assist in the evaluation of potential crossing locations, and to help in the early identification of factors that may affect structure design or mitigation strategies.

• Conduct limited test bores

Limited soil test bores to identify soils conditions at specific potential LMR crossing areas will be conducted once these locations have been identified (toward the end of Tier 1 work).

• Evaluate landslide susceptibility

Further evaluation of available landslide susceptibility mapping will also be conducted within the Detailed Study Area.



ECOLOGICAL RESOURCES TIER 1 WORK PLAN

Streams

Little Miami River and East Fork

• Assess physical conditions

Comprehensive description of physical conditions (QHEI's, site sketches, photographs) of these two features will be conducted within the entire Detailed Study Area.

• Use existing biological data

No biological sampling will be conducted in these streams due to abundance of secondary source materials; mussel surveys will be conducted during Tier 2 work and at project crossing locations only.

Other Streams and Water Resources

- Biological sampling limited to <u>selected</u> OEPA use-designated streams only Given the size of the study area and available field schedule, comprehensive biological sampling, water quality and QHEI's (using ODOT and OEPA methods) will only be conducted in streams with *existing OEPA use designations*, but that lack specific OEPA field data; sampling will be conducted at conceptual alignment crossing locations only.
- **Physical conditions to be evaluated for** <u>all</u> **USGS and OEPA use-designated streams** For other USGS mapped and OEPA use designated streams, QHEI's only (no biological or water quality surveys) will be performed at conceptual alignment crossing locations only.
- Limited field check of other water resources

For all other potential OHW features (SCS streams) and other water resources occurring within the Detailed Study Area (ponds, groundwater, wells, etc.), a cursory evaluation of conditions/ quality will be made using aerials photos and limited field check and summarized in tabular form -- an estimated 400+ such features occur in the Detailed Study Area.

• Tabulation of headwater streams

No field work or HHEI's will be conducted during Tier 1 for any headwater streams, only a brief description / tabular summary of these features and preliminary impact scenario will be presented in the Tier 1 ecological report.

Wetlands

• Field identification of wetlands

All NWI mapped features and "suspect" sites (identified from aerial photos and other secondary sources) within the entire Detailed Study Area will be field checked and the following will be conducted at each wetland site: a "point-in" wetland determination using USCOE methods, ORAM version 5.0, representative photographs and preliminary mapping on aerial photo maps.

• **No detailed wetland delineation work** Detailed wetland delineations will be conducted during Tier 2 work.

Terrestrial Habitats, Parkland and Threatened & Endangered Species

• Assessment of high quality woodlands and parks

Important terrestrial habitats identified during the environmental inventory study, other suspect high quality areas (e.g. Little Miami River riparian corridor) and parkland within the Detailed Study Area will be field checked, mapped and described.

Eastern Corridor PE/EIS Summary of Tier 1 Environmental Work Plans Developed August 12, 2002



• Endangered species habitat

Endangered species and potential habitat will be identified and documented within the Detailed Study Area.

• Limited field check of other features Identification of other habitats occurring within the Detailed Study Area will primarily be conducted through limited field check and mapped from aerial photo interpretation.

Ecological Documentation

• Summary of ecological inventory

The initial ecological document submitted during Tier 1 will be titled "Ecological Resource Inventory Report on Modal Alternatives" and consist of description / mapping of ecological features in the Detailed Study Area only (no impacts discussion).

• Ecological Survey Report

An Ecological Survey Report on Modal Alternatives will be submitted near the end of Tier 1, consisting of the inventory document described above <u>plus</u> a preliminary work-up of quantities (impacts) for key ecological features (streams, wetlands, threatened and endangered species, etc).

Agency coordination

This ESR will be coordinated with agencies and ecological information / impacts incorporated, along with information from other environmental categories, into the NEPA document prepared and submitted for approval at the end of Tier 1 (approved NEPA document / ROD will identify feasible modal alternatives to be carried through into Tier 2).

• Tier 2 ecological work

Additional alternative specific ecological work / documentation will need to be conducted during Part B for individual modes / projects carried through from Part A, but will refer back to the inventory and other background information from the ESR on Modal Alternatives prepared under Part A.

Section 4(f) Documentation

• Preliminary Section 4(f) evaluation for parks

A preliminary Section 4(f) discussion / evaluation report identifying possible Section 4(f) involvement and special considerations related to use of publicly owned parks / facilities will be prepared towards the end of Tier 1 (once feasible modal alternatives have been more specifically identified).

Groundwater (Aquifer) Documentation

• Preliminary sole source aquifer screening

A preliminary Sole Source Aquifer screening report will be prepared under Tier 1 presenting a preliminary assessment of encroachment / impacts of modal alternatives on the Great Miami/Little Miami Buried Valley Aquifer System.



CULTURAL RESOURCES TIER 1 WORK PLAN

<u>General</u>

• Develop historic contexts

Comprehensive historic contexts will be developed for archaeological and history / architecture resources. These contexts will be the key to supporting future resource-based recommendations including assessment of resource significance and eligibility during Tier 2 of the project. For archaeological resources, the context will support the justification of alternative survey methods used during Tier 2.

• Identify significant resources

A preliminary resource significance matrix by corridor will be developed to support feasible alternatives analysis.

 Update GIS database The cultural resources GIS layers will be updated and the preliminary resource significance matrix will be linked to GIS.

History/Architecture

Conduct windshield surveys

A windshield survey of the history / architecture resources will be conducted within the Detailed Study Area. This survey will focus on the current condition of the built environment and resources more than 50 years old. A preliminary identification of significant landscapes and viewsheds also will be undertaken.

• Describe existing built environment

A brief narrative description of the current condition of the built environment will be prepared, supplemented with general representative photographs of streetscapes, landscapes, and viewsheds. The description will note issues regarding architectural integrity and existing conditions of resources. Photographs will be keyed to maps of the Detailed Study Area.

• Integrate historic context

The historic context of the Detailed Study Area will be used / integrated to understand and describe the built environment.

• Prepare tabular summary of resources

A table for documenting representative history / architecture resources that are assessed on a preliminary basis as eligible for the National Register will be prepared. This table will be based on OES's new history / architecture table but it will not be identical.

• Review meeting

A meeting with the cultural resources review staff at OHPO and ODOT OES will be conducted to discuss findings of windshield survey prior to preparation of the Tier 1 report.

Archaeology

 Use negative results from previous studies Negative survey results from previous work will be used to eliminate these areas from further consideration.

• Document disturbed areas

Historic maps will be reviewed and windshield surveys conducted to document disturbed areas in order to refine historic archaeological sensitivity (i.e., high/low probability areas).



• Assess geomorphological information along LMR

A geomorphological baseline study will be developed from secondary sources (including input from H.C. Nutting) concerning stream meanders, terrace development and historical alluviation along the Little Miami River at the proposed crossing vicinity with the objective for assessing potential for deep buried archaeological sites within alluvial settings.

• Refine archaeological sensitivity model

At the end of Tier 1 (when feasible modal alternatives are more specifically identified), the archaeological sensitivity model (i.e., high/low probability areas) will be refined to identify the types of archaeological resources that are expected to be encountered based on analysis of variables such as topography, level of disturbance and proximity to natural features such as rivers and streams.

• Conduct limited interviews

Interviews with local informants knowledgeable about archaeological resources in the Detailed Study Area will primarily be conducted in Tier 2 (except for sensitive areas along the LMR, where interviews with local landowners will be conducted during Tier 1).



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APPENDIX B PUBLIC INVOLVEMENT

Appendix B-1 Public Involvement Program

- B-1a: Public Involvement Plan
- B-1b: Public Meeting Summaries
- B-1c: Community Workshops/Speaker's Bureau
- B-1d: Special Interest Groups/Stakeholder Organizations

Appendix B-2 Environmental Justice

- B-2a: Environmental Justice Action Plan
- B-2b: Environmental Justice Community Organizations

Appendix B-3 Section 106 Public Involvement

- B-3a: Historical Societies
- B-3b: Native American Tribes
- B-3c: Tribal Coordination Letter and Comments

Appendix B-4 Items on File at Project Office



Appendix B-1 Public Involvement Program

Appendix B-1a Public Involvement Plan

Appendix B-1b Public Meeting Summaries

- Round 1 May June 2003
- Round 2 May 2003
- Round 3 January & February 2004

Appendix B-1c Community Workshops and Speaker's Bureau

Appendix B-1d Stakeholder and Special Interest Groups



Appendix B-1a Public Involvement Plan



EASTERN CORRIDOR PE/EIS Part A—January 23, 2002

Public Involvement Program

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Introduction

The Eastern Corridor Project PE/EIS (Preliminary Engineering/ Environmental Impact Statement) is a public infrastructure investment study evaluating building transportation solutions in Eastern Hamilton and Clermont counties.

The project is under the administration of the Hamilton County Transportation Improvement District and the following local sponsors:

Hamilton County

Clermont County

City of Cincinnati

Southwest Ohio Regional Transit Authority

Ohio-Kentucky-Indiana Regional Council of Governments

Ohio Department of Transportation



SITUATION ANALYSIS

The Eastern Corridor is one of three major corridors under study in the Greater Cincinnati region. It is the only major study in the region not focused primarily on an interstate highway segment.

The Major Investment Study (MIS) for the Eastern Corridor was completed in April 2000 and was incorporated in OKI's adopted long range plan. The MIS recommended a multi-modal plan of highway, busway, rail transit and transportation system management (TSM). The MIS phase work was guided by the broad-based sixty member task force, chaired by Hamilton County Commissioner John Dowlin.

The task force relied on four goals to direct their efforts.

1. Identify an Effective and Comprehensive Solution for the Transportation Problem.

The solution must possess a broad range of characteristics that make it responsive and able to be implemented.

2. Provide Support and Sustenance to the Regional Economy.

The solution must enhance the economy by structure and service, and provide for the efficient movement of the labor force as well as goods and services.

3. Implement Transportation Improvements That Are Consistent With Larger Regional Environmental Goals.

The solution must enhance, rather than degrade, the rich mix of natural and man-made environmental features in the study area, and provide support for the larger environmental goals of the region.

4. Consider Land Use Issues in Structuring the Transportation Solution.

PUBLIC INVOLVEMENT PLAN

The solution must acknowledge transportation/land use relationships in assessing benefits, impacts and outcomes.

It was the intent of the task force that these goals be carried through the PE/EIS phase of study.

While the MIS recommendations were strongly supported by the task force and the community at large, there were two areas of much controversy, the proposed Little Miami River bridge crossing and the proposed Eastgate Parkway. Additional public involvement efforts will be focused on these areas during the PE/EIS.



Task Force

The Eastern Corridor Task Force was/is comprised of key stakeholders representing various interests in the affected communities.

Federal Transit Administration Family & Children First Initiative, Felicity Greater Cincinnati Coalition for the Homeless Linwood Community Council City of Cincinnati Planning Hamilton County Engineer East End Area Council Batavia Township Anderson Township Transportation Advisory Committee City of Newport Columbia Tusculum Community Council Croswell Bus lines City of Cincinnati Transportation City of Cincinnati Columbia Township Hamilton County Board of Commissioners City of Ft. Thomas Greater Cincinnati Chamber of Commerce Transit Authority of Northern Kentucky Union Township City of Milford Village of Newtown

League of Women Voters, Clermont County Clermont County Engineer Kentucky Transportation Cabinet Hamilton County Engineer's Office Village of Batavia Ohio Department of Transportation, District 8 Village of Fairfax Hamilton County Regional Planning Commission Center for Independent Living Options Greater Cincinnati Coalition/People With Disabilities Ohio Department of Transportation District 8 Ohio-Kentucky-Indiana Regional Council of Governments Clermont County Transportation Connection Little Miami, Inc. Village of Amelia Village of Mariemont Anderson Township



Public Involvement Program Goals

An effective public involvement program will take the extraordinarily complex process of transportation planning and translate it to a language the public can understand, and respond to.

If this interactive communications process is established early in the transportation planning process, the resulting recommendations will experience a much greater likelihood of implementation.

Goals:

- Provide a high level of factual awareness about the Eastern Corridor PE/EIS.
- Develop an intimate dialogue with key stakeholders to reach true understanding of their needs.
- Generate mass participation from the public and stakeholders.
- Encourage various entities of the public to become partners.
- Develop a partnership with the media to ensure accurate reporting of information.
- Identify Environmental Justice communities in the study area and solicit their input.
- Be responsible to public questions and concerns.
- Share public feedback with the study team so it can be incorporated into planning efforts.
- Identify new opportunities and areas of concern as they arise.
- Obtain documentation for the Public Involvement Program consistent with National Environmental Policy Act (NEPA) requirements.



Public Involvement Program

Public Involvement Tasks

A-11:a) Public Involvement Plan/Schedule

A-11:b) Public Meetings/Hearings

A-11:c) Public Feedback Channels

A-11:d) Public Information Center

A-11:e) Community Workshops

A-11:f) Public Involvement Information Materials

A-11:g) Media Relations

A-11:h) Marketing Communications Materials

A-11:I) Corporate Citizenship Program

A-11:j) Speaker's Bureau

A-11:k) Public Involvement Support Materials

A-11:1) Special Interest/Stakeholder Relations

A-11:m) Traffic Agency Relations

A-11:n) Web Site

A-11:0) Feedback Trends

A-11:r) Online Library

A-11:s) National Awareness

All public involvement tasks will address Environmental Justice communities and special needs.

Task A.11.a: Public Involvement Plan/Schedule

Develop a public involvement plan and supporting process materials to address public involvement goals. A public involvement matrix and schedule will ensure timelines are met and all stakeholders are addressed.

Purpose: Keep public involvement program on schedule to ensure communication goals are met.

Deliverables: Public Involvement Plan, Implementation Matrix, Schedule

Status: Drafts completed

Addendum material:

- Implementation Matrix
- Schedule

Task A.11.b: Public Meetings and Hearing

Public meetings and hearing present information to the public and obtain input from the community residents. Held throughout the planning process, these events will provide check-ins for the study team to allows for "course correction" with the final public hearing providing final community consensus on the study recommendations.

Public Meetings

Purpose: Informal meetings to receive community comments

Deliverables: Press release, media clippings, summary of community feedback.

Status: First round of public meetings tentatively scheduled for April 2002.

Public Hearing

Purpose: Formal meeting held prior to final decision point, gathers public comments and positions for public record.

Deliverables: Public notice, media clippings, summary report.

Status: Public hearing for PE/EIS part A work tentatively scheduled for February 2003.

Task A.11.c: Public Feedback Channels

Besides dispersing information and raising interest in the Eastern Corridor PE/EIS, the public involvement program will elicit public feedback. The feedback for this public involvement program will be solicited through various mediums.

Web Site Feedback/Email Address

Purpose: Provide a quick, simple, round-the-clock way for the public to provide feedback without leaving their home.

Deliverables: Online feedback database, spreadsheets delivered quarterly.

Status: Online feedback database active. First quarterly report to include Oct., Nov., and Dec. 2001

Addendum Material:

Website Feedback Page

Telephone Hotline/Voice Mail

Purpose: Allow anyone in the public with access to a telephone to contact the study team with an inquiry or to provide feedback. This medium is most often utilized by those people without computer access or who do not feel comfortable with the technology.

Deliverables: Feedback summary reports from hotline, voice mail, email and the Public Information Center.

Status: Hotline has been active since Feb. 2001.

Public Information Center/Mailed Feedback

Purpose: Allow anyone in the public without computer or telephone access to contact the study team with an inquiry or feedback.

Deliverables: Feedback summary reports from Public Information Center as well as a weekly update to be posted to the web.

Status: Center opens November, 2001.

Task A.11.d: Public Involvement Information Center

One of the goals of the Eastern Corridor public involvement program is to communicate updates of the study to as many people as possible within the study area. The objective of the Drop-in Information Center is to allow interested parties who may not have access to computers or telephones or those who prefer face-to-face communication to learn more about the study.

Purpose: The drop-in center provides a face-to-face means of communicating to the public and another means of obtaining feedback on the study.

Deliverables: Appropriate handouts (newsletters, videos, press releases, media kits et al.) to be disseminated at the center and a CD-Rom with information from the website to act as a show and tell feature. A weekly overview of the activities at the information center will also be produced and will provide content for the Web.

Status: Plan is complete. Drop-in Center opens to public in November.

Addendum material:

Diagram of office

TASK A. 11.e: Special Interest/Community Workshops

The Eastern Corridor team will focus on the inclusion of input from special interest groups in the study area. This effort will be focused on identified Environmental Justice communities, environmental groups and the local communities. Community workshops will provide information to the special interest communities as well as serve as a forum for discussion and feedback.

Purpose: To provide the public with an opportunity to receive information on the Eastern Corridor study and to voice their opinions. Workshops will be held at various venues throughout the corridor in locations such as churches and town halls. Workshops will provide the community with a platform to participate in the study by the inclusion of their opinions.

Deliverable: Sign-in sheets, Summary Reports

Status: Timeline and sites to be determined.

TASK A. 11. f: Develop Traditional Public Involvement Information Materials

The Eastern Corridor team will provide the general public with information on the study through the use of traditional modes of communication, such as newsletters, fact sheets, video and flyers/inserts.

Fact Sheet

Purpose: To create a more accessible means of communication for the general public, especially the environmental justice communities, by providing the same information provided on the Web site. The fact sheets will be included in the media kits, mailings and handed out at public meetings. The purpose is to provide both an additional and, in some cases, an initial introduction of the facts to the general public.

Deliverable: In-depth and informative fact sheets. Means of communicating the facts to environmental justice communities.

Status: Study overview-fact sheet completed and the Little Miami bridge crossing fact sheet is currently underway.

Documentary Video

Purpose: To create a visual illustration of the study's purposes and goals. A video that documents the basic overview of the study will be constructed. The video will point out the reasoning behind the study and the future transportation solutions.

Deliverable: Master copy of video, kept at project information center.

Status: Start work 1st quarter 2002

Newsletters

Purpose: Newsletters offer key information; summarize public meetings, open houses; respond to public questions and concerns and provide study timelines and public meetings.

They provide a method to summarize public meetings in an easy-to-understand format and can be used to update key media on the study progress.

Deliverable: Prepare four-page, 8 1/2x11" self-mailing newsletter. The newsletters will contain useful information about the initiative in an easy-to-read format. 5000 printed copies and an online edition.

Status: Preliminary design: December, 2001. Write and post first newsletter: January, 2002.

Flyers

Purpose: Flyers are a visually appealing means of disseminating information and will be used to alert the public to upcoming open houses and other events.

Deliverable: Fact sheets and alerts will be created and disseminated.

Status: General Fact Sheet designed. Other flyers will be prepared on an asneeded basis.

Addendum material:

Fact Sheet

Task A.11.g: Media Relations

Media coverage of the Eastern Corridor PE/EIS will carry great influence with the public and key stakeholders. To ensure that the media relays factual, non-biased information, the public involvement team will proactively approach the media as partner in the dissemination of information via press releases, briefings, meeting attendance, study tours and other opportunities as they are identified.

Purpose: To ensure factual information on the Eastern Corridor PE/EIS study activities to the mass public.

Deliverables: Media kit, media database, press releases, clipping reports/archive, Editorial Board summary reports, Media Tour summary reports.

Status: Media database is complete, media kit is underway, editorial briefings and media tours to be scheduled prior to first round of public meetings.

Addendum material:

Media database spreadsheet

Task A.11.h: Marketing Communications Materials

To complement media relations efforts, a paid marketing campaign of community newspaper ads and outdoor billboard advertising will be utilized to direct the public to the Eastern Corridor Web site for more information on the study, notices of public meetings, and to solicit feedback.

Purpose: To drive mass audiences to the web site where the public can receive factual information on activities and upcoming events, and provide feedback.

Deliverables: Newspaper Ads (tearsheets), Billboard Ad placement lists

Status: Newspaper advertising and billboard advertising to run month prior of public meetings. Billboard media plan to be finalized Dec. 1.

Addendum material:

Proposed billboard advertising location plan.

Task A.11.i: Corporate Citizenship

One of the goals of the Eastern Corridor public involvement program is to communicate updates of the study to as many people as possible within the study area. The objective of the Corporate Citizenship program cultivates relationships with key corporations along the Eastern Corridor as well as companies that serve and communicate to people who live in the Eastern Corridor.

The Corporate Citizenship initiative will:

- Sponsor a speaker. Invite someone from the Eastern Corridor Speaker's Bureau to speak at a corporate meeting or during a "brown bag" lunchroom presentation.
- Create corporate intranet links. Provide links and information from the Eastern Corridor site to a corporate intranet to give employees who travel in the area information on the initiative.
- List Web site links relevant to corporate and organizational sites to the Eastern Corridor site.
- Provide a billing insert. For appropriate companies, ask to include an information sheet on the Eastern Corridor initiative in billing or other customer materials.

Purpose: This will offer another channel to communicate and obtain feedback on the study.

Deliverable: Develop lists of key companies and businesses; hold events and information sessions.

Status: Plan is complete. Conduct research in January, 2001.

Task A.11.j: Speaker's Bureau

The Public Involvement team will organize a speakers' bureau to provide representatives for talks to local community groups, business leaders and public forums. The speakers will be recruited, trained and provided with a schedule of speaking opportunities. Additionally, each speaker will be provided with presentation materials to include speaking points, Power point presentation and handout materials. A link on the Eastern Corridor Web site will allow groups to request a speaker online.

Purpose: The purpose of the speakers' bureau is to educate residents, land and business owners, commuters and others in the Eastern Corridor Region about the Eastern Corridor Major Investment Study.

Speakers will make tailored presentations to assigned groups, facilitate discussion and lead question and answer sessions. These smaller group presentations will allow the speakers to reach individuals who may not attend larger public or committee meetings. Additionally, these presentations serve as a viable way to dismiss rumors and calm any anxiousness among residents and community groups.

Deliverables:

- Trained and prepared speakers.
- Power point presentation.
- Appropriate collateral materials.
- Link on Web site to facilitate requests for speakers

Status: Speakers will be identified by end of February 2002. Speakers' training will be conducted throughout March 2002. Formal presentations will begin April 1, 2002. All collateral materials, Power point presentations and the Web site link will be complete prior to April 1, 2002.

Task A.11.k: Project Identity Materials

To ensure the public can easily associate informational materials to the Eastern Corridor PE/EIS, identity materials such as letterhead, business cards and mailing labels will be developed. These materials will help the public distinguish credible Eastern Corridor team materials from other unrelated organizations.

Purpose: To provide distinguished materials that are easily associated to the Eastern Corridor PE/EIS work.

Deliverables: Logo, letterhead, business cards, mailing labels.

Status: Designs finalized. To be printed.

Addendum material:

- Letterhead
- Business card
- Mailing label

Task A.11.I: Stakeholder/Special Interest Relations

In addition to communications with the public at large, additional efforts will be focused on identifying and communicating with key stakeholders and special interest groups to ensure that these key influencers receive factual information on the Eastern Corridor PE/EIS work and have an opportunity to provide feedback on their needs and expectations. Groups identified initially include environmental justice organizations, businesses, school districts, community councils, political jurisdictions, environmental protection organizations, public service providers and government/administration entities.

Purpose: To ensure key influencers have an accurate understanding of the Eastern Corridor PE/EIS activities and allow them an opportunity to provide quality input to the planning process.

Deliverables: Database of stakeholders/special interests. Summary reports.

Status: Initial database compiled. Email introduction to be sent Jan. 2002.

Addendum material:

Stakeholder/special interest database spreadsheet

Addition to a.11.I Stakeholder/Special Interest Relations

It is expected that during the course of the Eastern Corridor PE/EIS that various groups in the community may express concern over evolving areas of the study, and in some cases, aggressively oppose the study.

The comments and opinions of these groups/organizations should be received as valuable public feedback.

However, for the public's best interest, it is the role of the public involvement team to ensure that the information disseminated around such areas of concern/controversy is indeed factual.

Therefore, where areas of controversy arise, the Eastern Corridor Public involvement team will create factual awareness of the situation through education via the following mediums:

- Fact sheets
- Web site updates
- Special Interest Community Workshops
- Online polling/surveys
- Media Relations

Please note, in controversial and/or complex projects, consensus-building efforts often lead to an impasse. In such cases, the agencies overseeing the study and the participants require an alternative mechanism to resolve dispute. The following processes should be considered in the following order. The public involvement team will provide coordination and support for the following processes as needed.

- Facilitation
- Negotiation
- Mediation

Task A.11.M: Traffic Reporter/Agency Relations

Traffic reporters monitor daily the existing transportation systems in the Eastern Corridor PE/EIS study area. Initially, communications between the public involvement team and these traffic entities will focus on information sharing. As study plans develop, the public involvement teams will brief traffic entities on new developments to get a "real world" check on suitability.

Purpose: Allow for flow of information. Later, enable traffic reporters/agencies to provide a common sense check of the proposed transportation recommendations.

Deliverables: Traffic agency feedback summary memos.

Status: List of traffic agencies in development. Initial contacts to be made Feb. 2002.

Task A.11.n: Eastern Corridor Web Site

The project Web site supports and strengthens EC public relations initiatives. It provides comprehensive project information, contact information, news, events, current priorities, and an opportunity for the public to send in their feedback.

Purpose: To serve as a comprehensive and interactive resource center for people interested in learning about the EC project, public involvement meetings, recent news, studies, maps and other project related materials. A major function of the Web site is to solicit feedback from the public, and a form is provided for this purpose.

Deliverables: The Web site is a continuous work in progress. Banner ads will reflect current priorities, the feedback form is designed to capture public feedback, new branches are being developed as the project moves forward, and interactive content (video/Flash) will augment core messaging.

Status: The Web site has been established and refined over the past months. The EC Library and search functionality will be added soon. A 'free email' banner has been added for those people without email addresses who would like to communicate with the EC project.

Many more updates to the Web site are planned for the next 6 months including: a congestion cam, a Flash presentation which seeks to solicit public feedback, email to an associate functionality on key pages, exit surveys, a site search function, and repurposed interactive video content from the EC project video.

Addendum material:

Visual of Website

Task A.11.o: Eastern Corridor Web Site Trend Analysis

Metrics are an important part of measuring the impact of interactive media; the EC Web site is no exception. Through trend analysis and site modification, the end user experience can be optimized.

Purpose: To analyze and determine trends of navigation and traffic levels.

Deliverables: WebTrends reports are generated monthly, analyzed, and an executive summary produced for project team partners.

Status: WebTrends reports are being delivered monthly.

Addendum material:

Web trend report

Task A.11.r: Eastern Corridor Online Library/Archive

There is a need to create a place on the EC Web site that allows the general public to access the documents and maps that are continually being produced by the EC project team.

Purpose: To serve as a central repository of maps and documents that will be accessible to the public via the EC Web site. The search function would allow the end user to locate specific documents and maps by simply typing in a key word or phrase.

Deliverables: A new branch of the EC Web site dedicated to storing project documents and maps.

Status: The initial library designs and architecture have been created. The design team is currently incorporating the library content. We are also establishing a requirements document on the EC Library search function.

Addendum material:

Conceptual layout of online library

Task A.11.s: Provide Project Information to National Venues

The approach to the Eastern Corridor PE/EIS is unique in that it breaks new ground in integrating land use with transportation planning. This project is expected to draw significant attention as to whether the process can be duplicated in other regions. The Eastern Corridor public involvement team will provide study information to the transportation, planning and engineering trade organizations and publications to generate interest in the unique study.

Purpose: Generate national trade interest in the Eastern Corridor PE/EIS work.

Deliverables: Trade publication/organization database. Notices of possible award/recognition opportunities.

Status: Trade publication list in development



Eastern Corridor Public Involvement Scope of Services – Status of Deliverables August 5, 2002

Task A.11.a Public Involvement Plan/Schedule

Deliverable: Public involvement plan Status: Complete.

Task A.11.b Public Meetings and Hearings

Deliverable:Meeting materials, documentation, web-cast CDStatus:Handout materials, PowerPoint presentation, web site posting and
summary report complete for round 1 public meetings.

Task A.11.c Public Feedback Channels

- Deliverable: Web site feedback component, telephone hotline, email functionality, PO Box, letter response templates, archival documentation
- Status: Web site feedback and email mechanism complete and archived online, telephone hotline monitored by Balke at Eastern Corridor project office. No public feedback monitored on hotline to date. PO Box replaced by project office mailing address. Response templates (river crossing, rail transit) completed and forwarded to Hamilton County TID for use. All web site feedback archived online. Quarterly reports distributed at Implementation Group meetings.

Task A.11.d Public Information Center

Deliverable:Visitor logs and related documentationStatus:Visitor log complete. Public feedback submitted at project office
integrated in ongoing feedback documentation.

Task A.11.e Special Interest/Community Workshops

Deliverable: Workshop materials and documentation Status: Scheduling of workshops underway. Initial workshops being scheduled for Newtown and EJ focus areas of Madisonville, Evanston, Norwood, South Milford (Camp Dennison) and East End.

Task A.11.f Traditional Public Involvement Materials

Deliverable: Newsletter (4), fact sheets (10), video, flyers and inserts (4). Status: Two issues of newsletter complete. Seven fact sheets complete (general study fact sheet/3, bridge crossing, land use, rail transit, modeling). Video complete. Two flyers/inserts complete (public meetings).

Task A.11.g Media Relations

- Deliverable: Media kit, press releases, media response information, media tour, media coverage archive.
- Status: Media kit complete. XX press releases complete to date. Media response information ongoing. Media coverage archive complete, updated as clippings identified. Media tour to be scheduled when proposed alignments are refined.

Task A.11.h Marketing Communications Materials

Deliverable: Billboards, PSA's, community paper advertisements Status: Billboards placed May/June 2002, next run scheduled for October 2002. PSA's written and distributed to regional broadcast outlets. Advertisement placed in Community Press east side editions May 2002.

Task A.11.i Corporate Citizenship

Deliverable: Member list, information packet, feedback memo. Status: Member list complete and archived online. Information developed for packets. Mailings and calls underway to schedule presentations.

Task A.11.j Speaker's Bureau

Deliverable:Speaker's log, PowerPoint, handoutsStatus:PowerPoint and handouts complete. Speaker's log developed and
updated as new presentations scheduled.

Task A.11.k Project Identity Materials

- Deliverable: Project ID materials, PI instructional information, PI summary reports
- Status: Project letterhead, business cards, name tags, signage, etc. produced. PI instructional information ongoing, PI summary reports distributed monthly and quarterly.

Task A.11.1 Stakeholder/Special Interest Relations

Deliverable: Feedback summary memos.

Status: Database complete. Outreach ongoing. Community workshop scheduling underway.

Task A.11.m Traffic Reporter/Agency Relations

Deliverable: Traffic reporter information and feedback summary memos.

Status: Database complete. Outreach ongoing. Meetings to be scheduled as alternatives are refined.

Task A.11.n Web Site

Deliverable: Web site management update memos. Status: Ongoing memos distributed. Focus group analysis completed for quality control. Web site design near completion in response to focus group and public comments regarding usability.

Task A.11.0 Web Site Trend Analysis

Deliverable:Trend analysis reports.Status:Web trends analysis reports completed and delivered monthly.

Task A.11.r Online Library/Archive

Deliverable:Master listing and web site link, document files and visitor logs.Status:Master listing and web site link live. Document files archived.
Visitor logs tracked through Web trends analysis.

Task A.11.s National Venues

Deliverable: Information update packages, press releases Status: Database of national trade publications and award programs complete. Submission sent to APEX resulting in Award of Excellence for Eastern Corridor web site.

Task A.11.t Participate in Advisory Committee Meetings

Deliverable: Coordination information, handout materials Status: Materials and presentation developed for spring and summer 2002 Advisory Committee meetings.



Appendix B-1b Public Meeting Summaries

Round 1 May – June 2003 Round 2 May 2003 Round 3 January & February 2004 Eastern Corridor PE/EIS Public Meetings Summary Round 1, Spring 2002

PROCESS & PROCEDURES

Spring 2002 Public Meeting Locations:

The first round of public meetings for the Eastern Corridor PE/EIS covered five geographically diverse locations. Three locations (Madisonville, East End, Downtown) were chosen for their proximity to targeted Environmental Justice communities. All locations were ADA accessible.

Monday, May 20, 2002 4-7pm, Eastgate Mall Center Court, Eastgate

Wednesday, May 22, 2002 4-7pm, John P. Parker Elementary Gymnasium, Madisonville

Thursday, May 23, 2002 11am-2pm, Greater Cincinnati Chamber of Commerce, Lobby and Presentation Room, Downtown

Wednesday, May 29, 2002 4-7pm, Turpin High School Cafeteria, Anderson Township

Monday, June 3, 2002 4-7pm, CRC LeBlond Community Center Gymnasium, East End

Goals:

- 1. Educate public about study progress made since final round of public meetings for Major Investment Study (MIS).
- Solicit feedback from public on approach and scope of work for Preliminary Engineering/Environmental Impact Statement (PE/EIS) phase of study.
- 3. Confirm with public the geographic area(s) to be studied in greater detail as the study progresses.

4. Ensure information was fairly shared and feedback gathered from Environmental Justice communities.

Format:

Open house style with staffed information stations, question-specific feedback forms and flip charts for comments and mark-ups. Self-running, narrative, PowerPoint presentation available during entire duration of public meetings. This diversity of presentation allowed for the public to participate equally regardless of educational disparities.

Structure:

Sign-In Table PowerPoint Presentation Area Ten Information Stations with Comment and/or Mark-Up Easels 1. Study Process

- 2. Land Use
- 2. Land Use
- 3. Transportation Needs
- 4. Social & Environmental Factors
- 5. Multi-Modal Approach
- 6. Transportation System Management (TSM)
- 7. Bus Transit
- 8. Rail Transit
- 9. Highway Capacity
- 10. Area for Further Study

Handouts:

- 1. Questionnaire: Cover sheet with 10 feedback pages relating to each information station.
- 2. Multi-page fact sheet.
- 3. Newsletter, volume 1, 2002
- 4. Public Meeting flyer

Feedback Mechanisms:

- 1. Questionnaire with 36 specific queries and sections for open feedback
- 2. Mark-up maps at 5 stations
- 3. Comment flip-charts at all 10 stations

Promotion:

- 1. Web site
- 2. Mailings

EC PE/EIS Public Meeting Summary Round 1, Spring 2002

- 3. Newsletter
- 4. Flyers
- 5. Email pushes
- 6. Billboards
- 7. Newspaper Ads
- 8. Legal Notices
- 9. Media Coverage
- 10. Public Access TV Notices

SUMMARY OF RESULTS

The public meetings were effective in educating the public and soliciting feedback from a diverse group of citizens and stakeholders. The level of project understanding and knowledge varies among the public, but is not divided by demographics. The general study area was confirmed by the public, with direction to emphasize study in environmentally sensitive areas along Little Miami River. Environmental Justice communities were well represented and comments were consistent with those of publics in other communities placing emphasis on transit improvements.

Attendance:

The public meetings gathered approximately 400 attendees based on sign-in sheets and head counts. All public meetings received balanced attendance. Eastgate Mall recorded highest attendance. This higher attendance is attributed to drop-ins from Mall traffic.

Media Coverage:

Media attended most public meetings with articles appearing in the Cincinnati Enquirer, Community Press and Clermont Sun.

General Summary of Comments:

Comments and questions were diverse and typically of the "my backyard" flavor. However, there were some general themes that were identified in the public comments, which are categorized below.

Page 3

General study comments and questions:

- Thorough work with good representation of issues.
- Complexity of information may be overwhelming for public to get involved.

Study area:

- Study area seems appropriate.
- Need to make sure we pay special attention to Little Miami River area and environmental concerns.

Approach to study and recommendations:

- Like the multi-modal approach, but public comments still "pick favorites:" Many comments focus on highway alternatives.
- Some confusion on if/how land use vision plan will be integrated into planning process.
- Questions and comments regarding funding the improvements.
- Questions and comments regarding the need to connect bus transit with the rest of the alternatives. Also, suggestion that Metro should have representative available to answer questions at future meetings.

And the most consistent feedback.... "Move quickly, but carefully."

Summary of Comments by Information Station

Station 1: Study Process:

In general, the comments received were positive in nature. Only two of the written comments regarding process were negative, noting they did not agree with the four goals of the study. There were no comments that said "do nothing," or "no improvements are needed." The public was impressed at the amount of information that was available at the public meetings, however concerns were expressed by some that the amount of information was somewhat overwhelming. The majority of respondents said that improvements of some form were needed. Several respondents had questions about the Hamilton County TID and its role in the project.

Station 2: Land Use:

Most of the respondents said the land use plan addressed the right concepts. A majority of the comments focused on the need for balance between transportation improvements and greenspace preservation and community development. Additional comments emphasized an expectation to integrate EC PE/EIS Public Meeting Summary Round 1, Spring 2002

land use into transportation planning, while at the same time recognizing the approach is the right one.

Station 3: Transportation Need:

Connectivity and modal balance were among the major travel problems repeatedly mentioned. Bottlenecks at Newtown Road, S.R. 32, S.R. 50, I-275 and Beechmont Avenue were also a focus point. People expressed the need for better public transportation, but questioned how we could get people to use it. The majority of attendees and respondents confirmed the representation of the existing transportation problem and agreed with the estimation of the area's future transportation problems and needs.

Station 4: Social and Environmental Factors:

At this station, attendees and respondents confirmed that the project study area is appropriate and provided some minor site-specific notations to the information presented. Flood plain, green space preservation and noise were all mentioned as important issues.

Station 5: Multi-Modal Approach:

Virtually all commenting attendees and respondents thought a multi-modal approach made sense, and many said that the modes must work together in order to make the most efficient use. Some people expressed a clear desire for highway improvements as the main priority, while others expressed a priority for alternate transportation methods. However, most people thought a balance was needed. A number of attendees and respondents had expectations of the public transit role in the future of the Eastern Corridor.

In Stations 6 through 9, a key goal was to see if the public felt the right preliminary alternatives for each of the four "mode groups" were on the table, and if any adjustments or other ideas should be added at this time.

Station 6: Transportation System Management (TSM):

Are the right alternatives on the table? Attendees and respondents felt the right alternatives are on the table for the TSM, part of the overall improvement plan, with some spot additions.

Any ideas for refinements or adjustments? These included consideration of how bus vehicles and stops fit into the roadway network. Many people requested more park-and-rides, and a number of comments suggested the need

EC PE/EIS Public Meeting Summary Round 1, Spring 2002

to resolve some existing road segment alignment issues and bus/traffic flow conflicts.

Station 7: Bus Transit:

Are the right alternatives on the table? The public expressed a desire for more hubs, cross-town routes and park-and-rides, but priorities were generally consistent with the information presented. The greatest interest in new hub locations were at Eastgate Mall and Beechmont Mall, but ideas also included Madisonville and the Red Bank corridor. Many attendees indicated there was not enough specific information given to determine if the correct alternatives were reviewed, although the generalized hub information provided generally matched with public expectations.

Any ideas for refinements or adjustments? Ideas also included more local circulators and neighborhood-to-neighborhood connectors as well as linkages to possible rail systems. Many attendees expressed an interested in receiving detailed information regarding bus routes and schedules and suggested the presence of Metro at future meetings to discuss issues and needs.

Station 8: Rail Transit

Are the right alternatives on the table? The public confirmed that the two basic rail corridors, and alternatives (and segment permutations there of) made sense for further evaluation. When queried about how rail transit would fit in with the attendees' potential use, most attendees thought the Oasis line with a direct downtown riverfront connection would be easier supported, and were somewhat mixed as to whether the line should go to Eastgate or Milford in the east part of the study area. In the East End, many communities expressed concerns over proximity impact (Oasis line).

Any ideas for refinements or adjustments? Many attendees had the expectation that, whichever rail line was selected, it should be planned for further extension eastward in the future. All attendees wanted information on cost vs. convenience. A comment was also received suggesting the need to establish outer-belt rail transit service, along the I-275 corridor.

Station 9: Highway:

Are the right alternatives on the table? Attendees uniformly confirmed that something needs to be done to the existing roadway network and that, if new highway improvements are to be made, the alternatives described for new highway linkages and capacity improvements were appropriate.

Any ideas for refinements or adjustments? Suggested expectations and improvements to the highway alternatives included limiting access points and curb cuts. Some people want the existing roads upgraded before new roads are built. However, many others clearly expressed the need for more efficient linkages and additional highway capacity. Several attendees expressed concern over undesirable development that could result from highway redevelopment and construction.

In Station 10, a key goal was to see if the public felt that the detailed study area embracing the major new "footprint" alternatives was appropriate.

Station 10: Area for Further Study:

Based on all of the feedback received at this station, the general study area was confirmed for the next phase of work with minor additions, based on more specific input received at stations 6 through 9.



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2003 EASTERN CORRIDOR PUBLIC WORKSHOP SUMMARY

Public workshops were held at the Madisonville Recreation Center, Glen Este High School and Cincinnati City Hall Council Chambers. Approximately 100 people attended and reviewed detailed maps of the six focus areas with the multi-modal transportation plan for that specific area. Additionally, the workshops addressed the project background, process, land use, environmental data and preliminary feasible alternatives. All of the displays were organized into four informational stations.

The hands-on interactive approach allowed citizens to talk with project team members about transportation issues relative to their community. Comments and feedback confirmed that the preliminary feasible alternatives in the detailed study area address the significant transportation needs. Public feedback also showed sensitivity to the following areas:

- Historical and environmental issues around the Little Miami River and other areas throughout the corridor.
- Alternatives must complement pedestrian access.
- Importance of access to retail in the Eastgate area.
- The relocation of 32 and the bridge crossing.
- The alignment being studied in Mariemont specific to the Bluffs area.

Communication for the public workshops occurred in several different ways, which included:

- Advertisements in seven community newspapers all located in the study area.
- Press release, which yielded placements in the Cincinnati Enquirer.
- Media alert/photo opportunity, which yielded coverage from WLWT Channel 5.
- Flyer distribution throughout the study area prior to the workshops.
- Announcements in community and organization newsletter.
- E-mail blast to more than 4,000 recipients on the Eastern Corridor database.
- E-mail blast to the City of Cincinnati distribution list.

Tuesday, May 20 - Madisonville Recreation Center 4-7 p.m.

Attendance: 26

Wednesday, May 21 – Glen Este High School 4-7 p.m. Attendance: 39

Thursday, May 22 – Cincinnati City Hall Council Chambers 11a.m.-2 p.m. Attendance: 36



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WINTER 2004 EASTERN CORRIDOR WORKSHOP

SUMMARY REPORT

Contents Include

- 1. Introduction
- 2. Workshop Overview
- 3. Individual Workshop Summaries
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INTRODUCTION

The Winter 2004 Eastern Corridor workshops occurred during a three-week period in five locations throughout the study area. Locations included:

Oakley Community and Senior Center	January 29, 2004
Madisonville Recreation Center	February 4, 2004
Anderson Senior Center	February 5, 2004
Faith Christian Fellowship Church	February 10, 2004
Eastgate Mall	February 11, 2004

The workshop sites were selected based upon where workshops were held during the initial two rounds of meetings. The project's goal at all workshops has been to touch all communities located within the corridor.

STAND ALONE DISPLAYS

In addition to holding community workshops in five locations, we developed displays that were placed in venues that experienced a substantial amount of foot traffic specifically in the downtown area. The goal of the visual was to show the study's progress and further promote the workshops to increase attendance. Locations included:

- The Westin Hotel, Atrium
- Cincinnati City Hall lobby
- Enquirer Building lobby
- Downtown Public Library lobby
- Milford City Building lobby

COMMUNICATION

Additional communication for the public workshops occurred in several different ways, which included:

- Legal advertisements in seven community newspapers all located in the study area
- Press release which yielded placements in the Cincinnati Enquirer, Cincinnati Post, CityBeat, Eastern Hills Journal (twice) and WKRC Channel 12
- On-air interview with WCPO Channel 9
- Flyer distribution
- Announcements in community newsletters
- E-mail blast to more than 4,000 recipients on the Eastern Corridor database

SUMMARY OF FEEDBACK

The following information was taken from all of the community workshops from people who conveyed comments regarding the different aspects of the project. Attendees had the opportunity to review displays, provide comment and submit a written survey. Turnout was excellent at all workshops with an overall attendance of approximately 250 people. The kick-off at the Oakley Community and Senior Center experienced a smaller turnout due to poor weather conditions. However, those that did attend this workshop were able to spend more time one-on-one with members of the project team.

Individual issues and interests ranged from concerns regarding potential impacts on the environment to funding and which transportation mode should be implemented first. There are general themes that emerge from each workshop. However, the common thread throughout was the desire to move forward and begin transportation improvements. There was overwhelming feedback that the individual problems within the jurisdictions should be addressed as well as the need to provide better connectivity and efficiency throughout the study area. Attached to this summary is the actual survey that was distributed during this round of workshops. This survey forms the basis for the following workshop overview as well as individual workshop summaries.

WORKSHOP OVERVIEW

Workshop Location	Geographic Area	Date	Time	*Attendance Sign-In Total: 205 Actual Head Count Total: 250	Attendance Composition
Oakley Community and Senior Center	City of Cincinnati, Hamilton County	01/29/04	6-9 PM	13	People from the Oakley community. Representatives from, Little Miami Incorporated (LMI), Tom Brinkman, state representative as well as representatives from ODOT, OKI Hamilton County and City of Cincinnati.
Madisonville Recreation Center	City of Cincinnati, Hamilton County	02/04/04	6-9 PM	37	Citizens from Madisonville and neighboring communities including Newtown and Mariemont. Representatives from Hamilton County and City of Cincinnati. Significant presence from Save the Animals Foundation (STAF) who are concerned about the project's impact on their current location in Madisonville.
Anderson Senior Center	Anderson Township, Hamilton County	02/05/04	5-8 PM	35	Numerous Anderson Township residents. Very concerned about the project's impact on their residences (Turpin Farms representative). Township trustees and representatives from Hamilton County Engineer's, OKI, SORTA.
Faith Christian Fellowship Church	Village of Newtown, Hamilton County	02/10/04	5-8 PM	66	Attendees were from neighboring Anderson Township, Newtown and Shademoore. Representatives from ODOT, LMI, Anderson Township trustees, Downtown Cincinnati Inc, and the International Visitors Council
Eastgate Mall	Union Township, Clermont County	02/11/04	5-8 p.m.	34	Residents from the Eastgate and Milford area. Representatives from the Sierra Club, Rivers Unlimited and elected officials from Clermont County were in attendance. Workshop held in food court area near main mall entrance. Heavy foot traffic. However, not everyone interested in signing in. Not a controlled area.
				205 = total people who signed in at all of the workshops. 250 = total people who attended including those that did not sign in.	

INDIVIDUAL WORKSHOP SUMMARIES

<u>Survey Results</u> Oakley Community and Senior Center January 29, 2004 6-9 PM

No surveys were completed at this workshop due to the snowstorm and bad road conditions, which produced low attendance. However, attendees did take surveys although to date none have been submitted. The following are comments that attendees did provide via flips charts and mark-up maps.

<u>Flip Chart Comments</u> Oakley Community and Senior Center Workshop

- Make sure comments are accounted for; how is study responding to comments? What about previous meetings?
- Does map include TSM project (should); is there a map for 2030 LOS with a full plan in place; should include I-71 in analysis as well as 471.
- Look at rail/possible expanded but first (no highway crossing initially), more closely following existing rail grade.
- Is this *really* going to happen?
- Is there anything new since last meeting?
- Economic Centers Map: Oakley & Hyde Park shifted north

<u>Map Notes</u> Oakley Community and Senior Center Workshop

- Need Connection 71 Disney
- (Major Modifications to interchange at US 50; will include tie-in to Wooster Pike) noise, traffic, pollution detracts from one of Cincinnati premier parks Ault Park what a *wonderful* view...NOT!
 6-8 lanes?! seems a bit extreme
- Run-off from bridge, high-way into Little Miami

General Themes

Oakley Community and Senior Center Workshop

- Concerns regarding the LMR.
- Issues surrounding interchange at US 50

<u>Survey Results</u> Madisonville Recreation Center Workshop February 4, 2004 6-9 PM

Problem Areas	Priority Projects	Needs/Concerns Focus Areas	Funding	Impacts
Newtown Road	Affected by displacement of Save the Animals Foundation (STAF)	#1 STAF- Advance notice of changes affecting property, relocation assistance, compensation	Highways will get priority	Stop harming Cinti. Neighborhoods with highways
Will not travel during rush hour	How will this affect Eastwood Circle residents?	#1 No highways in Cinti. neighborhoods	Larger benefit to those who live and work in western/central Clermont county. How do you ensure that Hamilton County and the City of Cincinnati don't bear the entire financial burden?	Concerned about impact on STAF and Eastwood Circle
Columbia Parkway is not congested	Put highways in suburbs, not in Cinti. neighborhoods		Need seed money	
Concerned daily travel will become a problem as project moves forward	Madison & Red Bank intersections			
Daily travel doesn't seem to be a problem	Bike trail connecting Xavier Univ. to Little Miami Trails via the Wasson line			
	Little Miami and Clough Pike			

Rail	Bus	Highway
Ohioans love cars, rail	Few Cinti. People ride	Put highway in suburbs,
transit won't be utilized	buses	they will use it
Rail should be a part of	Suggestions look good	Plan looks good. Need
long-term planning		to identify impacted
		residents, businesses
Not sure that rail transit	Some routes are	Not enough information
should be part of long-	inconvenient, an 8	on options. Need more
term, don't see growth	minute care ride	review.
that project is	becomes a 45 minute	
anticipating	bus ride, which would	
	you choose?	
	Improvements should	The City of Cinti. Has a
	have more rural/urban	plan that would lessen
	routes	impact on STAF

No survey responses regarding TSM.

<u>Flip Chart Comments</u> Madisonville Recreation Center Workshop

- What are development plans for old Ford plant?
 - o Are more lanes needed on Red Bank because of old Ford Plant?
- Can more money be funneled to transit?
- How will priorities be set? (Among modes, what sequence?)
- Will this affect my house?
- Wasson better for Rail-to-Trails bikeway
- Who will make final decision about project?
- When will right-of-way takes begin?
- Question about new connect from Ibsen to Kennedy just heard about.
- All/Most of my travel is corridor need more options
- Make maps on website more computer-friendly!
- Concern about keeping access to business along Red Bank
- Concern about status of STAF animal shelter on Red Bank Road. Relocation problems: zoning, housing and moving 600-700 animals
- More concerns about Save the Animals Foundation HUGE issues regarding zoning, relocation, and uprooting 600-700 animals
- Explain TSM!
- Questionnaire too open ended. "What would you like?" instead of "How would you improve?"
- Put local community contact person on the list
- Should have video people can sit in corner and learn
- When will a plan be recommended?
- STAF: Relocation necessary? Difficulty location, and use, acceptance; 700+ animals stressed if road widened? LOE to get what they have; change; who decides? Can they benefit?
- Like the mm idea
- Like the greenway idea
- Protect neighborhoods
- Protect greenspace
- Cross-town bus needed

Map Notes

Madisonville Recreation Center Workshop

- Save the Animal Foundation (STAF) Animal Shelter
 - We're having a lot of trouble getting straight answers in terms of time frame, decision-making, etc.
 - The value in the building & organization is in our service to the community
 - We have so many supporters in Cincinnati
 - VERY difficult & time-consuming for us to move
 - Big zoning issues
 - o Building is very unique, as is our organization would be virtually impossible to duplicate
 - I object to any access at Erie Ave. Don R. Gardner
- What is in place to limit impact on residential area highlighted? (Madison/Duck Creek Rd)
 - This area, the Eastwood Circle has 38-40 houses of which 12+ are "Sears" catalog homes and have some historical value.
 - How will the close proximity to the Madison/Red Bank Interchange Hub affect things like property value, quality of life?

- STAF
- o Zoning Issues
- Moving many animals
- Privately supported
- Please look for alternatives
- What are the development plans (Fairfax area)
- Concern about my house on Eastgate...is it affected?
- STAF: Go Around!!! We have 700 homeless animals.

<u>General Themes</u> Madisonville Recreation Center Workshop

- Concerned about the future of Red Bank Road and how it would impact businesses and organizations that are currently in the area.
- Questions regarding development plans for the area as well as zoning.
- People urged the project to be conscious of the environment, greenspace property values and overall quality of life.
- There were a total of nine surveys collected at this workshop. However, no one responded to the question about TSM.

<u>Survey Results</u> Anderson Senior Center February 5, 2004 5-8 PM

Problem Areas	Priority Projects	Needs/Concerns Focus Areas	Funding	Impacts
471-275	Highway 32 replacement	Areas 4, 5 and 6	Small stages if taxes. Bonds	Newtown Road is full. Open up 5-mile all the way
Avoidable	MetroMoves	Focus Area #2.	Have to be strategic.	Maintain integrity of LMR
32 Mt. Carmel to Newtown.	Focus Area #2.	Focus Area #2 and #6.	Where is the money?	Split 32 from 8 mile to Newtown.
Beechmont & Clough	Expansion of 32	Area #2	Have Sen. Robert Byrd move to OH. Can't fund West VA. DOT.	Concerned about additional volume on 32.
8 Mile Road at SR 32 needs improvement,	8 Mile @ SR 32. LMR crossing	Focus Areas #1 & #2	Make this a priority to state and federal legislators.	Noise abatement
Beechmont Ave. through business district.	River crossing at Red Bank – vehicular.	Focus Area #2 – Build LMR crossing and RT 32 improvements first.		Harm to envt. By having so many vehicles traveling so many extra miles should outweigh minor harm to the LMR.
Too few river crossings.	Red Bank to crossing at Fairfax then going east. Alternative that is placed south of Mariemont in Mariemont acreage.	 #1 – Edwards Rd./I-71 going to Erie #2 – Alt. That has LMR near the RR bridge. #3 –Need bike trail in Terrace Park –Milford #5 – Bus service from Mt. Washing to I-275 #6 – More stoplights to slow speed of traffic from shopping area 		Concerns are regarding the environment and the noise.
St. Rt. 32 Newtown to Eastgate, SR 50 to Newtown Rd. US 50 from Fairfax to Columbia Township				

Rail	Bus	Highway	TSM
Not sure – May encourage development	Neighborhood	Not in favor of another bridge across the	MetroMoves.
in Clermont and discourage growth in	shuttles	LMR.	Aesthetic
Cinti. Neighborhoods.			improvements to
			Beechmont, show
			care.
No rail yet. Too costly.	Privatize them.	Like "parkway" style for corridor.	Toll Roads, Speed
			pass.
Yes to rail.		Split 32 from 8 mile to Newtown.	Focus Area #2
Rail transit should be included	Shuttles.	Facility makes sense.	OH 32 project.
Low priority. Voters rejected by 2:1	Work centers	Is the highway from Fairfax to Newtown to	Lane usage for
margin. METRO provides very good	and traffic	be elevated or on a levy or ground level?	motorized Vespas
service in Anderson Township.	patterns change.	Elevated would be best (like highways in	and other scooters
	Bus service	Louisiana)	and bikes.
	offers more		
	flexibility than		
	fixed rail		
	system.		
Yes to rail in long-term. Vehicular	Majority bus		
improvement in short term.	routes shouldn't		
	transfer at Govt.		
	Square. Do		
	along I-71 N.		
Maybe allow for, but only after			
everything else is done.			

<u>Flip Chart Comments</u> Anderson Senior Center Workshop

- Look at ways to get funded without taxing more
- 6-8 lane highways?
- Red Bank expressway 6-8 LANE?
- Impacts (including noise) in Ault Park
- Mitigation up concerns what? Effective, who determines?
- What does TSM stand for?
- Concern about road traffic problems caused by rail along Wasson (already a problem; crossings with train having R-O-W would make much worse).
- New K-12 school under construction at Delta/Eastern
- Coordinate with Red Bank Re-development underway
- How much \$ per household? (B/C eminent domain)
- I like that you are asking for opinions.
- Road connection to Red Bank is needed.
- Problems are at least this bad NOW (for what you show in future).
- Segment IV Alternative 1
 - Choice under I-275 at Aicholtz connection...follow existing road west of I-275 from curve beyond Rustle (sp?)
 - o Not in favor of Area 6 multi-modal alternative route following Aicholtz west of I-275
- Beechmont mall is now Anderson Town Center
- In Eastgate area, should have a local road network that lets you get around to different places without getting on 32.
- Complete 5-mile Road to SR 32 & Eastern Corridor.
- Educate the public.
- Would like to have more transit options than we do now.
- Would the rail line be 24-hour service?

<u>Map Notes</u> Anderson Senior Center Workshop

• No map information submitted

<u>General Themes</u> Anderson Senior Center Workshop

- Decisions need be made.
- Look long-term at environmental impacts and quality of life issues.
- Rail transportation is a must in this area.
- Impressed by the amount of work and study that has been put into all of the alternatives.

<u>Survey Results</u> Faith Christian Fellowship Church Workshop February 10, 2004 5-8 PM

Problem Areas	Priority Projects	Needs/Concerns Focus Areas	Funding	Impacts
Newtown 32/Eastgate. Floodplain in and around Newtown. Traffic around Newtown.	I-71-Red Bank-32 connection on East. Eastgate bottleneck.	Proceed on as many fronts as possible.	Small stages if taxes. Bonds	Land use controls to protect greenspace along LMR.
Avoidable	Road improvements from I-71 to 275 with rail and bikeway	 #1 – Much better alignment for light rail – it's where population is for ridership – Oasis not enough ridership. #2 – Continue center median with trees like village. #3 – Fine roads but extend bike path to Milford to Lunken. #4 – Bad idea to bring train through riverfront parks on elevated tressels, strange aesthetics of the Banks. 	Very sketchy	Split 32 from 8 mile to Newtown.
28 & I-275 and I31	Focus Area #2.	Focus Area #2 and #3. Milford train seems to be downgraded. New construction in Union Township will increase traffic. Need to Batavia & link U.C. Clermont. Make pedestrian access to shopping areas possible. Continuous access down to Newtown bridge.		Concerned about additional volume on 32.
Beechmont & Clough	Expansion of 32	Area #2		Noise abatement
8 Mile Road at SR 32 needs improvement,	8 Mile @ SR 32. LMR crossing	Focus Areas #1 & #2		Harm to envt. By having so many vehicles traveling so many extra miles should outweigh minor harm to the LMR.
Beechmont Ave. through business district.	River crossing at Red Bank – vehicular.	Focus Area #2 – Build LMR crossing and RT 32 improvements first.		
Too few river crossings.				

Rail	Bus	Highway	TSM
Long-range	More express lanes	Makes sense, let's do it.	All facets as quickly as possible.
Yes along Wasson line to XU and downtown.	More express routes.	Location fine, but protect greenspace along LMR so sod farms & other areas.	Pleased to see Beechwood Road extension included. Would like to see a bike/walk way as part of that.
Rail is the best option to get people out of their cars.	Shuttles.	Facility makes sense.	Focus Area #2
Rail transit should be included	Work centers and traffic patterns change. Bus service offers more flexibility than fixed rail system.		Nothing seems to be missing.
Low priority. Voters rejected by			
2:1 margin. METRO provides very			
good service in Anderson Township.			
Yes to rail in long-term. Vehicular improvement in short term.			

<u>Flip Chart Comments</u> Faith Christian Fellowship Church Workshop

- Rail option best? LRT, Highway
- Planned MMP(?) will not meet future highway capacity needs
- Save The Animal Foundation concerned about the future and Red Bank.
- Can rail really get done?...How about first?
- Multi-modal...hmmm! good idea but will there be support for rail?
- Better to buy one or two farms than residential areas.
- Greenspace idea good!
- No fill/levee in floodplain
- Oasis good uses existing right of way
- Don't understand why expanded bus is not TSM
 - Some increased service and some hubs are TSM?
 - Question about fill on floodplain and possible flood protection use.
- Comment about trip distribution: How many people really go downtown? Future transit usage estimate is way too low – 5% in 2030 is unrealistic – try 25%
- Should have done this project years ago.
- Is transit (bus or rail) really feasible? (cost?)
- Waterway openings?

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- Farming is economic value on river bottoms.
- Need options, but may be just highway.
- Had not thought about freight needs.
- Idea of moving ahead with some things and not precluding others makes sense.
- Sidewalks along RT 50 Southside to Newtown Rd where one is needed; much pedestrian use now.
- Bike lanes along widened parts of US 50 Columbia Township.
- Yes, a new bridge will move traffic already using RT 50 more efficiently through the sensitive valley environment (no stop and waiting in traffic congestion).
- Widen shoulders on 32, etc. for bikes.
- Look at smaller buses.
- Edwards Rd. (in Newtown) don't see on any maps; want to make sure it is noticed in process.
- Why south alignment through sod fields?
- Is 5-mile connector dead?
- Who owns 5-mile R-O-W? is that really a "borrow pit" or an extender?
- Why no traffic lights along new road?
- Beechmont Ave needs work it's a disaster.
- LMR Bridge evokes concerns.
- Connector between new SR 32 & 5-mile/SR 125?
- Benefits to Anderson Township and Mercy Hospital?
- Beechmont Hub needs sidewalk access to residential areas.

<u>Map Notes</u> Faith Christian Fellowship Church Workshop

- This looks like trouble for the hillside...plus noise problems. (RT 50, around Mariemont).
- No Highway! (Newtown area)
- Why was this location dropped around Round Bottom Road?
- Have you negotiated with Norfolk Southern Railroad about possible buy-out?
- This road location would destroy prime farmland; cannot replace by moving to new location. The soils here are Huntington soils, which allow our farm production time to be cut by 11 months. You can't find soils like this anywhere else in Ohio. Also, this farm is the oldest farm in Ohio, recognized by Governor Taft in 2002. This farm has been in the fame family for 219 years. Keep road to back part of property. This would have the least amount of impact on the Turpin, Motz and Haffner families, which hold most of the land.

<u>General Themes</u> Faith Christian Fellowship Church Workshop

- Looking for more efficient connectivity in the area as well as to downtown
- Concerns regarding area properties, specifically family farms
- Questions regarding status of five mile
- Looking for sidewalk and bikeway access
- Rail transit is viewed favorably by most
- Status of railroad ownership and use of existing rail lines

<u>Survey Results</u> Eastgate Mall Workshop February 11, 2004 5-8 PM

Problem Areas	Priority Projects	Needs/Concerns Focus Areas	Funding	Impacts
Heavy traffic on 32. 1.5 miles takes 20 minutes during afternoon rush hour.	Improve access from 275 to 32 in both directions.	#6 focus area is a priority.	Allow businesses to deduct any monetary – no strings- contributions they make from their taxes.	Impact of bridge LMR is grossly overstated.
South Milford, Roundbottom, Beechwood and Summerside roads and old 74.	Milford thru traffic and 28 are bad.	#3 – Needs to be and alternate way around Milford.#6 – Overcrowded	How would local funds ranked?	Pollution from cars idling while sitting in traffic is far greater than cars moving freely over a well constructed bridge.
OH 28, US 50 ad OH 131 are clogged on both sides of I-275 at rush hour and as early as 1:30 PM.	Light rail linking and eastern industry hubs.	Focus area #6		

Rail	Bus	Highway	TSM
Need plenty of parking near future rail line stops.	Sidewalks to get pick up areas (i.e. along Summerside Road.)	Highway configuration options are outside the corridor.	Reconnection to Aicholtz Road under 275 would alleviate some congestion for now.
Definitely. Rail should be a priority.	The Milford Bus Rail hub should be a must do.	The highway facility described makes sense.	Nothing new to be added to list of projects.
Rail is number one for this project.	Move east-west cross county route from basin past I-275		Need to use diesel fuel for light rail.
Light rail stations at Eastgate should be designed so that a connection could start there and run along the existing rail line.			

Flip Chart Comments

Eastgate Mall Workshop

- More over passes on SR 32 (Like the ones at 275)
- Do no like "highways" as a one-dimensional approach, but really like different multi-level pieces linked up with highways (good plan)
- If you can pull this off, it would be such a great statement for how things should be done.
- Need to extend highway through Indian Hill to I-275 (or via Remington)
- Need good major road right from Clough Pike and Center of Anderson Twp to Red Bank/I-71
- Can this really be done without new tax?
- Consider direct (ramp) access from I-275 northbound to Aicholtz and from I-275 southbound to SR 74 to allow local travel option to avoid 275/32 interchange
- Aicholtz reconnection would improve access
- Need overpasses on SR 32
- No interchange at I-275/Clough
- Connect RT 50/Milford to Olive Branch interchange
- Relocation of interchange to the west has tremendous negative social impact...Delete!
- Roadway plan makes sense: don't want or need pure freeway connections from 275-71, but do need a more direct connection with access control; try to minimize property impacts
- No more taxes
- Existing roads (SR 28) are not taken care of
- Need good bus service to Kings Island from Beechmont
- Drive downtown from Bethel, park, take express bus to Kings Island every 50 minutes)
- Light rail to downtown would be very useful
- It is idle to suggest you can mitigate the damage a truck way will do to a national wild & scenic river
- SR 125 to Mt. Carmel too basic should be able to use "stipend" pavement as right turn lane would help traffic flow
- Where are turn lanes and sidewalks for Clough Pike?
- Maintain access to summer cottages (Newtown area)
- Why weren't Focus Area group members added to PE/EIS PI list (project mailing list)?
- Glad to see something in this area is finally happening
- Believe bridging little Miami could be done "right" and actually improve river protection
- NO new bridges or highways
- Benefits of light rail, especially for Clermont County residents
- People may have trouble understanding or visualizing rail transit
- Noise wall on 275 made noise worse
- I think people would really use a new rail transit line that goes Milford-Newtown-Downtown; lots of people from Anderson would go to Newtown to get on train
- When and what is time frame for railway acquisition?
- Important to maintain connection between SR 32 and eight-mile rd; be aware there is traffic flow from Mt. Carmel Rd to Eight Mile Rd
- Connection between Roundbottom Rd and Milford Parkway needed to reduce traffic on SR 32 and I 275; also would provide easier access to Beechwood/Mt. Carmel communities from Milford commercial development and the interstate
- Should move as quickly as possible to preserve right-of-way (pick a location soon)
- No Bridge over the Little Miami River!
- 275/32 interchange was better when they had detour ramps for construction
- Plan is a dumb idea

<u>Map Notes</u> Eastgate Mall Workshop

- HCPO/City Cincinnati planned (CRC) t-rail (2005 construction) near little Miami river
- Eliminate new interchange at I275 and New Bach-Buxton Connector

<u>General Themes</u> Eastgate Mall Workshop

- Concern regarding LMR bridge
- Concern regarding noise issue
- Residents see benefits of rail as a connector to downtown
- Roundbottom, Aicholtz roads need attention
- Funding is a concern, no new taxes
- Pedestrian access is important
- Specifics for roadway improvements through focus area #6 (see flip chart comments)



Appendix B-1c Locations and Dates of Community Workshops/Speaker's Bureau

Eastern Corridor PE / EIS Speaker Bureau / Community Presentations (2003)

10/22/03

Organization	Status
Anti-Light Rail Transit	complete - 1/6/03
Avondale Community Council	Presentation offered
Batavia Village Council	complete - 8/4/03
California Community Council	complete - 4/8/03
Clifton Town Meeting	Presentation offered
Council	Presentation offered
Corryville Community Council	Presentation offered
CUF (Clifton/University/Fairview)	Presentation offered
Downtown Residents Council	Presentation offered
Eastgate Mall	Presentation offered
Eastgate Area Business Stakeholders	complete - 5/8/03
East End Area Council	Presentation offered
East End Neighborhood	Presentation offered
East Walnut Hills Assembly	Presentation offered
Evanston Community Council	complete 4/17/03 & 10/16/03
Hyde Park Neighborhood Council	Presentation offered
Kennedy Heights Community Council	Presentation offered
Linwood Community Council	complete -3/25/03
Lunken Advisory Committee	Presentation offered
Madisonville Community Council	complete - 5/15/03
Mariemont Chamber of Commerce	complete - 10/1/03
Mariemont Kiwanis Club	complete - 9/2/03
Mariemont Village Council	complete - 6/23/03
Mt. Adams Civic Association	Presentation offered
Mt. Auburn Community Council	Presentation offered
Mt. Lookout Community Council	complete - 6/16/03
Mt. Washington Community Council	Presentation offered
North Avondale Neighborhood	
Association	Presentation offered
Oakley Community Council	Presentation offered
Over-the-Rhine Community Council	Presentation offered
Pendleton Community Council	Presentation offered
	Informal meeting on 10/7/03 -
	Formal presentation scheduled
Shademoore Residents	for Spring 04
South Milford Neighborhood Council	complete - 3/23/03
Terrace Park Village Council	1_{0}
Terrace Park Village Council	complete - 6/11/03 Presentation offered
Terrace Park Village Council The Heights Community Council Union Township	Presentation offered complete - 10/14/03

Eastern Corridor PE / EIS Speaker Bureau / Community Presentations (2002)

Organization	Date Completed
Batavia Township	complete 9/17/02
Cincinnati Chamber of Commerce	complete 4/16/02
Citizens Civic Renewal	complete 10/10/02
Clermont Chamber of Commerce	complete 1/15/02
Columbia Township	complete 8/20/02
Columbia-Tusculum	complete 8/19/02
Downtown Residents Council	complete 10/8/02
EAC	complete 6/19/02
East End Area Council	complete 10/14/02
Economic Development Ohio	complete 6/12/02
Kennedy Heights Community Council	complete 11/14/02
Hyde Park	complete 10/10/02
Lead Clermont	complete 11/7/02
Linwood Council	complete 8/27/02
Madisonville	complete 9/26/02
Madisonville Community Council	complete 8/27/02
Madisonville Community Council	complete 10/17/02
Mariemont Preservation Foundation	complete 9/26/02
Mt. Washington Community Council	complete 5/15/02
Newtown Council	complete 10/2/02
Newtown Council	complete 8/14/02
Oakley Community Council	complete 9/3/02
OKI Environmental Justice	complete 9/16/02
South Milford Neighborhood Council	complete 8/26/02



Appendix B-1d Listings of Special Interest Groups, Stakeholder Organizations and Corporate Contacts

E (

Eastern Corridor PE/EIS Community Organizations

Organization Name	Address
Mt Washington Community Council	B.O. B. 20207
Mt. Washington Community Council Clermont 2002	P.O. Box 30387
	119 W. Main St.
Mt. Washington Community Council	PO Box 30387
Madisonville Community Council	PO Box 27322
Boy Scouts of America-Dan Beard Council	2331 Victory Parkway
South Milford Neighborhood Association	780 Garfield
	Rookwood Tower, suite 549, 3805 Edwards
Citizens for Civic Renewal	Rd.
California Community Council	5814 Kellogg Ave.
East End Neighborhood	2057 Eastern Ave.
Pendleton Heritage Center	2760 Eastern Ave.
Columbia Tusculum Community Council	345 Tusculum Ave.
East End Area Council	PO Box 26182
Mt. Lookout Civic Club	PO Box 8444
Citizens for Civic Renewal	3744 Indianview Ave.
East Walnut Hills Assembly	2530 Moorman Ave.
Linwood Community Council	4716 Wilmer Ct.
Downtown Residents Council	22 Garfield Place
Hyde Park Neighborhood Council	
Cincinnati BIKE/PAC	3074 Portsmouth Ave.
Corryville Community Council	256 E. University Ave.
The Heights Community Council	PO Box 19710
Evanston Community Council	PO Box 12128
Avondale Community Council	870 Blair Ave.
CUF (Clifton/University/Fairview)	2420 Clifton Ave.
Walnut Hills Area Council	PO Box 6397
Mariemont Preservation Foundation	3919 Plainville Rd.
Kennedy Heights Community Council	6566 Montgomery Rd.
Clifton Town Meeting	3750 Middleton Ave.
Mt. Adams Civic Association	1046 St. Paul Place
Over-the-Rhine Community Council	1713 Vine St.
Mt. Auburn Community Council	PO Box 19138
Pendleton Community Council	
Citizen	7467 Lawyer Road
Community Action Agency	2904 Woodburn Ave.
Lunken Advisory Committee	250 East 5th St., suite 1200
Hyde Park Neighborhood Council	PO Box 8064
North Avondale Neighborhood Association	617 Clinton Springs Ave
Oakley Community Council	PO Box 9244
Madisonville Community Council	5200 Whetsel Ave.
Community Action Agency	2904 Woodburn Ave.
Bloomfield Hills Association	2283 Donnington Lane
Red Bank Road Neighborhood	
Neu Dank Kuau Neighbulliuuu	6 Forest Hill Drive

Eastern Corridor PE/EIS Environmental and Greenspace Organizations

Organization Name	Address
Ohio Department of Natural Resources	
(ODNR), Division of Wildlife	1840 Belcher Drive; Bldg G-3
Hamilton County Environmental Services	
Friends of the Great Miami	
Hillside Trust	
Little Miami Partnership	
Ohio Environmental Protection Agency (EPA)	122 S. Front Street
US EPA-Region 5	77 W. Jackson Blvd. MCB-19J
Cincinnati Park Board	
Hillside Trust	PO Box 8625
Rivers Unlimited	515 Wyoming Ave.
Sierra Club	309 Ludlow Ave., suite 30
Sierra Club	2911 Glendora
ODNR, Scenic Rivers	5560 Mt. Zion Road
ODNR, Scenic Rivers	1889 Fountain Square Court
Cincinnati Nature Center	4949 Tealtown Rd.
Little Miami Inc.	6040 Price Rd.
Riverfront East Trail Association	
Hamilton County Park Board	10245 Winton Rd.
Regional Greenspace Initiative	3144 Columbia Parkway

Eastern Corridor PE/EIS Business Groups

Organization Name	Address
Hamilton County Development Corporation	1776 Mentor Ave.
Downtown Cincinnati Inc.	617 Vine Street, suite 1200
Columbia Tusculum Economic Development	3738 Eastern Ave.
Greater Cincinnati Chamber of Commerce	300 Carew Tower, 441 Vine Street
City of Cincinnati Economic Development	
African American Chamber of Commerce	108 William Howard Taft
Clermont County Chamber of Commerce	553 Chamber Dr.



Appendix B-2 Environmental Justice

Appendix B-2a Environmental Justice Action Plan

Appendix B-2b Environmental Justice Community Organizations



Appendix B-2a Environmental Justice Action Plan

EASTERN CORRIDOR PE/EIS PUBLIC INVOLVEMENT ENVIRONMENTAL JUSTICE ACTION PLAN

Environmental Justice (EJ) has become a prominent issue for public agencies and associated planning processes. The basis for Environmental Justice is Title VI of the Civil Rights Act of 1964, which states:

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."

In addition, orders by federal agencies clarified the need to involve the potentially affected publics in transportation decision-making processes and assess the equity of investments. The targets of Environmental Justice initiatives have been defined as minority and low-income populations. However, the Eastern Corridor PE/EIS will also apply EJ practices to the elderly population, people with disabilities and zero-car households.

2000 census data will be the statistical method for identifying EJ target groups in the Eastern Corridor according to the Ohio-Kentucky-Indiana Regional Council of Governments' Policy for Environmental Justice. The following public involvement tactics will be utilized to engage those communities identified as EJ target groups.

- 1. Public Meetings
 - To be held in EJ communities at two critical public check-in points during part A work of PE/EIS. Facilities will be handicap accessible and on bus route to enable participation from all publics.
- 2. Public Information Center
 - To be located in EJ community. The facility will be handicap accessible and on bus route to enable participation from all publics.
- 3. Community Workshops
 - Minimum of one per identified EJ target group. Will focus on unique issues and needs as identified by each EJ community. Facilities will be handicap accessible and on bus route to enable participation from all publics.

4. Media Relations

- Major efforts will be targeted to metropolitan dailies and broadcast outlets for maximum reach. Community and special interest publications serving EJ target groups will also be identified and pursued for more targeted communications.
- 5. Stakeholder Relations/Networking
 - Identification of and relationship building with key members and influencers of EJ target groups. This would include elected officials, community council representatives, church leaders, business leaders, etc.
- 6. Speaker's Bureau
 - Trained project representatives will be available to speak "on request" to EJ target groups.
- 7. Informational Materials
 - Fact sheets, newsletters, flyers and video to be available at key locations for members of EJ target groups to obtain information on the project. Sample locations would be libraries, community centers, etc.
- 8. Advertising/Promotions
 - Traditional marketing tactics (billboard ads, newspaper ads) will be utilized in EJ communities to ensure outreach to all geographic areas of the Eastern Corridor is balanced.
- 9. Feedback Solicitation
 - Web site
 - Telephone hotline/Voice Mail
 - Comments submitted at Public Information Center
 - Mailed comments
 - Surveys (Web site, meetings, workshops)
- 10. Advisory Committee
 - Periodic check-ins with Eastern Corridor advisory committee to provide updates on EJ activities and receive guidance via representatives' feedback.



Appendix B-2b Environmental Justice Community Organizations

Eastern Corridor PE/EIS Environmental Justice Groups

Organization Name	Address	
East End Adult Education Center	4015 Eastern Ave.	
Cincinnati Black United Front	1829 Elm Street	
Greater Cincinnati Coaltion/People w/Disabilities		
Madisonville Emergency Assistance Center	5915 Madison Rd.	
Cincinnati Recreation Commission - Leonard		
Shore Senior Center	4745 Playfield Lane	
The Arc	1821 Summit Road, Suite 030	
Cincinnati Recreation Commission -		
Madisonville Senior Center	5021 Whetsel Ave.	
Mt. Washington Church Christ Outreach	3700 Eastern Ave.	
Cincinnati Recreation Commission - Mt.		
Washington Community Center	1715 Beacon St.	
New Life Temple/Caring & Sharing	5922 Prentice Ave.	
Seven Hills Neighborhood/East End		
Services	3806 Eastern Ave.	
Center for Independent Living Options	632 Vine St. suite 601	
Southeast Ecumenical Ministries (SEM)	6474 Beechmont Ave.	
Carnegie Center of ColumbiaTusculum	3738 Eastern Ave.	
Washington United Church of Christ	2950 Sidney Ave.	
Baptist Ministers Conference		
Better Housing League	2400 Reading Rd.	
Family & Children 1st Initiative, Batavia	2400 Clermont Center Dr.	
National Association for the Advancement of		
Colored People (NAACP)		
Greater Cincinnati Coalition for Homeless		
Cincinnati Recreation Commission -		
Kennedy/Woodford Center	6065 Red Bank Rd.	
Family & Children 1st Initiative, Felicity		
St. Leo Church	2573 St. Leo Place	
Urban Appalachian Council	2115 West Eighth Street	
Mt. Carmel Baptist Church	3101 Eastern Ave.	
Cincinnati Recreation Commission -		
Ebersole Community Center	5701 Kellogg Ave.	
Cincinnati Community Action Now	200 W. 4th St.	
Urban League	3458 Reading Road	



Appendix B-3a Historical Societies

List of Historical Organizations for Section 106 Public Involvement Eastern Corridor PE/EIS, Hamilton and Clermont Counties, Ohio

ORGANIZATION	ADDRESS
Ohio Historical Preservation Office	567 East Hudson Street Columbus Ohio 43211
Mariemont Preservation Foundation	3919 Plainville Road Cincinnati, Ohio 45227
Indian Hill Historical Society	8650 Camargo Road Cincinnati, Ohio 45243
Cincinnati Preservation Association	342 West 4 th Street, Cincinnati, Ohio 45202
City of Cincinnati	2 Centennial Plaza 805 Central Avenue 45202
Village of New Richmond	102 Willow Street New Richmond, Ohio 45157
The Ohio Historical Society	1985 Velma Avenue Columbus, Ohio 43211
Taft Museum	315 Pike Street Cincinnati, Ohio 45202
Harriet Beecher Stowe House	2950 Gilbert Avenue Cincinnati, Ohio 45206
Cincinnati Federation of Colored Women's Club Inc.	1010 Chapel Street Cincinnati, Ohio 45206
Archaeological Society of Ohio	301 ½ Fairmont Avenue Mount Vernon, Ohio 43050
Ohio Archaeological Council	P.O. Box 02012 Columbus, Ohio 43202
Cincinnati Historical Society and Museum of Natural History	1301 Western Avenue Cincinnati, Ohio 45203
Clermont County Historical Society	P.O. Box 14 Batavia, Ohio 45103
Anderson Township Historical Society	6550 Clough Pike Cincinnati, Ohio 45244
Greater Milford Area Historical Society at Promont	906 Main Street Milford, Ohio 45150



Appendix B-3b Native American Tribes

Native American Tribes Cultural Resources Mailing List for Section 106 Public Involvement Last Revised Thursday, April 22, 2003

Kenneth Daugherty, Tribal Secretary Attn: Jennifer Makaseah, Cultural Preservation Absentee-Shawnee Tribe of Oklahoma 2025 Gordon Cooper Drive Shawnee, Oklahoma 74801-9381 405-275-4030 ext. 124 405-275-1922 fax jenniferm@astribe.com

Mr. John A. Barrett, Jr., Chairperson Attn: Ms. Lisa Kraft, NAGPRA Contact Citizen Potawatomi Nation 1601 S. Gordon Cooper Drive Shawnee, Oklahoma 74801 405-275-3121 405-275-0198 fax 800-880-9880

Mr. Mike Pace Jim Rementor, NAGPRA Director Delaware Tribal Headquarters 220 N.W. Virginia Avenue Bartlesville, Oklahoma 74003 918-336-5272 <u>mpace@delawaretribe.org</u>

Mr. Bruce Gonzales, President Attn: David M. Scholes, NAGPRA Director Delaware Tribe of Western Oklahoma P. O. Box 825 Anardarko, Oklahoma 73005 405-247-2448 405-247-2448 ext. 162 (Scholes) 405-247-9393 fax aapanahkih@westerndelaware.nsn.us Mr. Dee Ketchum, Chief www.delawaretribeofindians.nsn.us

www.westerndelaware.nsn.us history@westerndelaware.nsn.us Mr. Charles D. Enyart, Chief Eastern Shawnee Tribe of Oklahoma P. O. Box 350 Seneca, Missouri 64865 918-666-2435 ext 241 916-666-3325 fax

http://eighttribes.org/easternshawnee

Mr. Harold Frank, Chairperson Attn.: Ms. Clarice M. Werle, NAGPRA Contact Forest County Potawatomi Community of Wisconsin Potawatomi Indians P. O. Box 340 Crandon, WI 54520 715-478-2903 (Frank) 715-478-7381 (Werle) 715-478-7385 fax

Mr. Kenneth Meshiguad, Chairperson Hannahville Indian Community of Wisconsin Potawatomi Indians of Michigan N14911 Hannahville B 1 Road Wilson, Michigan 49896-9728 906-466-2934 906-466-2933 fax

Mr. Floyd Leonard Attn.: Ms. Julie Olds, THPO Miami Tribe of Oklahoma 202 South Eight Tribes Trail P. O. Box 1326 Miami, Oklahoma 74355 918-542-1445 ext 16 (Olds) 918-542-7260 fax jolds@miamination.com

Mr. Charles Todd, Chief Ottawa Tribe of Oklahoma P. O. Box 110 Miami, Oklahoma 74355 918-540-1536 918-542-3214 fax www.geocities.com/RainForest/7156/westhome.html

http://eighttribes.org/ottawa

Mr. John P. Froman, Chief Attn.: Ms. Charla K. Reeves, NAGPRA Contact Peoria Tribe of Indians of Oklahoma P. O. Box 1527 Miami, Oklahoma 74355 918-540-2535 ext. 20 (Reeves) 918-540-2538 fax

Mr. Michael Zimmerman, Chairperson Pokagon Band of Potawatomi Indians of Michigan P. O. Box 180 58620 Sink Road Dowagiac, Michigan 49047 616-782-6323 616-782-9625 fax

Mr. Badger Wahwasuck, Chairperson Attn.: Mr. Rey Kitchkumme Prairie Band of Potawatomi Indians 16277 Q Road Mayetta Kansas 66509-8970 785-966-2255 (Kitchkumme) 785-966-2144 fax

Mr. Jerry R. Dillner Attn.: Ms. Roberta A. Smith, Cultural Specialist Seneca-Cayuga Tribe of Oklahoma R2301 E. Steve Owens Blvd., Box 1283 Miami, Oklahoma 74355 918-787-6502

Ms. Kathleen Mitchell, THPO Seneca Nation The Seneca-Iroquois National Museum 794 Broad Street Salamanca, NY 14779 716-945-1738 (Mitchell) Midge Deanstock, Museum Director snithpo@netscape.net http://eighttribes.org/seneca-cayuga

www.sni.org

Mr. Ron Sparkman, Chairman Attn.: Rebecca Hawkins Shawnee Tribe P. O. Box 189 Miami, OK 74355 918-256-6914 918-256-1201 shawnee_environmental@neok.com

Mr. Richard Monette, Chairperson Attn.: Mr. Kade Ferris, NAGPRA Contact Turtle Mountain Bank of Chippewa Indians P. O. Box 900 Belcourt, ND 58316 701-477-6003 (Ferris) 701-477-6003 fax

Mr. Leaford Bearskin, chief Attn.: Ms. Barbara Kyser-Collier, Environmental Director Wyandotte Nation P. O. Box 250 Wyandotte, OK 74370 918-678-2297 ext. 241 (Kyser-Collier) 918-678-2944 fax



Appendix B-3 Section 106 Public Involvement

Appendix B-3a Historical Societies

Appendix B-3b Native American Tribes

Appendix B-3c Tribal Coordination Letter and Comments



Appendix B-3c Tribal Coordination Letter and Comments



Attached is a sample copy of the tribal letters and early coordination materials sent to the pertinent and recognized tribes for the above proposed project. We are also attaching a list of those to whom the letters and attachments were sent. Two of the letters, for Mr. Charles D. Enyart, Chief of the Eastern Shawnee Tribe of Oklahoma, and Mr. Badger Wahwasuck, Chairperson of the Prairie Band of Potawatomi Indians, were sent to FHWA for direct coordination from them on FHWA letterhead, as these two tribes prefer to coordinate directly with the FHWA, rather than coordinate through ODOT.

If you have any questions or concerns, please contact Marilyn Orr, Staff Archaeologist at 614-752-8279 or by e-mail at <u>"morr@envsrv@projmgmt."</u>

TMH:mro

Attachments

c: Mark Vonder Embse, FHWA, Ohio Division; Larry Hoffman, ODOT-OES; File w/attachments; Reading File



OHIO DEPARTMENT OF TRANSPORTATION Central Office, P.O. Box 899, Columbus, Ohio 43216-0899 OFFICE OF ENVIRONMENTAL SERVICES

14 June 2003

Mr. Bruce Gonzales, President Attn: David M. Scholes, NAGPRA Director Delaware Tribe of Western Oklahoma P. O. Box 825 Anardarko, Oklahoma 73005

Re: HAM-SR 32-0.00 - (PID 22970) Eastern Corridor Study

Dear Mr. Gonazles:

The Ohio Department of Transportation (ODOT) has released early coordination materials for the Eastern Corridor Transportation Study in Hamilton and Clermont Counties, Ohio, which represents Cincinnati's eastern metropolitan area. We are enclosing these materials for your information. This study is a long-term process and this is to let you know that the process has been initiated.

At present, any effect to cultural resources is unknown, however, ODOT's Office of Environmental Services (OES), on behalf of the Federal Highway Administration (FHWA) wishes to begin the flow of information to Native American Tribes relative to an early coordination effort.

Should you require information other than what is included in the enclosed materials, please refer to the bottom of Page 1 and the bottom of Page 3 of these materials for the web site contact. You may also contact the FHWA at:

Federal Highway Administration Attention Mark Vonder Embse, Urban Programs Engineer 200 North High Street Columbus, Ohio 43215-2408 or by e-mail at <u>Mark.Vonderembse@fhwa.dot.gov</u> HAM-SR-32-0.00 (PID 22970) Eastern Corridor Study

14 June 2003

or, ODOT-OES at:

Ohio Department of Transportation, Office of Environmental Services Attention: Paul Graham, Assistant Environmental Administrator, 1980 West Broad Street, Columbus, Ohio 43223 or by e-mail at <u>Paul.Graham@dot.state.oh.us</u>

with any written comments or concerns. We will keep you informed as the planning process progresses.

Thank you for your time and consideration.

Respectfully,

Timothy M. Hill Wahan for

Administrator, Office of Environmental Services

Enclosures

c: Hans Jindal, DEC, ODOT-District 8; File w/attachments; Reading File

Eastern Corridor PE/EIS Fact Sheet

WHAT IS THE EASTERN CORRIDOR PROJECT?

- It is a public infrastructure investment study.
- It evaluates building multi-modal transportation solutions, including rail, bus, highway, and bikeway components, in eastern Hamilton and western Clermont counties.
- It examines the possible social, economical and environmental effects of the proposed transportation solutions.

WHY IS THE EASTERN CORRIDOR PROJECT NECESSARY?

- There is a lack of transportation mobility coupled with travel inefficiencies and road congestion in the Eastern Corridor. These transportation problems affect the movement of goods and services, as well as people.
- Population is expected to increase by 22 percent by the year 2020.
- Employment level in the area is expected to increase by 32 percent by the year 2020.
- Trips within the corridor that currently take 30 minutes will take an hour or more by 2020.
- The environment is being affected by traffic congestion.
- · Economic development is being hindered due to lack of mobility and congestion.

WHERE IS THE EASTERN CORRIDOR?

- The Eastern Corridor extends east from the Cincinnati Business District to Milford, Batavia and Amelia, as well as into Northern Kentucky along I-275 and I-471. Physical improvements will focus on Ohio study areas.
- The project includes the following "focus areas:" Ohio State Route 32, Eastern Avenue/Luken, Wooster, Red Bank, Wasson and River Plains.

WHO ARE THE SPONSORS OF THE EASTERN CORRIDOR PROJECT?

- Hamilton County
- Clermont County
- Anderson Township
- Ohio Department of Transportation
- City of Cincinnati
- SORTA/Metro
- OKI Regional Council of Governments

WHO IS MANAGING THE EASTERN CORRIDOR PROJECT?

By agreement of the Sponsors, the project is under the administration of the Hamilton County Transportation Improvement District.

WHAT IS THE RECOMMENDED AREA FOR DETAILED STUDY?

The portion of the Eastern Corridor Project area that encompasses the expected impact footprint for the conceptual alternatives currently being considered for the project, including highway, rail and bus transit hubs, pedestrian and bike facilities. This area was initially identified based on recommendations from the Eastern Corridor Major Investment Study, with further refinement based on input from the recent public involvement meetings and study team recommendations. This will be the focus of the preliminary engineering and upcoming environmental field studies scheduled for late August, 2002.

The Eastern Corridor project is a study evaluating transportation improvements needed in the eastern sector of the Cincinnati metropolitan area. For more information, visit the Web site at www.easterncorridor.org, leave a message on the voice mail/fax at (513)271-3898 or write to Eastern Corridor Project Office, 4790 Red Bank Expressway, Suite 206/208, Cincinnati, OH 45227.

Dear:

The Eastern Corridor Study has made significant progress in working to improve the movement of people, goods and services while providing connectivity to the economic centers throughout the study area. The Eastern Corridor area includes eastern Hamilton County and western Clermont County. In this landmark effort, 17 jurisdictions joined together to develop a viable land-use plan that has become the catalyst for the transportation improvements in the area.

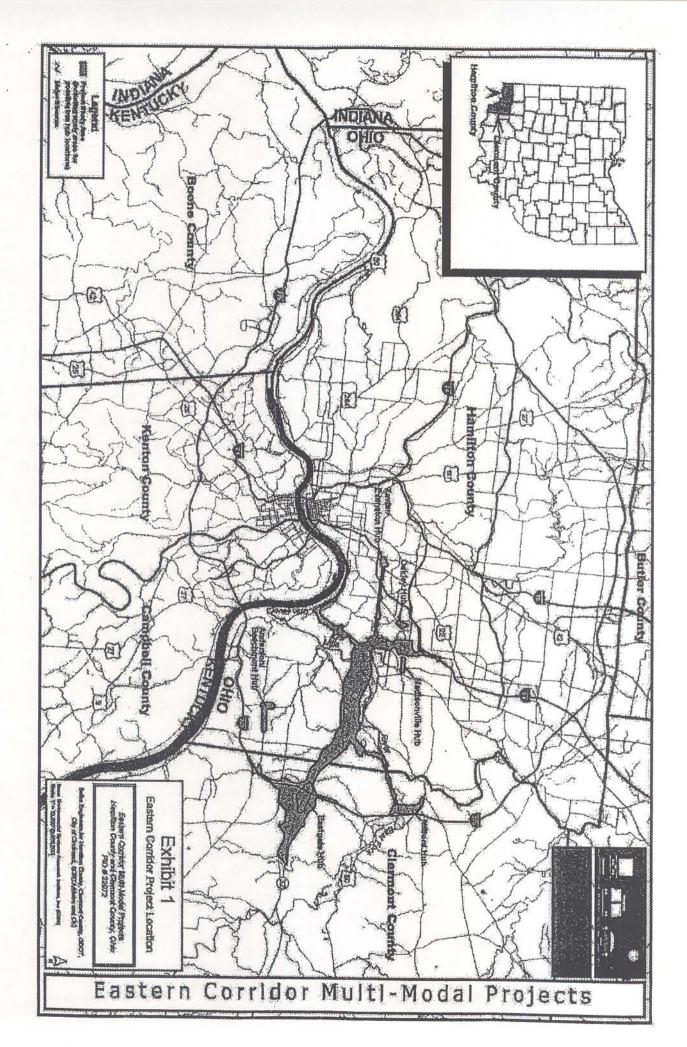
There is no single answer to the transportation needs of the Eastern Corridor. Therefore, the approach to transportation planning includes a mixture of integrated solutions that are effective and comprehensive. The Major Investment Study (MIS) recommendations include multiple modes of travel to accommodate the varying needs of the different communities. The modes include:

- Transportation Systems Management (TSM)
 - a. Expansion of ARTIMIS
 - b. Intersection improvements
 - c. Improved signal timing and coordination
 - d. Installation of park-and-ride facilities
 - e. Development of bike/pedestrian paths
- Expanded Bus Service
 - a. New and extended routes
 - b. Expanded bus fleet
 - c. New transit hubs
- Rail Transit
 - a. Diesel or electric light rail equipment
 - b. Oasis Line > east
 - c. Wasson Line > east
- Highway Capacity Improvements
 - a. SR 32 and Red Bank Corridor improvements
 - b. New or improved interchanges (including SR 32/I-275)
 - c. Incorporation of bike, pedestrian and transit components

The next round of public workshops is scheduled for May 2003. The focus of these forums is to review updated general alignments for the recommended modes (bus, rail and highway), and to review expanded environmental and preliminary performance (modeling) data being used to evaluate the various alternatives. There have been many interesting project developments and the Eastern Corridor project team is excited to present the preliminary results in a public forum. Below are the scheduled dates and locations for the upcoming workshops:

- Tuesday, May 20, 2003 Madisonville Recreation Center 5320 Stewart Road 4:00 p.m.-7:00 p.m.
- Wednesday, May 21, 2003
 Glen Este High School
 4342 Glen Este-Withamsville Road
 4:00 p.m.-7:00 p.m.
- Thursday, May 22, 2003
 Cincinnati City Hall Council Chambers 801 Plum Street 11 a.m.-2:00 p.m.

For more information about the Eastern Corridor Study, please visit the Web site at <u>www.easterncorridor.org</u>; leave a message on the voice mail/fax at 513. 271.3898 or write to the Eastern Corridor Project Office, 4790 Red Bank Expressway, Suite 206/208, Cincinnati, OH 45227.







Attached is one photocopy of the letter of response from the Delaware Tribe of Indians located in Bartlesville, Oklahoma.

The Delaware Tribe has no objection to the proposed project. However, they request that should human remains be encountered during construction of the project, that construction be halted and that the appropriate Indian Tribes be informed of the inadvertent discovery.

If you have any questions or concerns, please contact Marilyn Orr, Staff Archaeologist at 614-752-8279 or by e-mail at <u>"morr@envsrv@projmgmt."</u>

TMH:mro

Enclosures

c: Mark Vonder Embse, FHWA, Ohio Divison; Larry Hoffman, ODOT-OES; File w/attachments; Reading File



DELAWARE TRIBE OF INDIANS

220 N.W. VIRGINIA • BARTLESVILLE, OKLAHOMA 74003 TELEPHONE: (918) 336-5272 • FAX: (918) 336-5513

June 24, 2003

Timothy Hill Office of Environmental Services Ohio Department of Transportation Central Office, P.O. Box 899 Columbus, Ohio 43216-0899 JUL 0 1 2003

OFFICE OF ENVIRONMENTAL SERVICES

Re: HAM-SR 32-0.00 (PID 22970), Eastern Corridor Study Dear Mr. Hill,

Thank you for informing us about the above referenced project. Our review indicates that this project is located in an area that was not inhabited by the Delaware Tribe. As such, there is little potential for impacting unknown archaeological sites culturally affiliated with the Delaware Tribe and we have no particular objection to the proposal. However, our suggestion is that if any human remains are accidentally unearthed during the course of the project that you cease development immediately and inform the appropriate Indian Tribes of the inadvertant discovery.

If you have any questions, feet free to contact this office by phone at (918) 336-5272.

Sincerely,

Brice Obermeyer

NAGPRA Director Delaware Tribe of Indians

	OHIO DEPARTMENT OF TRANSPORTATION INTER-OFFICE COMMUNICATION Office of Environmental Services
TO:	Michael C. Flynn, District 8 Deputy Director DATE: 1 July 2003 Attn: Hans R. Jindel, District Environmental Coordinator
FROM:	Timothy M. Hill, Administrator, Office of Environmental Services
SUBJECT:	Tribal and Interested Parties Letter Response
PROJECT:	HAM-SR-32-0.00 (PID 22970) Eastern Corridor Study, Hamilton and Clermont Counties, Ohio

Attached is one photocopy of the letter of response from the Peoria Tribe of Indians of Oklahoma, located in Miami, Oklahoma.

The Peoria Tribe has requested that in the event that any items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) including skeletal remains be encountered, that construction be halted and State and Tribal NAGPRA representatives be notified for further consultation.

If you have any questions or concerns, please contact Marilyn Orr, Staff Archaeologist at 614-752-8279 or by e-mail at <u>"morr@envsrv@projmgmt."</u>

TMH:mro

Enclosures

c: Mark Vonder Embse, FHWA, Ohio Division; Larry Hoffman, ODOT-OES; File w/attachments; Reading File



PEORIA TRIBE OF INDIANS OF OKLAHOMA

118 S. Eight Tribes Trail (918) 540-2535 FAX (918) 540-2538 P.O. Box 1527 MIAMI, OKLAHOMA 74355 CHIEF John P. Froman

SECOND CHIEF Joe Goforth

RECEIVED

JUN 3 0 2003

OFFICE OF ENVIRONMENTAL SERVICES

June 24, 2003

Ohio Department of Transportation Office of Environmental Services Attn: Paul Graham Assistant Environmental Administrator, 1980 West Broad Street Columbus, Ohio 43223

RE: HAM-SR 32-0.00 (PID 22970), Eastern Corridor Study

Thank you for notice of the referenced project. The Peoria Tribe of Indians of Oklahoma is currently unaware of any documentation directly linking Indian Religious Sites to the proposed construction. In the event any items falling under the Native American Graves protection and Repatriation Act (NAGPRA) are discovered during construction, the Peoria Tribe request notification and further consultation.

The Peoria Tribe has no objection to the proposed construction. However, if human skeletal remains and/or any objects falling under NAGPRA are uncovered during construction should stop immediately, and the appropriate persons, including state and tribal NAGPRA representatives contacted.

John P. Froman Chief

xc: Bud Ellis, Repatriation/NAGPRA Committee Chairman

TREASURER LeAnne Reeves SECRETARY Hank Downum

FIRST COUNCILMAN Claude Landers SECOND COUNCILMAN Jenny Rampey

THIRD COUNCILMAN Jason Dollarhide



Appendix B-4 Items on File at Project Office

Items on File at Eastern Corridor Project Office (as of March 1, 2004)

Project Items	deliverables / materials
Agency Meeting Notes and Materials	Regulatory Agency Coordination (January 17, 2002) Regulatory Agency Coordination (April 18, 2002) Regulatory Agency Coordination (October 17, 2002) Regulatory Agency Coordination (October 14, 2003) Federal Agency Coordination (April 12, 2002) Federal Agency Coordination (June 27, 2003) Phase I Field Strategies (August 2, 2002)
Public Involvement Monthly Reports	March 15, 2002 May 2002 June 2002 August 16, 2002 December 20, 2002 February 28, 2003 March 21, 2003 June 20, 2003
Public Involvement Quarterly Reports	October 2001 – December 2001 January 2002 – March 2002 April 2002 – June 2002 July 2002 – September 2002 October 2002 – December 2002 January 2003 – March 2003 April 2003 – June 2003 July 2003 – September 2003 October 2003 – December 2003
Public Meeting Summaries	Round 1: May – June 2002 Round 2: May 2003 Round 3: January-February 2004
Environmental Justice Outreach	Outreach materials (August 2002 – January 2003) Community Presentations (March 2003 – May 2003, October 2003)
Advisory Committee Meetings	April 19, 2002 July 25, 2002 January 27, 2003 August 22, 2003 November 14, 2003
Fact Sheets	Eastern Corridor PE/EIS Fact Sheet Little Miami River Fact Sheet Eastern Corridor and MetroMoves Funding Possibilities Land Use Visioning Rail Transit Options
Newsletters	Volume 1, Issues 1-3 Volume 2, Issue 1
Databases	Government Entities Public Service Providers School Districts Media Outlets

1



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

APPENDIX C RESOURCE AGENCY COMMENTS



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

Comments Received

- Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Heritage Data Service letter dated August 20, 2001
- U.S. Department of the Interior, Fish and Wildlife Service letter dated September 14, 2001
- Ohio Department of Natural Resources letter to the Sierra Club dated June 7, 2002
- Department of Health and Human Services, Centers for Disease Control and Prevention (CDC) letter to Federal Highway Administration dated June 10, 2002
- U.S. Department of the Interior, National Park Service letter to Federal Highway Administration dated July 12, 2002
- Ohio Department of Natural Resources comments via email dated July 15, 2002
- U.S. Department of the Interior, National Park Service letter to Federal highway Administration dated November 7, 2002
- Ohio Department of Transportation, Office of Environmental Services letter to Ohio Department of Natural Resources dated March 5, 2003
- U.S. Department of the Interior, National Park Service letter to Federal Highway Administration dated October 8, 2003
- Ohio Environmental Protection Agency letter to Ohio Department of Transportation darted May 4, 2004
- U.S. Environmental Protection Agency letter to Ohio Department of Transportation dated May 6, 2004
- Ohio Department of Natural Resources comments via email dated May 11, 2004
- U.S. Army Corps of Engineers, Louisville District letter to Ohio Department of Transportation dated May 24, 2004
- U.S. Department of the Interior, National Park Service letter to Federal highway Administration dated May 27, 2004
- U.S. Coast Guard, Eighth District coordination via email dated June 16, 2004
- U.S. Department of the Interior, Fish and Wildlife Service letter to Ohio Department of Transportation dated June 18, 2004



Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Natural Areas and Preserves Stuart Lewis, Chief 1889 Fountain Square, Bldg. F-1 Columbus, OH 43224-1388 Phone: (614) 265-6453; Fax: (614) 267-3096

August 20, 2001

W. Christopher Young Balke Engineers 1848 Summit Road Cincinnati, OH 45237

Dear Mr. Young:

Per your request, enclosed please find an ASCII delimited file with our Natural Heritage Database records for the Eastern Corridor Multi-Modal project area on the Cincinnati East, Cincinnati West, Madeira, Goshen, Covington, Newport, Withamsville and Batavia Qúads (#2111). The records are delimited by a carriage return, with the fields in each record delimited by a comma. There is a total of 180 records for these eight quads. I have also enclosed information on managed areas found within the study area.

Data provided are in the following order: latitude, longitude, locational accuracy code, year of the record, class code, federal status, state status, element occurrence number, scientific name, common name, and managed area name.

Locational accuracy codes, class codes and federal and state statuses are defined on an attached sheet. The element occurrence number is a code we use to differentiate between records of the same species. If you have a question about a particular record, we will need to know its element occurrence number.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas. Also, we do not have data for all Ohio wetlands. For additional information on wetlands and National Wetlands Inventory maps, please contact Jim Given in the Division of Real Estate and Land Management at 614-265-6770.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

bieNoisehhe

Debbie Woischke, Ecological Analyst Support Services Group

OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF NATURAL AREAS AND PRESERVES

August 20, 2001

Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties: Managed Areas

CINCINNATI WEST QUAD

Newberry Wildlife Sanctuary - Hamilton County Park District Farbach Werner Nature Preserve - Hamilton County Park District Winton Woods - Hamilton County Park District

CINCINNATI EAST QUAD

Little Miami State and National Scenic River - ODNR, Division of Natural Areas and Preserves Wyoming Nature Preserve - The Nature Conservancy Winton Woods - Hamilton County Park District

MADEIRA QUAD

Little Miami State and National Scenic River - ODNR, Division of Natural Areas and Preserves Lake Isabella Park - Hamilton County Park District Red Bird Hollow - The Nature Conservancy and Red Bird Hollow Association Little Miami Golf Center - Hamilton County Park District Avoca Park - Hamilton County Park District Miamiville Access - ODNR, Division of Natural Areas and Preserves Kelley Nature Preserve - Clermont County Park District Kroger Hills Reserve - Hamilton County Park District

GOSHEN QUAD

Albers Park - Clermont County Park District

COVINGTON QUAD

Embshoff Woods - Hamilton County Park District

NEWPORT QUAD

Little Miami State and National Scenic River - ODNR, Division of Natural Areas and Preserves Withrow Nature Preserve - Hamilton County Park District

WITHAMSVILLE QUAD

Withrow Nature Preserve - Hamilton County Park District Woodland Mound Park - Hamilton County Park District

BATAVIA QUAD

East Fork State Park - ODNR, Division of Parks and Recreation 222 Roadside Park - Clermont County Park District Sycamore Park - Clermont County Park District Pattison Park - Clermont County Park District

OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF NATURAL AREAS AND PRESERVES

August 20, 2001

File Documentation: Natural Heritage Database Records

File Type: comma delimited ASCII File Name: Job#2111 # Records: 180

1.

Fields:

Latitude - degrees, minutes, seconds (xxxxX) Longitude - degrees, minutes, seconds (0xxxxX) Locational accuracy code Year of record Class code Federal status Ohio status Occurrence number Scientific/Element name Common name Managed area

3.5" Data Disc

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-ENGLASSING NEWS



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services 6950 Americana Parkway, Suite H Reynoldsburg, Ohio 43068-4132

(614) 469-6923/FAX (614) 469-6919 September 14, 2001

W. Christopher Young Balke Engineers 1848 Summit Road Cincinnati, OH 45237-2804

Dear Mr. Young:

This is in response to your August 14, 2001 letter requesting information we may have regarding the occurrence or possible occurrence of Federally-listed threatened or endangered species, or other comments relating to the fish and wildlife resources within the vicinity of the proposed Eastern Corridor Multi-Modal projects in Clermont and Hamilton Counties, Ohio.

In general, we recommend that any potential projects minimize water quality impacts and impacts to high quality fish and wildlife habitat, such as forests, streams, and wetlands. If streams and/or wetlands are involved, you should contact the Regulatory Branch of the Louisville District of the Corps of Engineers and the Ohio EPA for possible Section 404/401 permit requirements. Note that wetlands may exist on sites that are not designated wetland by the National Wetland Inventory.

ENDANGERED SPECIES COMMENTS: Clermont and Hamilton Counties lie within the range of the Indiana bat (*Myotis sodalis*), a Federally listed endangered species. Summer habitat requirements for the species are not well defined but the following are thought to be of importance:

1. Dead trees and snags, especially those with exfoliating bark or cavities in the trunk or branches which may be used as maternity roost areas.

2. Live trees (such as shagbark hickory) which have exfoliating bark.

3. Stream corridors, riparian areas, and nearby woodlots which provide forage sites.

Considering the above items, we recommend that if trees with exfoliating bark (which could be potential roost trees) are encountered in the project area, they and surrounding trees should be saved wherever possible. If they must be cut, they should not be cut between April 15 and September 15.

If desirable trees are present and if the above time restriction is unacceptable, mist net or other surveys should be conducted to determine if bats are present. The survey should be designed and conducted in coordination with the endangered species coordinator for this office. The survey should be conducted in June or July since the bats would only be expected in the project area from approximately April 15 to September 15.

Clermont and Hamilton Counties are located within the range of the Federally endangered running buffalo clover (*Trifolium stoloniferum*). The clover is usually found in disturbed openings that are well mowed and/or partly shaded. The clover may be found on relatively open hilltops, in openings of mesic woods, or along paths or intermittent streams in or near mesic woods. We suggest that proposed transportation improvement corridors be checked for appropriate habitat. If appropriate habitat is present, surveys for the clover may be necessary to determine if the clover is present.

Hamilton County lies within the range of the bald eagle (*Haliaeetus leucocephalus*), a Federally-listed threatened species. We recommend that you contact the Ohio Division of Wildlife for the location(s) of the eagle nest(s) in the County. If any nests are located within ½ mile of the project site, further coordination with this office is necessary. If the nest is active, we recommend that work at the site be restricted from mid-January through July to allow pre-listing activities, incubation, and raising of the young.

This technical assistance letter is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act, of 1973, as amended, and is consistent with the intent of the National Environmental Policy Act of 1969, and the U. S. Fish and Wildlife Service's Mitigation Policy.

If you have questions, or if we may be of further assistance in this matter, please contact Ken Lammers at extension 15 in this office.

Sincerely,

allaum

Kenneth C. Lammers Acting Supervisor

cc: ODNR, Div. of Wildlife, Environmental Section, Columbus, OH



Ohio Department of Natural Resources

BOB TAFT COVERNOR

SAMUEL W. SPECK, DIRECTOR

Office of the Director 1930 Belcher Drive – Bldg. D-3 Columbus, OH 43224-1387 Phone: (614) 265-6879 Fax: (614) 261-9601

June 7, 2002

Mr. David T. MacKenzie Little Miami River Campaign Coordinator Sierra Club 587 Torrence Lane Cincinnati, OH 45208

Dear Mr. MacKenzie:

Governor Taft has forwarded me your letter expressing concerns regarding the proposed State Route 32 Highway Extension over the Little Miami State and National Scenic River. Being from the Cincinnati area, the Governor is also concerned with potential impacts to the Little Miami River resulting from this project. Therefore he has asked me to provide you with information regarding our Department's position and our requirements to mitigate negative impacts associated with the proposed new bridge.

Bob Gable, Scenic River Program Manager of our staff participated in the nearly three year long planning process known as the Eastern Corridor Major Investment Study (MIS). The MIS was conducted by the Ohio-Kentucky-Indiana (OKI) Regional Council of Governments to review a variety of transportation alternatives and their feasibility of implementation within the Eastern Corridor. A 60 member task force including representatives from all 18 political subdivisions from within the region, environmental organizations, business leaders, the Ohio Department of Transportation and other local stakeholders participated in the development of the MIS. Many different alternatives were discussed during the investment study including expanded busing, light rail, ramp metering as well as new highways and bridges.

Throughout these discussions Mr. Gable repeatedly voiced the Department's concerns regarding the environmental impacts associated with the proposed new bridge over the Little Miami River. However, when the task force was asked to vote on which alternatives were to be included in the proposed transportation plan for the Eastern Corridor, all 18 political subdivisions voted to include the proposed new bridge in the plan. The only dissenting vote was actually Mr. Gable's as a representative of the Ohio Department of Natural Resources. Given this level of local support our Department realized the need to consider approval of the proposed new bridge, however not without substantial mitigation. The minimum mitigation that would be required for this project includes the following:

 Fee simple purchase of undeveloped lands or the placement of conservation easements over lands adjacent to the proposed extended sections of Route 32. All of these lands or easements will be held by the Department of Natural Resources as a Scenic River Forest Preserve. This would result in none of the new road frontage subject to development. Land adjacent to the Little Miami would be protected in perpetuity. These measures will ultimately reduce impacts associated with urban development such as increased impervious surfaces and stormwater discharges and protect floodplain land from development. May 31, 2002 Page 2

- 2. Clear spanning of the Little Miami River with the new bridge structure. Elevation of all roadway sections on piers above the 100 year floodplain to allow for the unimpeded passage of the 100 year flood event. These measures will significantly minimize modifications to the natural flow regimes of the Little Miami's base flow and flood events greatly reducing hydrological modifications, channel instability, and degradation of in-stream habitat.
- Implementation of the most stringent Best Management Practices for Bridge Construction sites as designed with cooperation of our Scenic Rivers staff. These measures will include sediment and erosion control practices, project phasing, reduced vegetative clearing, and other methods utilized to minimize or eliminate negative impacts resulting from construction site stormwater runoff.

It should also be noted that the proposed alignment for this new bridge is in an already impacted corridor. The forest corridor in the horseshoe bend region has been fragmented by a powerline, there is a landfill just upstream of the proposed crossing and this section of the river has been subjected to residential, business and light industrial development.

Giving consideration to all of these factors as well as the local support for the proposed new bridge, we are confident that the mitigation outlined above will protect this segment of the Little Miami from further degradation while still allowing the new bridge to be completed. Our staff will also be involved throughout the entire plan development process, providing us with additional opportunities to require more site specific BMP's.

We appreciate your concern and continued support for the protection of the Little Miami State and National Scenic River.

If you have any additional questions, please contact Bob Gable at 614-265-6814.

Sincerely,

Samuel W. Speck Director

SWS/kh

cc: Governor's Office Scott Zody Stu Lewis Bob Gable William Brayshaw Timothy Hill, ODOT, Office of Environmental Services 20-33-03 10:28am From-ENVIROMENTAL SERVICE DEPAKIMENT OF HEALTH & HUMAN SERVICES

6147287368

T-026 P.02/03 F-473

Centers for Disease Control and Prevention (CDC) Atlanta GA 30341-3724

IDICATE DIRI

June 10, 2002

Mark L. Vonder Embse Urban Programs Engineer Federal Highway Administration 200 North High Street, Room 328 Columbus, Ohio 43215,

Dear Mr. Vonder Embse:

We understand from Federal Register notice 67 FR 38309 dated June 3, 2002 that the Federal Highway Administration has issued a notice to advise that a Tiered Environmental Impact Statement (EIS) may be prepared for proposed multi-modal transportation projects in Hamilton and Clermont Counties, Ohio, and Campbell County, Kentucky. The project would cover approximately 200 square miles, extending from the Cincinnati Business District east to the Communities of Milford, Batavia, and Amelia in Clermont County, and south into Northern Kentucky along I-275 and I-471. We are responding on behalf of the Department of Health and Human Services (DHHS), U.S. Public Health Service.

While we have no project specific comments to offer at this time, we do recommend that the topics listed below be considered during the NEPA process along with other necessary topics, and addressed if appropriate. Mitigation plans which are protective of the environment and public health should be described in the EIS wherever warranted.

AREAS OF POTENTIAL PUBLIC HEALTH CONCERN:

- I. Air Quality
- dust control measures during project construction, and potential releases of air toxins
 potential process air emissions after project completion
- · compliance with air quality standards
- II. Water Quality/Quantity
- special consideration to private and public potable water supply, including ground and surface water resources
- compliance with water quality and waste water treatment standards
- · ground and surface water contamination (e.g. runoff and erosion control)
- body contact recreation
- III. Wetlands and Flood Plains
- potential contamination of underlying aquifers
- * construction within flood plains which may endanger human health
- contamination of the food chain

111

514/28/368

Page 2 - Mark L. Vonder Embse

IV. Hazardous Materials/Wastes

- · identification and characterization of hazardous/contaminated sites
- safety plans/procedures, including use of pesticides/herbicides; worker training
- · spill prevention, containment, and countermeasures plan

V. Non-Hazardous Solid Waste/Other Materials

· any unusual effects associated with solid waste disposal should be considered

VI. Noise

 identify projected elevated noise levels and sensitive receptors (i.e. residential, schools, hospitals) and appropriate mitigation plans during and after construction

VL. Occupational Health and Safety

compliance with appropriate criteria and guidelines to ensure worker safety and health

VIII. Land Use and Housing

- special consideration and appropriate mitigation for necessary relocation and other potential adverse impacts to residential areas, community cohesion, community services
- · demographic special considerations (e.g. hospitals, nursing homes, day care centers, schools
- consideration of beneficial and adverse long-term land use impacts, including the potential influx of people into the area as a result of a project and associated impacts
- potential impacts upon vector control should be considered

IX. Environmental Justice

 federal requirements emphasize the issue of environmental justice to ensure equitable environmental protection regardless of race, ethnicity, economic status or community, so that no segment of the population bears a disproportionate share of the consequences of environmental pollution attributable to a proposed project. (Executive Order 12898)

While this is not intended to be an exhaustive list of possible impact topics, it provides a guide for typical areas of potential public health concern which may be applicable to this project. Any health related topic which may be associated with the proposed project should receive consideration when developing the draft and final EISs. Please furnish us with one copy of the draft document when it becomes available for review.

Sincerely yours,

Paul Joe, DO, MPH

Paul Joe, DŎ, MPH Medical Officer National Center for Environmental Health (F16) Centers for Disease Control & Prevention

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United States Department of the Interior RECEIVED

NATIONAL PARK SERVICE

JUL 2 9 2002

IN REPLY REFER TO:

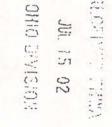
MIDWEST REGION 1709 JACKSON STREET OMAHA, NEBRASKA 68102-2571

OFFICE OF ENVIRONMENTAL SERVICES

JUL 1 2 2002

ER02/0524

Mr. Mark L. Vonder Embse Urban Planning Engineer Federal Highway Administration 200 North High Street, Room 328 Columbus, Ohio 43215



Dear Mr. Vonder Embse:

The National Park Service (NPS) has reviewed the notice of intent to prepare an environmental impact statement (EIS) for the proposed Eastern Corridor of the city of Cincinnati Improvements (Tiered Project), from Cincinnati Business District East to Milford, Batavia, and Amelia and south into northern Kentucky, along I-275 and I-471. We would like to submit the following comments for your consideration:

The Little Miami River is a State-administered component of the National Wild and Scenic Rivers System. The purpose for designating the Little Miami River was to protect its free-flowing character; water quality; and outstanding scenic, recreational, and/or biologic and geologic values. The Little Miami is protected under section 7(a) of the Wild and Scenic Rivers Act (Act), which states that:

"no department or agency of the United States shall assist by loan, grant, license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration."

Bridge crossings are considered water resource projects and would require evaluation under section 7(a) of the Act. While it appears to be too early in the project planning to determine whether bridge improvements or additions may be needed, the project certainly carries that potential. Additionally, earth moving activities along the slopes of the Little Miami River could lead to sedimentation, which could further impact the values for which the Little Miami was designated. Projects that would have a "direct and adverse effect" on the values for which a river was added to the national system are prohibited. The NPS is responsible for evaluating projects and their effects on designated rivers.

The NPS has a continuing interest in working with the Federal Highway Administration to ensure project impacts to resources of concern to the NPS are adequately addressed. Please contact Ms. Sue Jennings of my staff, at 402-221-3493, if you have further questions.

2

These comments have been provided as early technical assistance and do not necessarily indicate the NPS's or the Department of the Interior's responses to future environmental documents prepared in association with the project. These comments have been provided as early technical assistance and do not necessarily indicate the NPS's or the Department of the Interior's responses to future environmental documents prepared in association with the project.

Sincerely,

Villin Oskhul

William W. Schenk Regional Director

r.,

cc: Mr. Bob Gable Ohio Department of Natural Resources Scenic River Services Division of Natural Areas and Preserves 1889 Fountain Square, Ct. F-1 Columbus, Ohio 43224

Subject: RE: Eastern Corridor - state and fed agency feedback

Date: Mon, 15 Jul 2002 12:40:34 -0400

From: Larry.Hoffman@dot.state.oh.us

To: Rick Record <rrecord@balke.com>

CC: "Andy Fluegemann (E-mail)" <andy.fluegemann@dot.state.oh.us>,

Bob.Campbell@dot.state.oh.us, "Diana Martin (E-mail)" <diana.martin@dot.state.oh.us>, Debbie Osborne <dosborne@balke.com>, Tim.Hill@dot.state.oh.us

Just to remind everyone, we are still trying to set a meeting with ODNR to discuss the project including mitigation, but I have not heard back from those folks... I will call to see what dates they are considering.

Rick Record <rrecord@balke.com>

07/15/02 11:46 AM

To: "'Larry.Hoffman@dot.state.oh.us" <Larry.Hoffman@dot.state.oh.us> cc: "Andy Fluegemann (E-mail)" <andy.fluegemann@dot.state.oh.us>, "Diana Martin (E-mail)" <diana.martin@dot.state.oh.us>, Debbie Osborne <dosborne@balke.com>, Tim.Hill@dot.state.oh.us, Bob.Campbell@dot.state.oh.us Subject: RE: Eastern Corridor - state and fed agency feedback

Thanks, Larry. We call you Mr. Turn-Around down here (heh-heh).

RR

-----Original Message-----From: Larry.Hoffman@dot.state.oh.us [mailto:Larry.Hoffman@dot.state.oh.us] Sent: Monday, July 15, 2002 11:44 AM To: Rick Record Cc: Andy Fluegemann (E-mail); Diana Martin (E-mail); Debbie Osborne; Tim.Hill@dot.state.oh.us; Bob.Campbell@dot.state.oh.us Subject: Pa: Factors Corridor, state and fod agency feedback

Subject: Re: Eastern Corridor - state and fed agency feedback

Rick,

3

Per your request, I have provided ODNR's comments below from Kim Bakers two emails: Comments from OEPA will be faxed to you today. No response from USEPA or others at this time.

NR connects on project.

FYI...our comments on your 4/25 submittal will be late, since DNAP has not yet submitted comments. Thus, the only comments I can offer at this time are floodplain comments from the Div. of Water.

The proposed project falls within the 100-year floodplains and floodways of the Little Miami River, McCullough Run, Fork of McCullough Run, Newtown (Clear) Creek, Little Duck Creek, Duck Creek and the Ohio River as designated on the following Flood Insurance Rate Maps:

Hamilton County - 390204 0070B and 0075B Effective Date June 1, 1982. Newton - 390230 0005C, Effective Date December 15, 1983. Terrace Park - 390633 0001C, Effective Date January 5, 1984. Fairfax - 390215 0001A, Effective Date November 15, 1979.

Cincinnati - 390210 0018B, 0025B, 0026B, 0027B, Effective Date October 15, 1982. Hamilton County, Newtown, Terrace Park, Fairfax and Cincinnati are participants in the National Flood Insurance Program (NFIP) and have adopted locally enforced flood damage reduction standards. The local floodplain administrators should be contacted for the specific development standards and permits. Hamilton County Terrace Park Sandra Ashba, Design Technician, Dept. of Public Works William Fiedler, Bldg. Official 138 East Court St., Suite 800 428 Elm Ave. Cincinnati, OH 45202 Terrace Park, OH 45174 (513) 946-4754 (513)831-1111 Cincinnati Newtown William Langevin, Director of Building & Inspections Michael Cornette City Hall Building Commissioner 801 Plum St., Room 328 3536 Church St. Cincinnati, OH 45202 Newtown, OH 45244 (513) 352-2362 (513)561-7697 Fairfax Mr. Paul Henn, Chief Building Official 5903 Hawthorne St. Fairfax, Ohio 45227 (513) 271-7012

Here's additional info from DNAP regarding the project. More sight specific mitigation and or BMP's will be required as ODNR reviews definitive alignments and plans for the Eastern Corridor. ODNR wants to reiterate that the Director of ODNR has stated that ODNR will not approve this project without significant mitigation. To assist ODOT in your planning process, the following list comprises the minimum amount of mitigation ODNR proposes for approval of this project:

1. Fee simple purchase of undeveloped lands or the placement of conservation easements over lands adjacent to the proposed extended sections of Route 32. All of these lands or easements will be held by the Department of Natural Resources as a Scenic River Forest Preserve. This would result in none of the new road frontage being subject to development, and many acres of land adjacent to the Little Miami being protected in perpetuity. These measures will ultimately protect floodplain from development, reduce impervious surfaces and decrease stormwater discharges to the Little Miami.

2. Clear spanning of the Little Miami River with the new bridge structure. Elevation of all roadway sections in the oneyhundred year floodplain to allow for the unimpeded passage of the one hundred year flood event. These measures will minimize modifications to the natural flow regimes of the Little Miami's base flow and flood events greatly reducing hydrological modifications, channel instability and degradation of in-stream habitat.

3. Implementation of the most stringent Best Management Practices for Bridge Construction sites, as designed in cooperation with our Scenic Rivers staff. These measures will include sediment and erosion control practices, project phasing, reduced vegetative clearing and other methods utilized to minimize or eliminate negative impacts resulting from construction site stormwater runoff.

Thanks for the opportunity to comment,

Kim

Kim Baker, Environmental Administrator Ohio Department of Natural Resources Division of Real Estate and Land Management 1952 Belcher Drive, Bldg. C-2 Columbus, OH 43224-1386 Phone 614/265-6411 FAX 614/267-2981 email: <mailto:kim.baker@dnr.state.oh.us>

Larry -

Andy has probably already contacted you, but I do need ASAP (today? tomorrow?) some sort of summary on what we have so far in the way of feedback from state and federal agencies as to scoping input and review of Round One public meeting materials (available on EC website), particulary as related to preliminary alternatives and study corridor. This is to be covered at the Implementation Group work session this Friday morning.

Thanks,

Rick R.



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE

MIDWEST REGION 1709 JACKSON STREET OMAHA, NEBRASKA 68102-2571

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OFFICE OF ENVIRONMENTAL SERVICES

November 7, 2002

Mr. Leonard E. Brown Division Administrator Federal Highway Administration Ohio Division Office 200 N. High Street Columbus, Ohio 43215

HAM-32-0.00 PID 22970 Eastern Convidor Study

Dear Mr. Brown:

Thank you for your letter of October 28, requesting that the National Park Service (NPS) serve as a Cooperating Agency in the preparation of the tiered environmental impact statement (EIS) for proposed improvements in the eastern corridor of Cincinnati, Ohio (ER 02/0524). We accept your offer.

The project has the potential to impact the Little Miami Wild and Scenic River, a component of the National Wild and Scenic Rivers System (System). Per the Wild and Scenic Rivers Act (WSRA), the NPS, on behalf of the Secretary of the Interior, has the responsibility to prepare section 7 determinations for water resource projects that affect components of the System. Additionally, the NPS has the responsibility to provide comments regarding impacts to section 4(f)/6(f) resources, per the Department of Transportation Act.

To maximize interagency cooperation during the EIS development process we will

Explain the WSRA and our management responsibilities.

• Identify the outstandingly remarkable values for which the river was included in the System.

Describe the process for integrating a section 7 evaluation with the EIS process.

• Ensure through scoping input and review of preliminary drafts, that the EIS includes a comprehensive analysis of the potential impacts to the Little Miami R **VES-Project Filing**

NOV 2 2 2002 File From:_ File By:

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• Prepare a draft section 7 evaluation for inclusion in the draft EIS, provided that adequate information has been included in the draft EIS. The NPS will prepare a draft section 7 evaluation for the preferred alternative only. Where other alternatives are similar, it may be stated that the outcome of the evaluation applies to them as well.

2

• Prepare a final section 7 evaluation for inclusion in the final EIS, provided that adequate information has been included in the final EIS. The final section 7 evaluation will indicate that unless the project changes or new information becomes available, the conclusion reached represents the likely outcome of the section 7 determination, which will be made in response to the Army Corps of Engineers Section 404 public notice.

• The NPS will provide preliminary section 4(f)/6(f) comments for the draft and final EIS as appropriate.

Your primary contact for this project is Ms. Sue Jennings. She may be reached at 402-221-3493 or email at: Sue_Jennings @nps.gov. We look forward to working with your staff, as a Cooperating Agency, on the development of this project.

Sincerely,

Marshel

William W. Schenk Regional Director

CC:

Mr. Mark Bonder Embse (FHWA-Ohio)
 Mr. Jake Hoogland (WASO-2310)
 Mr. Nick Chevance (MWR-PL/C
 Ms. Sue Jennings (MWR-PL/C)
 Ms. Sändra Washington (MWR-PL/C)

Dec-09-03 11:51 am From-ENVIROMENTAL SERVICE

6147287368



Office of Environmental Services

March 5, 2003

Mr. Scott Zody, Deputy Director Ohio Department of Natural Resources 1930 Belcher Drive, Bldg D-3 Columbus, OH 43224-1387

State and National Scenic River issues for HAM-32 (PID 22970) - Eastern Corridor RE:

Dear M. Zody:

The following are minutes and conclusions to consider for environmental documentation, environmental commitments and during design of the preferred alternative. These minutes are a direct result of meetings held with the National Park Service and the Ohio Department of Natural Resources. They are as follows:

Nationa Park Service Issues:

During early coordination for the above project the National Park Service (NPS) determined that Sec ion 7 of the National Wild and Scenic Rivers Act would apply and therefore ODOT would need to supply information to the NPS for a Section 7 Review. OES reviewed the Section 7 law and determined that a NPS, Section 7 Review may not be necessary to construct this project should certain criteria be met. In order to understand if Section 7 applied, a telephone discussion with the followir g personnel from various organizations was held on October 28, 2002.

The individuals present in this meeting are as follows:

NPS Sue Jenn ings - Midwest Region Nick Chevance - Midwest Region

QDOT/OES

Hill
Linkous
Michael
Rostofer

FHWA - Ohio Division Mark Vonder-Embse

FHWA- Washington D.C. Fred Bank

Department of Interior Chip Larson John Haubert

HAM-: 2 (PID 22970) - Eastern Corridor Project March i, 2003 Page 2

During the conference call, it was determined that Section 7 would not apply, if assuming a bridge over the Little Miami River (LMR) would be a necessary component in the selected alternative, was designed in such a way that would not impact the bed or bank below the Ordinary High Water Mark (OHW) 1) of the LMR. However, a NPS Section 7 Review may be necessary if the selected alternative include: any in-stream work (i.e., bank stabilization, placement of temporary or permanent fill below the OHWN) on the mainstem or on any tributaries in close proximity to the LMR. Additionally, Section 7 would a so apply if the proposed project includes bank stabilization, temporary or permanent fills, bank or channel shaping or dredging, placing teraporary or permanent structures in the stream channel (coffer dams, piers, a nutments), or any other type of in-stream work.

As the project develops these issues must to be monitored and coordinated with the NPS to assure that OE OT is in compliance with Section 7 of the National Wild and Scenic River Act. Results will be include 1 in the environmental documents(s).

ODNR:

A Scenic Rivers Approval in accordance with ORC, Section 1517.16 is required before this propose d project can be constructed. As a condition of the Scenic Rivers Approval, a letter was issued by ODN R on September 13, 1999 stating, "substantial mitigation would be required before ODNR would approve the project." (See attached Letter from Director of ODNR) The substantial mitigation was also stated in an email dated May 30, 2002 from ODNR. This email was the result of the April 25, 2002 Regulat xy Agency Coordination about the Environmental Inventory Source Document. The substantial mitigat on ODNR proposes for approval of this project is as follows: 1) Fee simple purchase of undeve oped lands or the placement of conservation easements over lands adjacent to the proposed extended sections of Route 32. All of these lands or easements will be held by the Department of Natural Resources as a Scenic River Forest Preserve; 2) Clear spanning of the Little Miami River with the new bridge s ructure; 3) Elevation of all roadway sections in the one hundred year flood plain to allow for the unimpe led passage of the one hundred year flood event; 4) Implementation of the most stringent Best Management Practices for Bridge Construction sites, as designed in cooperation with our Scenic Rivers staff. (Size attached email from Kim Baker on minimum mitigation requirements). Overall this information from OI NR is helpful, however, development of specific mitigation at this time is premature due to the lack of spec fic impact information.

Dec-09-03 11:5 am

HAM-: 2 (PID 22970) - Eastern Corridor Project March : , 2003 Page 3

In August 29, 2003, OES and District 8 met with Bob Gable (Scenic Rivers Administrator, ODNR) and Scott Zody (Deputy Director, ODNR) on the aforementioned issues. Mr. Gable express d in the meeting that the primary focus is with the immediate and secondary cumulative impacts associated with this potential project. Specifically, the construction of a new bridge over the LM & and the potential for future development (increased impervious surfaces) in the adjacent flood plain. During the meeting ODOT staff stressed the importance of flexibility to achieve the requirec mitigation. Specifically related to ODNR's mitigation requirements, ODOT staff discussed the lette : of the law as it related to ODOT acquiring R/W and limitations for takings. Simply stated, ODOT an not acquire stream mitigation through the use of eminent domain. The purchasing of lands fo : the reason of stream mitigation must with willing sellers. ODOT staff also expressed that purchas ng land within the flood plain for mitigation would be difficult and assumes that a bridge would be a necessary component in the selected alternative. Fee simple purchase of land within the flood pl in would be difficult due to the presence of an operational commercial sod farm and these sod farm owners have a vested interest in the undeveloped flood plain land. Mr. Gable would like to have ODOT purchase the properties within the flood plain then deeded over to ODNR. Additionally, ODOT staff advocated that the Clermont County Park District, Hamilton County Park District and the City of Cincinnati are interested in properties along the East Fork of LMR and tributar watercourses for park development and possible conservation protection.

As a result of this discussion, Mr. Zody understood the possible dilemma and agreed that mitigation in the form of land acquisition could occur within a reasonable distance from the proposed impact within the Lower Little Miami Watershed. Mr. Gable wanted land acquisition specifically on the LMR. There was also discussion on the construction of a bridge over the LMR. Mr. Gable would I ke to see a structure that will clear span the LMR and the entire one hundred year flood plain. O DOT staff expressed that construction of a bridge that will span the LMR is possible but to include he entire one hundred year flood plain would likely be unfeasible.

la conclusion of the issues raised in this meeting, it was emphasized to ODNR that the project is early in the development process and that final construction and mitigation plans will not be developed until all environmental analysis and documentation have been completed. Results will be inclu led in the Environmental document(s).

Other Is sues:

He aware that there may be properties (6f jurisdiction) in the study area that were purchased through the use of Land and Water Funds adjacent to the LMR and/or tributary watercourses. This fund has specific requirements for mitigation if such properties are impacted by project.

Dec-09-03 11:5 am From-ENVIROMENTAL SERVICE

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HAM-32 (PID 22970) - Eastern Corridor Project March 5, 2003 Page 4

fassuming a bridge over the Little Miami River (LMR) would be a necessary component in the selected alternative, at a minimum, a Pro-construction Notification will be required because this section of the Littl • Miami River is within the Section 10 jurisdictional boundaries on the LMR. It is also highly probable that a USCG, Bridge Permit will be required because this section of the LMR (RM 7.1) is within the Section 9 jurisdictional boundaries.

Any park lands and hazardous waste sites are located in the study area. It will be important to identify these properties and avoid/minimize impacts to these parcels.

There are listed threatened and endangered aquatic species located in the LMR within the defined study area. Because these species have a potential to be impacted, it will be important to do, at the least, a preser ce/absence evaluation.

f you or your staff have any further question or concerns with the aforementioned information please f :el free to contact William R. Cody @ (614) 466-5198 or Larry Hoffman @ (614) 466-6439 myself (2) (614) 466-0377.

Respectively,

Timoth 'M. Hill, Administrator Office (f Environmental Services

 TMH:V'RC:MAP:der

 Attachinent(s):
 Letter from Director of ODNR (1)

 Email from Kim Baker on minimum mitigation requirements (1)

cc. 3ob Gable, Diana Martin, Bob Campbell, Larry Hoffman, Hans Jindal, Keith Smith, file, permit ile, reading file

From-ENVIROMENTAL SERVICE

6147287368



United States Department of the Interior

NATIONAL PARK SERVICE

MIDWEST REGION 1709 JACKSON STREET OMAHA, NEBRASKA 68102-2571

DCT 8 2003

L7617 (MWR-PL/C)

Mr. Leonard E. Brown Division Administrator Federal Highway Administration Ohio Division Office 200 N. High Street Columbus, Ohio 43215

Dear Mr. Brown:

It has been nearly a year since the National Park Service (NPS) agreed to participate as a Cooperating Agency in the preparation of the Tiered Environmental Impact Statement for proposed improvements in the Eastern Corridor of Cincinnati, Ohio (Eastern Corridor of the city of Cincinnati Improvements, from Cincinnati Business District, East to Milford, Batavia, and Amelia and South into Northern Kentucky, along I-275 and I-471). In the interim, I understand the Federal Highway Administration (FHWA) has been conducting planning activities for this project, and has announced an interagency meeting to be held on October 14th for the purpose of updating agencies and cooperators on the project status. We welcome the opportunity to participate actively in this process, and trust the agenda will provide for opportunities to discuss concerns.

While we have not been provided internal draft documents to review, the information presently contained on the project website (<u>http://www.easterncorridor.org/</u>) indicates the range of alternatives evaluated within the segment affecting the Little Miami National Scenic River. Thus, this letter is to reiterate our request that an avoidance alternative for a river crossing over the Little Miami River is actively provided in all stages of the planning process (tier I and future tiers), particularly in association with segments that directly affect the Little Miami. We believe it is critical for such an alternative to be included early in the tier I planning process, otherwise, the process effectively eliminates the possibility of avoiding impacts to this nationally significant river. We are concerned the proposal will contain only one solution for the Little Miami segment. Evaluations that include only one option is not the purpose or the intent of the National Environmental Policy Act.

We, again, request an early opportunity to review and comment on all internal draft plan documents that affect the Little Miami River.

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As you know, the project has the potential to impact the Little Miami Wild and Scenic River, a component of the National Wild and Scenic Rivers System (System). Per the Wild and Scenic Rivers Act (Act), the NPS, on behalf of the Secretary of Interior, has the responsibility to prepare section 7 determinations for water resource projects that affect components of the System. Additionally, the NPS has the responsibility to provide comments regarding impacts to section 4(f)/6(f) resources, under the Department of Transportation Act.

The Little Miami River is a State-administered component of the National Wild and Scenic Rivers System. The purpose for designating the Little Miami River was to protect its free-flowing character; water quality; and outstanding scenic, recreational, and/or biologic and geologic values. The Little Miami is protected under section 7(a) of the Act, which states that:

"no department or agency of the United States shall assist by loan, grant, license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration."

Bridge crossings are considered water resource projects and would require evaluation under section 7(a) of the Act. This project certainly carries that potential. Projects that would have a "direct and adverse effect" on the values for which a river was added to the National System are prohibited. The NPS is responsible for evaluating projects and their effects on designated rivers.

The NPS has a continuing interest in working with the FHWA to ensure that project impacts to resources of concern to the NPS are adequately addressed. Ms. Sue Jennings, of my staff, is available for assistance. Sue may be reached at 402-221-3493.

These comments have been provided as early technical assistance and do not necessarily indicate the NPS's or the Department of Interior's responses to future environmental documents prepared in association with the project.

Sincerely,

Vink

James A. Loach Acting Regional Director

cc:

Mr. Mark L. Vonder Embse Urban Planning Engineer Federal Highway Administration 200 North High Street, Room 328 Columbus, Ohio 43215

Mr. Don Kathan U.S. Environmental Protection Agency Region 5 77 West Jackson Boulevard Chicago, Illinois 60604-3507

Mr. Jerry Ballard, Assistant Regional Scenic River Manager Division of Natural Areas & Preserves Ohio Department of Natural Resources 5349 Wilmington Road Oregonia, Ohio 45504-9704

Mr. Bob Gable, Scenic River Services Group Division of Natural Areas & Preserves Ohio Department of Natural Resources 1889 Fountain Square Ct, Bldg. F-1 Columbus, Ohio 43224

Mr. Eric Partee Little Miami, Inc. 6040 Price Road Milford, Ohio 45150-1429

	State of Ohio Environmental Protection Agency RECE		EIVED	
STREET ADDRESS:		MAY 0 7 2004	MAILING ADDRESS:	
Lazarus Government Center 122 S. Front Street Columbus, Ohio 43215 May 4, 2004	TELE: (614) 644-3020 FAX: (614) 544-3184	OFFICE OF ENVIRONMENTAL SERVICES		

Timothy M. Hill, Administrator Ohio Department of Transportation Office of Environmental Services **PO Box 899** Columbus, Ohio 43216-0899

Re: Eastern Corridor Study **Preliminary Draft Environmental Impact Statement**

Dear Mr. Hill:

This is to acknowledge our receipt and review of the Eastern Corridor Preliminary Draft Environmental Impact Statement (Tier 1, Part A) that we received in this office on March 31, 2004. The report presents information on the nature of the Eastern Corridor project, transportation needs in the corridor 32 area, important environmental resources, development and evaluation of feasible alternatives, preliminary assessment of expected impacts, important social, cultural, and economic issues, public involvement and coordination, discussion on preliminary environmental mitigation, and recommendation on a transportation plan for further consideration in Part B. We understand the Eastern Corridor Study to be a multi-modal concept that involves a realignment of a portion of SR 32 between the City of Cincinnati and its eastern suburbs. The Eastern Corridor workgroup is considering a SR 32 highway alignment as well as rail, bus and bikeway alignments integrated into the project. Overall, the project would improve traffic congestion and safety, and promote economic growth and development in the area. We offer the following comments on the report:

Impaired or Disturbed Watersheds, and Watershed Improvement/Mitigation **Opportunities**

1. Little Miami River - We are aware that changes in land use patterns in the Little Miami River (LMR) Watershed are altering the rates and types of nonpoint pollutants discharged within the watershed. Increase in impervious surface area and land cleared for construction in the watershed, for example, for residential and commercial development, is reported to cause impairment of valuable forested land and riparian habitats, resulting in accelerated rates of erosion and volumes of runoff and sedimentation in streams. The runoff may contain significant amounts of pollutants such as nutrients, pesticides, and solids. With this in mind, we encourage consideration of transportation design and construction activities

> Bob Taft, Governor Jennette Bradley, Lieutenant Governor Christopher Jones, Director

Timothy M. Hill, Administrator Ohio Department of Transportation Eastern Corridor Study Page 2 of 4

> that minimize habitat impacts, alteration, fragmentation and destruction, and emphasize mitigation and restorative stratagies that improve water quality and habitat conditions in this watershed, especially the Lower Little Miami River subwatershed.

2.

Subwatersheds - A portion of the eastern terminus of the detailed study area falls within the Lower East Fork (HUC 05090202-130-060) and Shayler Road (HUC 05090202-130-050) watersheds, Clermont County. The East Fork Watershed Collaborative recently issued a report: Lower East Fork Watershed Management Plan (2003) in which they presented goals for improving the Lower East Fork watershed. For the Lower East Fork (Little Miami River), from the confluence with the Little Miami River to the entrance of Stoneclick Creek at RM 8.8, which is not meeting its EWH use designation, management plan goals include a reduction of nutrient loadings from wastewater treatment plants, on-site septic systems, sanitary overflows, and urban stormwater. The plan also recognizes a goal of protecting 25% of the riparian corridor between RM 0 and RM 8.8 through land purchase or conservation easement. The Collaborative also issued the Shavler Run Watershed Management Plan (2002). The report indicates that the Shayler Run watershed has 10.4% imperviousness. The US EPA considers a watershed having 10-25% impervious surface as degraded or impacted]. The report recognizes high impervious surface as contributing to stormwater problems and stream instability. The report states that 62 percent of the streams assessed in the Shavler Run watershed are currently considered unstable. Shayler Run has over 41 road bridges and 68 utility crossings. The report found (2002 survey) that there are several locations in the Shavler Run riparian corridor where the riparian corridor could be reforested, and the report identified a number of locations where stream channel instability has caused a significant loss of riparian corridor habitat.

The Clermont County Phase I project Agreement is considering management as a method of controlling nonpoint sources of pollution to the East Fork Lower Miami River Watershed. This includes the use of buffer strips along riparian corridors, crop land erosion control, fertilizer management, stream bank restoration, and stormwater controls.

We encourage the Eastern Corridor Study group to recognize the problems and concerns in these watersheds, in the context of habitat impact/disturbance avoidance, minimization, abatement, and improvement. Compensatory mitigation may focus on efforts within these watersheds that consider methods to abate the problems of impervious surfaces and nonpoint source discharges by improving/developing stormwater controls and wetland habitat to contain high peak flows, pollutants, and sedimentation.

Timothy M. Hill, Administrator Ohio Department of Transportation Eastern Corridor Study Page 3 of 4

Area #2 - Ohio 32/Wooster West

3. The Detailed Study Area within this area contains high quality ecological and cultural resources (e.g. historical, ground-water aquifer, preserves, parks, wetlands, floodplain habitat). For example, it has come to our attention that the Horseshoe Bend in the Little Miami River is an ecological diverse habitat. We understand that a recent study conducted on the Bend reported rare species of birds and other important flora and fauna.

If this study area is selected for developing transportation routes, we suggest considering design alternatives that minimize impacts to these resources. We prefer an alignment, including crossing (bridges, culverts), that is aligned to the south or north of the Horseshoe Bend.

2. Groundwater Aquifer - The LMR flows atop a buried valley aquifer composed of highly permeable sand and gravel. The aquifer is a major source of water in the area and has been designated a Sole Source Aquifer by the US EPA. A portion of the detailed study area overlaps this aquifer. We caution avoiding or minimizing impacts to this aquifer and control any discharges that may potential contaminate this resource.

Design Considerations

1. To minimize impacts to aquatic resources and habitat, we would like for you to consider integrating existing transportation roadway structures with the Corridor 32 transportation design alternatives, if feasible. This may require restoring or improving existing structures to bring them up to standard. We would like to see consideration given to using "clear span" bridge crossings (as stated as an option in the report) rather than structures that involve placement of fill material below the OHWM. This is especially true for the Little Miami River and its high quality tributaries.

General Mitigation Suggestions

1. In addition to the mitigation ideas presented above and described in the report, we offer some general suggestions on compensatory mitigation. We encourage considering the acquisition and conversion of disturbed areas (Brownsfield) into green space, and the restoration/enhancement/development of riparian and wetland habitat. Other ideas include "stream daylighting" (from buried culverts and pipes),

Timothy M. Hill, Administrator Ohio Department of Transportation Eastern Corridor Study Page 4 of 4

for example, of streams from farm tiles in agricultural land, and restoration of floodplain habitat. We encourage the Eastern Corridor workgroup to network or harmonize its mitigation efforts with local watershed groups (such as those described above) with respect to their restoration and mitigation plans and activities.

We wish to express our appreciation to the Eastern Corridor Study group for allowing use to review its latest report. Please continue to keep us informed of the latest developments in regards to the Eastern Corridor Study.

Sincerely,

arther & Colommin

Arthur L. Coleman, Jr. Environmental Specialist Division of Surface Water

cc: Max Hagan, Louisville District, USACOE/Ohio Field Office (Cincinnati) Randy Sanders, ODNR/REALM Diana Zimmerman, DSW/SWDO Kenneth Lammers, USFWS William Cody, OES/ODOT Mike Pettegrew, OES/ODOT Larry Hoffman, OES/ODOT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION5

HEGION 5 77 WEST JACKSON BOULEVARD CHICAGO, IL 60604-3590

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Timothy M. Hill, Administrator Office of Environmental Services Ohio Department of Transportation 1980 West Broad Street Columbus, OH 43223

RE: Tier 1 (Part A) Preliminary Draft Environmental Impact Statement for the Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio PID #22970

Dear Mr. Hill:

In response to your request of April 2004, we have reviewed of the Preliminary Draft Environmental Impact Statement (PDEIS) for the Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio. The project involves area-wide transportation planning for the area east of Cincinnati and includes bus, railway, bike path, and highway construction or improvements.

We recognize the complexity of large-scale transportation planning in an area with numerous Section 4(f) and 6(f) resources, and we respect the effort put into this document. The cooperation of many local planning agencies, communities, and State and Federal agencies is reflected in the PDEIS. The U.S. EPA offers the attached comments, which we hope will be useful for developing the Tier 1 Draft Environmental Impact Statement (DEIS).

We appreciate the opportunity to review this project and document in its preliminary phase. If you have any questions or wish to discuss any aspect of the comments, please contact Anna Miller of my staff at (312) 886-7060 or via e-mail at miller.anna@epa.gov.

Sincerely,

Kenneth A. Westlake, Chief Environmental Planning and Evaluation Branch Office of Strategic Environmental Analysis

Enclosures

U.S. EPA Region 5 Comments

Tier 1 (Part A) Preliminary Draft Environmental Impact Statement (PDEIS) Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio PID #22970

1. Levels of Service on highway segments

In Table 2.2 (Chapter 2, Purpose and Need, page 2-4), year 2020 expected peak hour levels of service (LOS) are given as a range of grades. For example, Newton Road is rated "C, D, E, and F." The conclusions being drawn in this table are not clear because the condition is given as a range. The DEIS should explain why the LOS is given as a range, or it should refine the table to a single expected LOS value per highway segment. In addition, current conditions are not described in a comparable way. We recommend the DEIS include a table of the current LOS for the same segments.

Little Miami River bridge crossing

The PDEIS presents two options for relocating Highway 32: Option 1, which includes a new bridge crossing over the Little Miami, and Option 2, which avoids a crossing. The PDEIS carries Option 1 forward, while Option 2 is dropped from further analysis. Information in the PDEIS suggests, however, that Option 2 should still be evaluated in the DEIS. For example, the PDEIS states that "both options provide travel benefits, but Option 1 performed more efficiently." The basis for this and for similar statements is not present, however, and no evidence is given to support that Option 2 is not feasible. The PDEIS does not provide supporting information for the decision on the options, such as: site-specific environmental impacts of an additional bridge crossing, the environmental impacts of widening an existing bridge, a comparison of environmental impacts for the options, a comparison of the number of relocations required by each option, or a comparison of the transportation benefits for each option. Without the full discussion, we are unable to determine how the options compare or why Option 2 is eliminated.. This level of analysis may be more typical of the project-specific stage, but these options need to be discussed more fully in the Tier 1 DEIS if the decision affects other modes that would be part of different projects, such as the location of the Modal Convergence Area.

A Tier 1 DEIS should retain feasible options that address the project's purpose and need and avoid environmental impacts. The PDEIS does not successfully demonstrate that Option 2 is not feasible, so it is premature to eliminate it from further evaluation. Therefore, we recommend carrying it forward as an alternative. Furthermore, we find that the status of the Little Miami River as a National Wild and Scenic River warrants further analysis on the impacts and benefits of each option.

3. Highway Relocation in relation to other projects within the study area

The decision to characterize a new bridge over the Little Miami as unavoidable (as the PDEIS states in several instances) affects other decisions related to it, such as the location of the Modal Convergence Area in the Fairfax area and the alternatives for highway relocation in Area #2 - Ohio 32/Wooster West. It is not clear whether the Modal

1

2.

Convergence Area or highway relocation alternatives are controlling the new bridge location or are a result of it. Option 1's new bridge location seems to have already been fairly tightly constrained with respect to the original study area. We recommend explaining the selection of this particular corridor for a bridge crossing in the DEIS.

Because we do not agree that the PDEIS confirms that a new bridge crossing is unavoidable, we think decisions based on that determination may need to be reevaluated in the DEIS and/or during the Tier 2 (Part B) project-specific stage. For example, retention of Option 2 for further evaluation could affect the boundaries of the detailed study area.

Cultural Resources

4.

We recognize that Area #2 - Ohio 32/Wooster West has numerous cultural resource and Section 4(f) areas that must be considered in area-wide planning, and the PDEIS has taken this into account. All alternatives, however, are likely to impact the Hahn Field Archeological District, which is on the National Register. The location of the new bridge option appears to determine the relocation of the highway through this resource. We suggest that reinstating Option 2 (no new bridge crossing) may yield other alternatives, during the Tier 2 (Part B) stage, that minimize the impacts to the Hahn Field.

Osborne, Deborah

From:Keith Smith [Keith.Smith@dot.state.oh.us]Sent:Tuesday, May 18, 2004 8:17 AMTo:Osborne, Deborah; Record, Rick; Wharton, SteveSubject:Fw: ODNR 04-0086: ODOT Eastern Corridor EIS

Keith Smith, P.E. Environmental Engineer, ODOT D-8 Keith.Smith@dot.state.oh.us 1-800-831-2142 or 513-933-6590

--- Forwarded by Keith Smith/Planning/D08/ODOT on 05/18/2004 08:16 AM -----

Larry Hoffman

 To:
 Mark.Vonderembse@fhwa.dot.gov, Keith Smith/Planning/D08/ODOT@ODOT, mecord@balke.com

 05/18/2004 08:12
 cc:
 Tim Hill/Environmental/CEN/ODOT@ODOT, Tim Bell/Director/CEN/ODOT@ODOT, Bill

 AM
 Cody/Environmental/CEN/ODOT@ODOT
 Subject:

 ODNR 04-0086; ODOT Eastern Corridor EIS
 ODNR 04-0086; ODOT

----- Forwarded by Larry Hoffman/Environmental/CEN/ODOT on 05/18/04 08:08 AM -----

"Sanders, Randy" <Randy.Sanders@dnr.state.oh.us>

To: "Tarry.hoffman@dot.state.oh.us" <larry.hoffman@dot.state.oh.us>

05/11/04 03:59 PM

cc: "fredric.steck@dot.state.oh.us" <fredric.steck@dot.state.oh.us> Subject: ODNR 04-0086; ODOT Eastern Corridor EIS

ODNR COMMENTS TO ODOT; Eastern Corridor EIS

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Location: Hamilton and Clermont Counties, Ohio

Rare and Endangered Species: The ODNR Natural Heritage Database contains records within the project area and the immediate vicinity are listed below. Status codes are as follows: E=endangered, T=threatened, P=potentially threatened, SC=species of concern, SI=special interest, FE=federal endangered. Although some of the records for these species may be in the vicinity of and not directly within the project area as defined up to this point in the process, the final corridors should be inventoried for these species as appropriate habitat may exist. Little Miami State and National Scenic River Salix caroliniana ~ carolina willow, P Moxostoma carinatum - river redhorse, SC Noturus stigmosus - northern madtom, E Noturus eleutherus - mountain madtom, E Lota lota - Burbot, SC Cycleptus elongatus - blue sucker, E Obliquaria reflexa - threehorn wartyback, T Anodonta suborbiculata - flat floater, SC Truncilla truncata - deertoe, SC Truncilla donaciformis - fawnsfoot, T Quadrula nodulata - wartyback, E Graptemys pseudogeographica - false map turtle, SC Porzana carolina - sora, SC

East Fork Little Miami River Simpsonaias ambigua - salamander mussel, SC Truncilla donaciformis - fawnsfoot, T Truncilla truncata - deertoe, SC Obliquaria reflexa - threehorn wartyback, T Elliptio crassidens - elephant-ear, E Noturus eleutherus - mountain madtom, E Noturus stigmosus - northern madtom, E Moxostoma carinatum - river redhorse, SC

Ohio River Spermacoce glabra - smooth buttonweed, P Moxostoma carinatum - river redhorse, SC Lota lota - burbot, SC Percina shumardi - river darter, T Obliquaria reflexa - threehorn wartyback, T Ellipsaria lineolata - butterfly, E Elliptio crassidens - elephant-ear, E Pleurobema cordatum - Ohio pigtoe, E Quadrula metanevra - monkeyface, E

Immediate Vicinity Trifolium stoloniferum - running buffalo clover, E, FE Clonophis kirtlandii - Kirtland's snake, T Lanius ludovicianus - loggerhead shrike, E

Scenic Rivers: The Little Miami River is a designated State and National Scenic River. Additional comments may be submitted as the project is better defined.

Fish and Wildlife: Additional comments may be submitted as the project is better defined. A number of rare and endangered species are present a long with some exceptional stream assemblages.

Special Flood Hazard Area: The proposed project may or may not be located in a Special Flood Hazard Area. To assist you in this determination, please contact the community's floodplain administrator. A list of community floodplain administrators can be found on the ODNR - Division of Water website at http://www.dnr.state.oh.us/water/floodpln/. To view a copy of a Flood Insurance Rate Map for your project area, you can either contact the community floodplain administrator, or obtain a copy online from the FEMA Flood Map Store at http://store.msc.fema.gov/.

ODNR appreciates the opportunity to provide these comments. Please contact

Randy Sanders at 614.265.6344 if you have questions about these comments or need additional information.

Randall E. Sanders Environmental Administrator Division of Real Estate & Land Management Ohio Department of Natural Resources 1952 Belcher Drive C-4 Columbus Ohio 43224 614.265.6344 fax 614.267.4764 randy.sanders@dnr.state.oh.us

614/28/368



DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, LOUISVILLE CORPS OF ENGINEERS, OHIO FIELD OFFICE 10557 MCKELVEY ROAD CINCINNATI, OHIO 45240-3929 http://www.brl.usace.army.mil

May 24, 2004

Operations Division Regulatory Branch (North) ID No. 200400396-cmh

RECEIVED MAY 2 6 2004 ENVIRONMENTAL SERVICES

Mr. Timothy M. Hill Ohio Department of Transportation Ofice of Environmental Services Post Office Box 899 Columbus, OH 43216-0899

Dear Mr. Hill:

This is in regard to your letter dated March 25, 2004, and the Tier I Preliminary Draft Environmental Impact Statement (PDEIS) for the Eastern Corridor Multi-Modal Projects in Hamilton and Clermont Counties, Ohio (PID 22970).

The Corps of Engineers exercises regulatory authority under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344). The data you furnished indicate authorizations under one or both of these sections of law may be required before you begin the work. However, the information given is insufficient for us to be certain of the need for permits on this particular proposal. We will need additional detail on the projects' design, scope, and construction methods in order to determine whether Department of the Army (DA) permits are required.

Authorization pursuant to Section 10 is required for any work or structures below or riverward of the ordinary high water mark on a designated "navigable waters of the United States." This includes the Ohio River, Little Miami River, East Fork Little Miami River to Mile 6.4, and Four Mile Creek to Mile 2.5 in the PDEIS study area. We will defer to the U.S. Coast Guard any bridge or causeway on navigable waters that they chose to regulate pursuant to Section 9 of the Rivers and Harbors Act.

Authorization pursuant to Section 404 is required for the placement of dredged or fill material into any "waters of the United States." This includes the above-mentioned rivers, itinerant tributaries to these streams extending into the headwaters, and any jurisdictional adjacent wetlands. These streams may be perennial, intermittent, or ephemeral having defined bed-and-bank features with an ordinary high water mark. Often unnamed tributaries with these characteristics extend beyond those indicated by blue lines on 7.5 minute USGS quad maps in Ohio. Jurisdictional wetland determinations need to be conducted in accordance with the 1987 Corps of Engineers Manual and supplemental data. Adjacency is indicated as being contiguous, bordering, or neighboring jurisdictional streams. We will implement regulation of isolated wetlands only with a substantiated interstate commerce nexus.

A report of investigations and findings is normally provided for our review and determination of concurrency. We will be available to meet with representatives from your office and/or your consultants upon being provided a copy of the report so that we may verify onsite jurisdiction determinations and delineations prior to the preparation of the DEIS.

The avoidance, minimization, or potential mitigation will be required to minimize adverse impact to aquatic resources. This scoping process should be included in the alternative analysis and the feasible alternative selection process. Appurtenances such as access roads, staging areas, and borrow sites require review along with construction activities.

It is best to ultimately submit a formal DA permit application once the feasible alternative selection process is completed. Should an individual permit be required, we can then begin processing your request immediately. Enclosed is a packet that contains the information and forms needed to apply for a DA permit. You are reminded that all drawings must be submitted on 8%- by 11-inch paper and be of reproducible quality. Please allow sufficient time for the processing of the permit application.

Thank you for the opportunity to review and comment on this PDEIS. This proposal has been assigned our Identification Number 200400396. Please reference this number on all correspondence pertaining to this project. If we can be of further assistance, please contact this office by writing to the above address or by calling me at 513-825-1901.

Sincerely,

man Ha Mr. Max Hagan

Team Leader Ohio Field Office

Enclosures



United States Department of the Interior

NATIONAL PARK SERVICE

MIDWEST REGION **1709 JACKSON STREET** OMAHA, NEBRASKA 68102-2571

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OFFICE OF

ENVIRONMENTAL SERVICES

L7617 (MWR-PL/C)

Mr. Timothy Hill Office of Environmental Services Ohio Department of Transportation Central Office, P.O. Box 899 Columbus, Ohio 43216-0899

Dear Mr. Hill:

As requested, the National Park Service (NPS) has reviewed the internal review copy of the tier I Preliminary Draft Environmental Impact Statement for Eastern Corridor Multimodal Projects, Hamilton and Clermont Counties, Ohio (PDEIS). The NPS, a cooperating agency on the project, offers the following comments for inclusion in the DEIS:

GENERAL COMMENTS:

We recognize that multi-modal transportation planning for the greater Cincinnati area is an intricate planning effort and involves multiple jurisdictions, an array of transportation problems, and numerous environmental challenges. The PDEIS is a comprehensive document, reflecting the complex nature of the numerous issues involved.

Although it is anticipated the proposed bridge crossing the Little Miami Wild and Scenic River (LMWSR) would not include bridge piers in the water (and would therefore not involve section 7 approval by the NPS), we are troubled by the lack of alternatives to the proposed bridge over the LMWSR. Specifically, within segment II (U.S. 50/River Crossing to Newtown Road), a transportation enhancement alternative that avoids a new bridge crossing of LMWSR is absent, as requested in our letter to your office dated October 2003. Related to this, given the lack of baseline data on the LMWSR, it appears the evaluation did not consider the national significance of the LMWSR, nor the commitments made by the State of Ohio to the Secretary of the Interior (Secretary), when the State requested the Secretary to designate the Little Miami as a Federal Wild and Scenic River (see enclosed documents).

Given the national significance of the LMWSR, the management requirements for the State of Ohio (particularly under sections 10 and 12 of the Wild and Scenic Rivers Act (Act)) and the stated goal of protecting key environmental features in the project area (PDEIS 1-15; 2-2), it is important an alternative that avoids significant impacts to the

LMWSR is fully evaluated. We believe an alternative that embraces all other modal elements of the project (bus, rail, and expansion of existing road capacities in addition to expansion of highway capacities at existing river crossings), without a bridge crossing the LMWSR is a feasible alternative. Such an alternative would meet the project purpose and need (improving traffic flow, reducing congestion, reducing accidents and protecting key environmental resources), would avoid significant impacts to the LMWSR, and would reduce costs associated with a bridge design that fully spans the LMWSR's floodplain.

The PDEIS does not provide a rigorous evaluation of the potential impacts (direct, indirect, and cumulative) the proposed bridge would have on the LMWSR outstandingly remarkable values (ORVs), values which are protected by the Act. A discussion of these impacts in the context of the tremendous amount of Federal, State and local funds used to rehabilitate the Little Miami River, which led to the Little Miami's inclusion in the National Wild and Scenic Rivers System should be included in the existing cost-benefit section (chapter 1.6.3).

The PDEIS indicates option 2, which includes the relocation of State Route 32 (no bridge crossing the LMWSR) had been actively considered as a conceptual alternative within the corridor during the internal scoping process, and was then eliminated prior to the publication of the notice of intent. This is a decision the NPS, as an agency with jurisdictional responsibilities for one of the affected resources, would have preferred to be involved in. We note chapter 3-8 of the PDEIS indicates this decision was based on qualitative information provided in a position paper prepared by the Hamilton County Engineer's office. The position paper should be disclosed in this document. Curiously, the PDEIS (chapter 3-7) states performance results "indicated both options provided travel benefits." Because travel improvements are a stated purpose and need of the project, we are perplexed as to why option 1 was retained and option 2 dismissed. Equally troubling is the PDEIS states both option 1 and option 2 had varying degrees of traffic and/or environmental issues associated with them. Clearly, in comparing the evaluation factors associated with option 1 and option 2, it appears legitimate positive and negative benefits (impacts), albeit qualitative, were attributed to each option. Thus, rather than eliminate these alternatives prior to analysis, we strongly believe the alternatives should be carried forward for a comprehensive and rigorous environmental review and analysis based on quantitative data. This is particularly crucial in light of the potential impacts to nationally significant resources associated with option 1, as well as the local opposition and general controversy surrounding the proposed bridge that is contained in option 1.

The project as proposed includes a bridge over the LMWSR which is anticipated to span the riparian corridor. We understand that specific bridge design details within the corridor are expected to be resolved in the tier I planning process, however, a visual simulation of the structures general design should be provided for in the tier I document and available for public review and comment. A discussion of the feasibility of a design approach which precludes the use of piers in the river bed and/or banks should also be included in the current document.

For the purpose of early coordination, should the bridge design change to include bed/bank work, piers or other modifications to the bed or banks of the LMWSR, and thus require a section 7(a) determination, per the Act, we have prepared a *preliminary* section 7(a) determination, on behalf of the Secretary. It is our preliminary determination that such a bridge structure would have a direct and adverse effect on the *scenic* and *recreational* ORV's of the LMWSR. Please continue to consult with our agency on bridge design, bridge components (storm water outfalls, abutments, piers) or other associated design features that would require Federal permits, or otherwise qualify the project as a "water resources project" pursuant to the Act.

We are enclosing copies of pertinent recommendations, letters, and commitments that led, upon the State of Ohio's request, to the inclusion of the lower 29 miles of the Little Miami River into the National Wild and Scenic Rivers System. The information contained in these documents should be integrated into the current planning and decision making process.

SPECIFIC COMMENTS:

<u>Title page; Summary and Introduction</u>: Please indicate that the NPS is a cooperating agency, per our affirmative response to your October 2002 written request. To avoid confusion, here and elsewhere in the document, please avoid referencing the tier I and tier II elements as "part A" and "part B" of the process. The terms "part A, part B" imply that the process entails separate individual products, rather than serving as a hierarchy of planning decisions. As you know, all elements in tier II must flow from tier I and be consistent with tier I decisions. Thus, decisions made in tier I will drive the elements in the second tier; likewise, any option(s) dismissed in tier I, may not be introduced into tier II. This concept should be made clear to the public.

<u>S-2. Alternatives Under Consideration</u>: The PDEIS does not contain a clear presentation of the alternatives to the proposal, and thus it is very difficult to determine what the alternatives entail, the nature of the decision to be made, and consequently, what the associated environmental impacts would be for each alternative. Please clearly identify the range of action alternatives under consideration, and include a matrix of associated impacts for the each set of alternatives.

Council on Environmental Quality (CEQ) regulations require an environmental impact statement to: "...inform the decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the environment." We gather from the PDEIS that within each mode of transportation (expanded bus, rail, highway, etc.) there are various improvement concepts which would occur, regardless of location, in addition to a no build alternative (baseline alternative). If this is correct, the PDEIS provides only one action alternative, rather than a full range of alternatives. A matrix of each active/action alternative being considered for the major transportation modes, highlighting the either/or options and/or segments (the decisions to

be made prior to tier II) should be summarized here and fully presented in chapter 3 of the PDEIS.

Under the highway mode, please clarify that within this transportation improvement mode, there are several segments, each of which has its own set of proposed corridors for development, in addition to specific crossings (please clarify this in the alternatives chapter as well)

<u>S-5. Segments I-III</u>: Here and elsewhere in the document, the Little Miami should be correctly identified as the "Little Miami Wild and Scenic River" which distinguishes the LMWSR from other rivers and creeks in the project area as a nationally significant resource.

<u>S-9, Preliminary Impact Assessment for Feasible Multi-Modal Alternatives by Area</u>: This section follows the sub-topic titled "preliminary impact assessment by mode" and thus further contributes to confusion regarding what the alternatives are, and more importantly, what the associated impacts would be for each alternative under consideration. Please clarify the purpose of this section, and how it related to the decision to be made.

<u>S-11. Agency Coordination, paragraph 1</u>: Please indicate when the regulatory agency coordination meetings were held. <u>Paragraph 2/3</u>: Please indicate here and in section 1-10 ("Lead Agency in NEPA process") that, "...because of jurisdictional responsibilities the NPS, following publication of the notice of intent, was granted cooperating agency status, as provided for in the National Environmental Policy Act (NEPA)."

<u>S-11, Project Implementation</u>: Until a decision has been made, the phrase "...the Eastern Corridor Project will be successfully implemented" should be changed to "would be successfully implemented."

<u>S-12, permits</u>: Section 4(f) resources and section 106 evaluations are listed together as one item. While many of the resources involved are subject to both laws, these entail separate statutory requirements, each having separate thresholds, standards for evaluation, and criteria for demonstrating compliance. We recommend these topics be listed as separate issues here and throughout the document.

<u>1.2.2. MIS Goals</u>: Please elaborate/identify in this document the "larger environmental goals for the Eastern Corridor region." Please also indicate how these broad goals will be measured and/or evaluated, and thus how decision makers will determine which alternative of the project best meets project goals.

<u>1.2.3. MIS (Major Investment Study) Evaluation Process and Recommended Plan</u>: This section indicates the MIS Task Force reviewed travel performance data, costs, public comments, position statements and subgroup discussions and made the decision to "... include a new Little Miami River crossing..." (MIS April 2000). These decisions appear to be made without benefit of a rigorous environmental analysis, nor involvement of all

entities having jurisdictional responsibilities, and were made prior to the publication of the notice of intent associated with this project. Please explain how this decision was made without input from critical stakeholders.

The last paragraph mentions key decision-making factors used in the evaluation process (2020 Vision for the Eastern Corridor (VEC), April 2000). While we did not have an opportunity to review the document, we do note the 2020 VEC includes the following statement as one of four primary goals: "Must enhance, rather than degrade the rich mixture of natural and man-made environmental features in the study area and provide support for the larger environmental goals of the region." This goals statement should be fully carried forward into this document and the alternatives clearly measured against it (see section 1.2.2 comments).

<u>1.5.2. Tiered National Environmental Policy Act Process. Paragraph 1</u>: The first sentence is incorrect. While tiering is an approach used in NEPA documents, it does not necessarily take place in only two stages. Please clarify to indicate that the tiering process is an appropriate tool to use when working from broad, general NEPA environmental impact analysis documents to more site-specific ones in decision-making and that in this planning effort it is occurring as a two tier process (See 40 C.F.R. (Code of Federal Regulations) §1508.28, §1502.20, and, also, CEQ's Forty Questions No. 24(c)). Paragraph 2: please change the phrase "…and level of expected impact" to "…and degree or intensity of predicted impact."

<u>1-10, Coordination for Tier I Environmental Work Plans, first sentence</u>: Please clarify. As written, this sentence implies NEPA environmental assessments were conducted as part of the tier I process. Consider changing "assessment" to "analysis." The methodologies, impact thresholds and criteria for the analysis and assessment should be discussed here and in chapter five of this document.

<u>1.6.3. Benefit/Cost Analyses</u>: This section indicates the costs and expected benefits of the tier I will be used in the decision-making process which will be carried through into tier 2. Please clarify that this section refers to economic benefits/costs, and indicate how this relates to the NEPA process for decision-making.

1.7.3, Environmental Conditions: The use of the term "man-made" in the first sentence is confusing. If this refers to historic and pre-historic features of local/regional/national cultural significance, please state so. Please define "built-up communities." <u>Paragraph 2:</u> "Air quality and noise" are not features, rather they are conditions. Please restate to indicate clean air and opportunities for solitude, quiet and natural sound are important environmental conditions to preserve. This section should clarify that the Little Miami River is a component of the National Wild and Scenic Rivers System, as well as a State-designated river.

<u>2.1. Purpose and Need</u>: The stated purposes of the project are to implement a multi-modal transportation program consistent with the adopted long range plan for the region, which addresses priority needs and furthers four project goals established in the Major

Investment Study phase. Please clarify if the "long range plan for the region" is identified in the Eastern Corridor Land Use Vision Plan (Meisner and Associates, May 2002) that is cited in this section, and indicate if this regional plan was subject to NEPA review (if not, please explain). We note the four project goals are broadly defined. The PDEIS does not indicate the degree or level of mobility improvements or economic support desired, which makes it difficult to determine if the purpose and need of the project will be met. Goal four indicates the solution should be "consistent with larger environmental goals identified for the region." Please cite what the larger environmental goals are.

Table 2.1, 2.2: Please cite the source of the data used in the model, and indicate what the assumptions and/or limitations of the model are.

2.2.4, Safety Issues: For the lay reader, please define "high traffic volumes" and "below standard levels of service," and cite the source for information included in table 2.4.

<u>2.2.4. Intersection Accidents and Trends in Accident Data</u>: Please identify what the causes of the accidents were (weather, poor visibility, excessive speed, limited sight distance, congestion, etc.), and how these trends compare to other areas with similar population and/or growth rates.

<u>3.0. Alternatives, Chapter Organization</u>: Per 40 C.F.R. §1502.14, the alternative section of an EIS should (in addition to other factors): rigorously explore and objectively evaluate all reasonable alternatives; devote substantial treatment to each alternative, including the proposed action so that reviewers may evaluate their comparative merits; identify the lead agency's preferred alternative; and include appropriate mitigation measures when not already part of the proposed action or alternatives. The PDEIS does not demonstrate these requirements were properly achieved.

A description of feasible alternatives by *mode* is contained in chapter 3.4.1, yet chapter 3.4.2 provides a description of multi-modal feasible alternatives by *geographic* areas. The mixing of presentation styles is very confusing, and makes it difficult to distinguish what the other action alternatives are (within multi-modal structure or within each geographic area). An additional alternative worth further exploration in this document, would include a combination of the proposed traffic enhancements common to the preferred proposal (widening of existing railroad/highway crossings), with increased road, bus and/or light-rail capacity at key points, yet that excludes the new bridge crossing the LMWSR.

<u>3.2.1. (Alternatives) Summary of Major Investment Study (MIS) Alternatives</u>: This section states that the Eastern Corridor Major Investment Study (OKI, April 2000) consisted of a five-level process for the development of the recommended plan, which included a number of broad alternatives (table 3.1), some of which were carried forward into the current PDEIS for the Eastern Corridor. Some alternatives were dropped during this planning phase, and a number of recommendations were carried forward, please

clarify why the MIS decisions are not evaluated in tier I of this planning effort, or otherwise subject to the requirements of NEPA and/or stakeholder input.

<u>3.1.3. Documentation of Alternatives Development, paragraph 3</u>: This section states: "Three rounds of public meetings and a broad range of other public involvement opportunities have been conducted since the Eastern Corridor PE/EIS work phase began in September 2001." Please discuss why the notice of intent to prepare the DEIS was not published prior to these meetings and instead was published in May of 2002.

<u>3.2.2. Relocated SR 32-Options 1 and Options 2</u>: Please quantify the "travel benefits" of option 1 relative to option 2. Include the methodology used to determine the travel benefits, and how it was decided that option 1 "performed more efficiently" than option 2 (thus leading to the MIS recommendation to carry forward only option 1 and not option 2 in the PDEIS).

The PDEIS indicates option 2 would result in increased traffic volume on the existing Beechmont Levee (Levee), causing the facility to approach capacity by 2020. Please support the statement with current data, and indicate how much increased traffic is predicted compared to the increases in traffic under option 1. Related to the Levee, please describe and/or define what the "substantial impact" to existing residential and commercial development in Linwood would be (the impacts should be described in terms of context, intensity, timing, and duration).

This section states "option 1 would have greater potential environmental impacts along the Little Miami River" compared to option 2. Please describe what those impacts would be under each option in terms of intensity, timing, and duration. The relative merits of a number of factors are presented in this section, and used by the task force to evaluate both options 1 and 2. Please disclose what those factors were, indicate how the factors were weighted and/or prioritized, and what methodology was used by the task force to ultimately select option 1 over option 2.

General provisions for mitigating adverse environmental impacts to the LMWSR were outlined by the Task Force. Please indicate if these impacts were discussed in the context of the LMWR's ORVs, how the impacts were measured (methodology), and how it was determined if the proposed mitigations would be sufficient. Please discuss potential impacts associated with increased noise. We believe these questions, and the decisions regarding options 1 and 2 are appropriate to the PDEIS, rather than the MIS, and should be fully explored in the environmental consequences chapter of the document.

Finally, please consider a tunnel as a potential alternative transportation crossing under the LMWSR within segment II.

Section 4.1.4 (Affected Environment): Little Miami River and Other Surface Streams: The Little Miami River is a component of the National Wild and Scenic River System and is, therefore, subject to the provisions of the Act. As with other federally protected resources of national significance included in this chapter (Threatened and Endangered

Species, National Register Architectural Resources, National Register Archaeological Resources) the LMWSR should be treated as a stand-alone impact topic within this chapter and, consequently, in the environmental consequences chapter (see 40 CFR §1508.27). This change will allow for various sub-topics to be dealt with under the heading of the LMWSR (State status, agency coordination, preliminary section 4(f)/6(f) involvements, etc.). Please change the heading to: Little Miami National Wild and Scenic River and State Scenic River, and move "Surface Stream Resources" to another section.

We suggest the discussion of relevant laws, regulations, agency coordination, and involvements is moved to the environmental consequences chapter, and placed under the heading "Regulations and Policies", or otherwise moved to the purpose and need chapter. Section 1(b) of the Wild and Scenic Rivers Act (which summarizes national policy related to designated rivers) should be inserted in this discussion.

<u>Section 4.1.4, LMWSR</u>: This section lacks critical baseline information regarding the LMWSR. The four paragraphs below contain necessary information that is pertinent to the proposal, and should thus be included in the affected environment section that describes the LMWSR. This information should also serve as a benchmark when evaluating impacts to the LMWSR or conducting cost/benefit analysis (please consult with the Ohio State Department of Natural Resources for expenditure figures related to LMWSR enhancement projects):

The Little Miami River is a state-administered component of the National Wild and Scenic Rivers System, per section 2(a)(ii) of the Act. The purpose for designating the Little Miami River was to protect and enhance its free-flowing character; water quality; outstandingly remarkable values (ORVs): scenic/aesthetic, recreational; geologic, fish and wildlife, historic (cultural and archaeological), and otherwise scientific values (Secretary of the Interior Report to 93^{rd} Congress 1973; and amendments to the Act (16 U.S.C. 1271 et seq.). Additional requirements for management are outlined under section 10 of the Act (which requires agencies to protect and enhance river values).

Per our August 1997 letter to the Ohio-Kentucky-Indiana Council of Government on the subject, the Department of the Interior (Department) provided specific management objectives for the Little Miami River in its 1973 "The Little Miami River: A Wild and Scenic River Study." In addition to protecting the free-flowing nature and those values mentioned above, the study specifically recommends protection of the riparian zone. It emphasizes the riparian zone's importance to the diversity of wildlife, the maintenance of water quality, and the contribution of vital open space for the use and enjoyment of present and future generations in an increasingly urbanizing area.

It is important to note that the lower 28 mile segment of the Little Miami River was deemed ineligible when the Little Miami was first studied for inclusion into the national system. However, following an aggressive rehabilitation effort by State, local and Federal partners (including the Hamilton County Regional Planning Commission, the Ohio Department of Natural Resources, and the Ohio-Kentucky-Indiana Council of

Governments), the State of Ohio fulfilled the requirements of section 2(a)(ii) of the Act by: (1) designating the Little Miami as a scenic river under the provisions of the State Scenic Rivers Act; (2) developing and implementing a management plan for the river that would provide for long term protection of the rivers outstanding resources; and (3) initiating an acquisition and development program for appropriate lands and waters along the Little Miami River. Upon meeting these requirements, the State of Ohio petitioned the Secretary to designate the Little Miami as a Federal Wild and Scenic River.

In a revealing letter to Ohio Governor Rhodes, the Secretary stated "This is the first instance where a river segment previously determined to be unqualified for the National Wild and Scenic Rivers System has been brought up to System standards." In this letter, the Secretary pledged financial assistance from the Land and Water Conservation Fund to the State of Ohio to aid in the preservation of the lower Little Miami (see Section 6(f) resources comments below). To date, millions of Federal, State and local dollars, including Land and Water Conservation monies, have been used to protect and enhance the LMWSR. Clearly, the struggle to preserve the Little Miami River and its immediate environment represents the epitome of private, local, State, and Federal cooperation and a commitment by the State to protect the LMWSR and its outstanding resource values. Consideration of these commitments and values should be reflected throughout the decision-making process in the DEIS.

We note the PDEIS summarizes the classification of the LMWSR. Please be advised the classification, per section 2(b) of the Act is an indication of the degree of development *at the time of designation*, and how the segment will be administered. Classification has little bearing on impact analysis under section 7(a) of the Act, or NEPA.

<u>4.1.4. (page 4-12) Agency Coordination Regarding Section 7 Applicability</u>: Second paragraph. Please clarify that section 7 of the Act would apply to any component (bridge or otherwise) of the project on the LMWSR or its tributaries, that would be considered a "water resources" project (e.g., bank work, abutments, storm water outfalls, placement of temporary or permanent fills or structures, bank or channel shaping, channel dredging) or would otherwise require a Federal permit or approval.

The sentence "...to determine if the proposed action will 'unreasonably diminish' the recreational values of the Little Miami" is incorrect. For activities on the main stem of the LMWSR, the section 7(a) determination would "...determine if the proposed action would have a direct and adverse affect on the values for which the river was designated." The ORVs for the LMWSR include: aesthetic/scenic, recreational, fish and wildlife, geologic, historic (cultural and archeological) values. For developments below or above the LMWSR or on any stream tributary, an evaluation would be required to determine if the project would "invade the area or unreasonably diminish the scenic, recreational and fish and wildlife values." On the LMWSR, the NPS, on behalf of the Secretary, is the responsible entity for making the section 7 determination pursuant to the Act.

<u>4.1.4. Preliminary Section 4(f) involvement</u>: We recommend this section is treated as a stand-alone topic and includes section 6(f) resources. See specific comments with respect to these resources elsewhere in these comments.

4.1.7. Threatened and Endangered Species, Mussels and Mussel Beds: Because of the number and significance of State mussel species involved, we recommend treating mussels as a stand alone sub-heading. For context, it should be noted that 1) the rivers and streams of the Ohio River basin are inhabited by the richest and most diverse assemblage of freshwater mussel species found anywhere on earth, 2) that freshwater mussels are an integral component of all river ecosystems, 3) mussels are an important indicator species for assessing the health of rivers, including the LMWSR, and 4) freshwater mollusks are the most rapidly declining faunal group in the United States, and likewise in the Ohio River basin (including the LMWSR) where freshwater mussels have experienced a dramatic decline. Some species are reduced to a single population, and others may no longer be breeding. The sensitivity of this important resource should be highlighted in the discussion on the affected environment and carried forward in this and future impact analysis.

4.1.11, Air Quality and Noise/Vibration, Noise Associated with Proposed Roadway Improvements: The discussion at the bottom of page 4-38 indicates the noise abatement criteria (23 CFR 772) was used as a reference to "determine which areas along existing or proposed roadway segments are estimated to experience sound levels that approach the NAC for categories B and C under existing and build conditions." For purposes of this screening, the LMWSR should be classified as a category A receptor. While the LMWSR is not a tract of land per se, the purpose and intent of the river's national designation is commensurate to the activity category defined for category A: "parks, historic districts, and other public open spaces where sensitivity and quiet are of extraordinary significance." Quiet and opportunities for solitude and enjoyment of the natural features are important elements of the LMWSR and are related to the values for which the river was included in the national system. As reflected in the stated management recommendations for the river (Secretary's 1973 report to Congress), the LMWSR is recognized for providing the kinds and types of activities that require special quantities of serenity and quiet. Given its proximity to the metropolitan community of Ohio, and its national significance, clearly, the serenity and quite offered by the LMWSR serves an important public need.

<u>4.3. Cultural Resources</u>: Several properties listed on or eligible for listing on the National Register of Historic Places (NRHP) are identified in the PDEIS. Please indicate the NRHP is the Nation's official list of cultural resources worthy of preservation, and is administered by the NPS. Authorized under the National Historic Preservation Act of 1966, the NRHP is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect our historic and archeological resources. As such, the NHP was designed to be, and is, administered as a planning tool. Properties listed on or eligible for listing on the NRHP should be considered in project planning and design. Federal Agencies undertaking a project having an effect on properties listed or eligible for listing on the NRHP must provide the Advisory Council on Historic

Preservation and the appropriate State Historic Preservation Office (SHPO), a reasonable opportunity to comment. To ensure section 106 requirements are met, please consult with the SHPO and the Advisory Council on this matter.

If further investigation determines that properties listed or eligible for listing on the NRHP may be impacted by the project, a section 4(f) evaluation may need to be prepared, in addition to meeting section 106 requirements.

<u>Chapter 5, Organization</u>: This chapter organizes impacts by area, whereas the previous chapters are organized by modes of transportation, by construction segments within the Eastern Corridor, or by impact topic. The multiple organizational formats throughout the PDEIS makes it exceedingly difficult for the reviewer to clearly discern which alternatives best avoids/minimizes adverse environmental impacts. A matrix of impacts associated with each alternative would greatly facilitate the comparisons of alternatives. The impacts should flow logically from the issues and impact topics, and be carried consistently throughout the document. Additionally, the impacts associated with each alternatives to be compared and contrasted. Reasonable and appropriate scientific methods should be used to evaluate each environmental impact and the methods disclosed in this document.

The current organizational arrangement of section 4(f)/6(f) resources, and section 7, Wild and Scenic Rivers Act issues makes it particularly difficult to track impacts. Section 5.2 includes separate sub-sections which involve issues directly related to the LMWSR (visual impacts, noise, section 7, section 4(f)/6(f), and mitigation relative to the LMWSR). For continuity and simplicity in presenting potential impacts to this nationally significant resource, please discuss the LMWSR as a separate sub-section. The sub-section should be titled "Little Miami National Wild and Scenic River." This section should include all impact topics related to the values for which the river was established (ORVs). Likewise, all section 4(f)/6(f) concerns should be consolidated into a single section that addresses impacts to 4(f) and 6(f) resources (see chapters 5.2, 5.4 and 5.5).

<u>Chapter 5, Table 5,1</u>: Again, because of the national significance, resource sensitivity, and management goals of the LMWSR, this resource impact topic should be treated on an equal footing as other resources of national importance (NRHP properties, federally listed species, wetlands and floodplains), and should therefore be included as an individual Environmental Impact Category (EIC).

Within the cell titled "Noise Associated with Roadway Improvements" (page 5-6) the LMWSR should be considered a category A receptor. Noise impacts to the LMWSR should thus be evaluated accordingly (including direct and indirect impacts to both the natural environment and to the recreational experience).

Within the cell titled "Visually Sensitive Resources" (page 5-6), one of the Little Miami's ORVs to be preserved and enhanced is the rivers "natural and scenic quality and scientific resources." Thus, the LMWSR should be highlighted within this category and carried forward into table 5.6 and into the impact analysis for each alternative.

5.2.2, Key Environmental Issues and Impacts for Area #2, Little Miami River: The sentence "Recreational Component of the National River system" is incorrect. Please change to "Little Miami River is a federally designated component of the National Wild and Scenic Rivers System, per the Wild and Scenic Rivers Act. Pursuant to the Act, the following values are to be protected and enhanced: free-flowing condition, water quality, aesthetic/scenic, recreational, biological (flora/fauna) geologic, historical, cultural, archeological and otherwise scientific features. This segment of the LMWSR is classified as 'recreational', which is an indication of the degree and kinds of development occurring in the corridor at the time of designation." Impacts to important resources of the Little Miami River (water quality, free-flowing condition and each ORV) should be discussed and presented in terms of direct, indirect, and cumulative impacts. Each of these impacts should also be described in terms of context, intensity, and duration.

5.2.2, Little Miami River, Water Quality Impacts: Indirect (short and long-term) and cumulative impacts should be presented in this section.

5.2.2, Little Miami River, Visual Resources: This section describes the visual impact to the views from the river and bottomland/park areas, stating simply that "Views....will be permanently modified by placement of a roadway/transit corridor on a new alignment where no facility currently exists." Please define "modified" and the methods and thresholds used to determining impact intensity. We believe a more rigorous and quantitative analysis than this short evaluation provides is required. The visual impact should be discussed in context of the LMWSR's Federal designation and the river's scenic values (a protected ORV). Therefore, please describe the visual impact in terms of context, and intensity, for both the short-term (in the event a temporary in-stream crossing structure is needed during bridge construction) and long-term (permanent structure). Cumulative impacts should be evaluated as well. While we understand the proposed bridge specifications have not been developed, a visual simulation of the proposed bridge crossings is requested. Please insert an upstream, downstream, and aerial visual simulation of the proposed clear span corridor transit crossing. For simplicity, we suggest visual impacts to the LMWSR be discussed as a stand alone topic, within separate chapters relative to section 4(f)/6(f) and section 7 (see comments below).

<u>5.2.2. Area #2. Section 4(f). Section 6(f) and Section 7 Issues</u>: The information presented here should be developed as an independent section for each topic: section 4(f) of the Department of Transportation Act (DOT Act), section 6(f) of the Land and Water Conservation Act, and section 7 of the Wild and Scenic River Act.

Section 5.2 indicates avoidance and minimization of impacts to section 4(f)/6(f) resources occurred, and will be further evaluated in tier II. Because all decisions and impacts in tier II will flow from those presented in tier I, the PDEIS should clearly demonstrate how both proviso's of the DOT Act were met in tier I. The PDEIS does not do this. All avoidance efforts, measures to minimize harm, and constructive use impacts associated with section 4(f)/6(f) resources should be addressed. A preliminary section 7(a)

determination of effects should be included in the document. The NPS is responsible for preparation of a preliminary and final section 7 determination.

5.2.2, Preliminary Mitigation Measures Under Consideration for the Little Miami River: A discussion of the predicted direct, indirect and cumulative impacts associated with the mitigation measures should be presented in order to understand the relative merits of the proposed mitigation.

5.6. Consequences of the No Build Alternative: This section provides less than a full page of impact analysis, and lacks quantitative description of the impacts. An equal treatment between alternatives is expected from a NEPA document, and the discussion should track/flow from the baseline conditions presented and issues/impact topics developed. In addition to the no build alternative, comparison and contrasting of impacts associated with the preferred and other action alternatives considered be discussed.

SECTION 4(f)/SECTION 6(f):

Section 4(f): Please coordinate with the SHPO. The final section 4(f) documentation submitted for the Department's concurrence should demonstrate the SHPO, and if necessary, the Advisory Council for Historic Preservation concur with the findings, including proposed measures to minimize harm to the properties listed on or eligible for the NRHP.

The section 4(f) evaluation does not provide any discussion of potential proximity impacts, such as increased noise and visual intrusion associated with project alternatives on areas determined to be section 4(f) resources. Proximity impacts can constitute a "constructive use" of section 4(f) resources and, therefore, should be evaluated. Additionally, chapter 5.10 of the PDEIS indicates highway noise impacts to sensitive receptors (parks and recreation areas) will be addressed in the noise analysis but fails to specifically mention other 4(f) resources. The section 4(f) evaluation should discuss these potential impacts and possible measures to lesson any such impacts.

Section 6(f): The proposed Eastern Corridor project could have impacts to sites funded by the Land and Water Conservation Fund (L&WCF). Section 6(f)(3) of the L&WCF Act (Public Law 88-578, as amended) states: "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if she finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as she deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location."

Our findings show that L&WCF assistance was provided to several sites within or near the proposed project corridor. These sites include, but are not limited to, the following L&WCF projects:

Hamilton County:

Project No.	Project Name	Project Sponsor
39-00037	Newton Village Park	Village of Newton
39-00104	North Fairmount Park	City of Cincinnati
39-00118	Cincinnati Boating Developments	City of Cincinnati
39-00140	Yale and Kemper Park	City of Cincinnati
39-00153	Central Riverfront Park, Phase II	City-of-Cincinnati
39-00228	Little Miami Scenic River	Dept. Natural Resources
39-00278	Riverfront Park Phase 3	City of Cincinnati
39-00285	Little Miami Access	Dept. Natural Resources
39-00301	Riverfront Park Phase 4	City of Cincinnati
39-00361	Little Miami Scenic River Park	City of Cincinnati
39-00561	Glenway Woods	City of Cincinnati
39-00808	Cincinnati Zoo	City of Cincinnati
39-00932	Debolts Playfield	-
39-00990	Eden Park Waterfront	Village of Newton City of Cincinnati

Clermont County:

Project No.	Name	Project Sponsor
39-01136	Union Township Park	Township of Union

Please consult with the official who administers the L&WCF program in Ohio to determine any impacts of the proposed project to any of these sites. That official is Mr. Samuel W. Speck, Director, Ohio Department of Natural Resources, 1952 Belcher Drive, Building D-1, Columbus, Ohio 43224-1387.

Several Urban Park and Recreation Recovery (UPARR) program-funded sites have been awarded to the city of Cincinnati. Under section 1010 of the UPARR Act, sites and facilities improved with UPARR assistance may not be converted to uses other than public recreation without approval of the Secretary. Conversions can be approved if substitute sites or facilities of reasonably equivalent location and usefulness are provided and the recipient has explored all practical alternatives.

Please consult with Mr. Willie Carden, Director, Cincinnati Park Board, 950 Eden Park Drive, Cincinnati, Ohio 45202, to determine if the proposed project could have an impact to any of the following sites:

City of Cincinnati:

Project No.	Project Name
39CTY16107901	Rehabilitation of Four Pools and Shelters
39CTY16108001	Rehabilitation of Four Pools
39CTY16108002	Rehabilitation of Washington Park
39CTY16108101	Rehabilitation of Four Cincinnati & Playground
39CTY16109101	Lincoln Center Outdoor Area Rehabilitation
39CTY16109401	Inwood Park Rehabilitation
39CTY16100001	Hanna Playground Rehabilitation

39CTY16100002 Hopkins Park Rehabilitation

PRELIMINARY SECTION 7 DETERMINATION, WILD AND SCENIC RIVERS ACT:

All Federal permits for "water resources projects" on the LMWSR or tributaries to the LMWSR will require the NPS, on behalf of the Secretary, to prepare a section 7 determination per the requirements of the Act. Construction activities occurring within the bed and/or bank of the river meet the definition of a water resources project. Water resource projects that are determined to have a direct and adverse effect to any of the values for which the Little Miami River was designated are expressly prohibited. As such, please be advised it is our preliminary section 7 determination that construction of an additional multi-lane highway bridge meeting the definition of a water resources project and crossing the Little Miami River would likely have a direct and adverse effect on the outstandingly remarkable scenic and recreational values of the river.

Upon request, and if necessary, the NPS will provide a preliminary section 7 document for inclusion in the DEIS and FEIS assuming all necessary information is provided. Once the project specifications are finalized and section 404 permits are applied for through the U.S. Army Corps of Engineers, the NPS will prepare a final section 7 determination for all water resource development projects as described in the permit application(s).

<u>Section 6.2.1, Agency Comments, Table 6.1</u>: This table provides a summary of comments by agency. Please move the NPS summary comments contained on page 6-12 to page 6-10 so all NPS comments are presented together in chronological order by agency. Please include all NPS correspondences in this summary (including NPS letters submitted on November 8, 2002, and August 26, 1997, here and in appendix C).

<u>Section 8.3.1, Summary of Expected Environmental Mitigation and Permit</u> <u>Requirements</u>: The list of bulleted items on page 8-8 should include section 106 compliance separate from the section 4(f) evaluation since the standards and thresholds used under each applicable law are different.

Section 8.3.2, Preliminary Environmental Mitigation Strategy: A discussion of efforts to avoid impacts to the LMWSR should be included in the second paragraph and associated footnote.

<u>Table 8.3 Summary of Preliminary Environmental Commitments for further</u> <u>Development in Part B: Please change "Part B" to Tier II</u>. This table should include preliminary environmental commitments that resulted from preliminary/final section 7 and/or section 4(f)/6(f) consultations with the NPS during tier I planning. Related to this, all feasible and acceptable mitigation strategies should be documented. <u>Appendix D List of Preparers and Reviewers</u>: The NPS, as a Cooperating Agency with jurisdictional responsibilities for preparation of the preliminary and final section 7 determination and section 4(f)/6(f) review, should be listed.

<u>Appendix E Distribution List</u>: Federal Agencies: The U.S Fish and Wildlife Service should be included along with the NPS, under the Department of the Interior.

SUMMARY COMMENTS:

The Little Miami River is a State-administered component of the National Wild and Scenic Rivers System. The purpose for designating the Little Miami River was to preserve its free-flowing character; water quality; and outstanding scenic, recreational, and/or biologic, geologic and historic values. As such, we are requesting that all feasible avoidance alternatives, including option 2 are fully evaluated. Inclusion of avoidance alternatives would allow a comparison and contrasting of each action alternative with respect to quantifiable environmental impacts, relative to the alternatives ability to meet all, or portions of, the stated purpose and need of the project. The analysis of all action alternatives should fully consider the national significance of the LMWSR, the purpose of the rivers Federal and State designations, including the preservation of scenic and recreational values, and past commitments to protect and enhance the LMWSR. This course of action will lead ultimately to a sound and informed decision. The document should include an assessment of impacts (direct, indirect, and cumulative) to the LMWSR. Impacts should be discussed in terms of timing, duration, and intensity (magnitude) and supported by quantitative data.

The Little Miami is protected under section 7(a) of the Act, which states that:

"no department or agency of the United States shall assist by loan, grant, license or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration."

Should the construction of a bridge and/or associated storm water outfalls require either a section 404 or section 10 permit, an evaluation under section 7(a) of the Act will be required. It is our preliminary determination, pursuant to section 7(a) of the Act, that an additional bridge constructed with piers and/or abutments in the bed or banks of the Little Miami River would have a direct and adverse effect on the values for which the river was established. Therefore, the ACOE can not issue section 404/10 permits associated with any bridge component that include piers, abutments or other bridge structures located within the bed/banks of the Little Miami WSR.

A separate chapter that addresses section 4(f)/6(f) resources should also be provided. If section 4(f) resources are used/impacted, the DEIS tier I document must contain a section 4(f)/6(f) evaluation. This evaluation must demonstrate there are no prudent and feasible alternatives to the use of section 4(f) resources, and that all possible planning to minimize

harm to 4(f) resource has taken place. As a preliminary 4(f) evaluation, the NPS does not concur that there are no prudent and feasible alternatives to additional uses of the LMWSR. Absent a discussion of alternatives for use of other section 4(f) resources, we are, likewise, not able to concur with the both proviso's of the Department of Transportation Act regarding use of section 4(f) resources. The SHPO, and Advisory Council if necessary, should be involved in discussions involving impacts and/or mitigation, to properties listed on, or eligible for listing on the NRHP. Please consult with Mr. Samuel W. Speck, Director, Ohio Department of Natural Resources regarding impacts to sites funded through the L&WCF program, and with Mr. Willie Carden, Director, Cincinnati Park Board to determine if UPARR program-funded sites are impacted.

These comments have been provided as early technical assistance and do not necessarily indicate the NPS's or the Department's responses to future environmental documents prepared in association with the project.

The NPS has a continuing interest in working with the Federal Highway Administration to ensure that project impacts to resources of concern to the NPS are adequately addressed. Ms. Sue Jennings, of my staff, is available for assistance. Please contact Sue at 402-221-3493. For matters involving section 6(f) concerns (L&WCF and UPARR programs), please contact Marilyn Gillen at 402-221-3493. (Please note: After June 18, Ms. Jennings may be reached at 402-661-1848, and Ms. Gillen at 402-661-1550).

Sincerely,

David N Gron

6 Ernest Quintana **Regional Director**

Enclosures

cc:

Mr. Mark L. Vonder Embse Urban Planning Engineer Federal Highway Administration 200 North High Street, Room 328 Columbus, Ohio 43215

Mr. Jerry Ballard, Assistant Regional Scenic River Manager Division of Natural Areas & Preserves Ohio Department of Natural Resources 5349 Wilmington Road Oregonia, Ohio 45504-9704

Mr. Bob Gable, Scenic River Services Group Division of Natural Areas & Preserves Ohio Department of Natural Resources 1889 Fountain Square Ct, Bldg. F-1 Columbus, Ohio 43224

Mr. Don Kathan/ Ms. Anna Miller U.S. Environmental Protection Agency, Region 5 77 West Jackson Boulevard Chicago, Illinois 60604-3507

Dr. Mary Knapp U.S. Fish and Wildlife Service Ecological Services 6950 Americana Parkway, Suite H Renoldsburg, Ohio 43068-4127

Mr. Samuel W. Speck, Director, Ohio Department of Natural Resources 1952 Belcher Drive, Building D-1 Columbus, Ohio 43224-1387.

Osborne, Deborah

From: Sent: To: Subject: Wharton, Steve Wednesday, June 16, 2004 11:29 AM Osborne, Deborah; Record, Rick FW: Coast Guard jurisdiction on the Eastern corridor multi-modal projects

----Original Message----From: Wharton, Steve Sent: Wednesday, June 16, 2004 11:27 AM To: 'MKrause@cgstl.uscg.mil' Subject: RE: Coast Guard jurisdiction on the Eastern corridor multi-modal projects

Thanks...and enjoy your remaining duty in STL.

Regards, Steve Wharton Eastern Corridor Project Team

----Original Message----From: MKrause@cgstl.uscg.mil [mailto:MKrause@cgstl.uscg.mil] Sent: Wednesday, June 16, 2004 11:12 AM To: Wharton, Steve Subject: Coast Guard jurisdiction on the Eastern corridor multi-modal projects

Good Morning Steve; Based on the information that is currently available I am recommeding to the Bridge Branch chief that the Coast Guard will not require a bridge permit for the clearspan, railway, higway and bike path bridge that you have planned across the Little Miami Rive between river mile 4.6 and 6.7. I am sending this message as a follow up to a telephone message that I left this morning. This office will return your documents to you with a letter confirming that we will not require a Coast guard Bridge Permit for this project. It is not our policy to send a letter to ODOT or any other agency unless we are contacted by them about the matter first. Thanks for your prompt response to this issue. Goo dluck on your project. If you have any more questions about this please feel free to contact me via e-mail or by calling me at 314-539-3900x2384 LCDR Doug Krause

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If enclosures are not as noted, kindly notify us at once.



United States Department of the Interior **RECEIVED**

FISH AND WILDLIFE SERVICE

Ecological Services 6950 Americana Parkway, Suite H Reynoldsburg, Ohio 43068-4127 (614) 469-6923/FAX (614) 469-6919 June 18, 2004

JUL 0 6 2004

OFFICE OF ENVIRONMENTAL SERVICES

Timothy M. Hill Office of Environmental Services Ohio Department of Transportation P.O. Box 899 Columbus, OH 43216-0899

Dear Mr. Hill:

This is in response to your March 19, 2004 letter requesting our review and comments on the Tier I preliminary Draft Environmental Impact Statement (PDEIS) for Eastern Corridor Multi-Modal Projects, Hamilton and Clermont Counties, Ohio, PID 22970.

We have reviewed pertinent portions of the above document and offer the following comments. A biologist from this office attended meetings on October 7, 2002 and October 14, 2003, regarding the Eastern Corridor project during the past couple years. We were unable to attend one additional meeting. Prior to the first meeting, we were not aware of this project. We believe earlier coordination on projects of this magnitude is critically important and would appreciate an invitation to participate during the initial planning of transportation projects.

We have had the opportunity to review comments on the above project from Ohio DNR (e-mail from Randy Sanders, dated May 11, 2004), Ohio EPA (letter from Arthur Coleman, dated May 4, 2004), and the National Park Service (NPS) (letter from Ernie Quintana, dated May 27, 2004). NPS made a thorough review of the PDEIS and provided 18 pages of comments. Many of NPS' comments pertained to the organization of the PDEIS and procedural aspects of the Statement. In addition, NPS provided ample comments regarding the proposal in the PDEIS to construct a new bridge over the Little Miami River, a State and National Scenic and Recreational River. The NPS continues to recommend alternatives to the construction of another crossing over this specially designated river.

Ohio EPA's letter expressed concerns with the project's direct and indirect impacts to the Little Miami River, its East Fork, and riparian corridors for both streams. These impacts pertain primarily to increased erosion rates and volumes of runoff and sedimentation due to project

construction, associated development, and the significant increase of impervious surfaces in the watershed. We share Ohio EPA's and NPS' position of recommending improvements or expansion of existing bridges across the Little Miami River rather than constructing a new one.

Also, mentioned in Ohio EPA's comments was the Lower East Fork Watershed Management Plan (2003) which includes a goal of protecting 25 percent of the lower riparian corridor through land purchase or conservation easement. We support that goal and also recommend that partial compensatory mitigation, due to the Eastern Corridor project, focus on restoring and/or preserving native vegetation in the floodplains of both the East Fork and the mainstem of the Little Miami River. Another mitigation concept which we support is "stream daylighting", a process by which buried streams (culverted or piped) in the project vicinity are brought to the surface and restored, using natural stream restoration techniques.

Many of the NPS's comments pertain to a desire to have the Ohio DOT place greater emphasis on the "outstandingly remarkable values" (ORV) of the Little Miami River that made it eligible for inclusion in the National Wild and Scenic River System (NWSRS). Some of our biologists were in Ohio several decades ago and remember the tremendous work of the resource agencies and the local community to have their river recognized for its values and requested that it be placed in the NWSRS. The emphasis on the fish and wildlife resource values and the local communities' efforts to preserve those ORVs should not be lost during the planning of multimodal transportation improvements.

In addition to many natural and cultural amenities that are required for inclusion in the NWSRS, the Little Miami River and its ripatian corridor provide habitats for a diverse fauna, including many species of birds, mammals, reptiles, and amphibians. In addition, it has a high quality, diverse, warm-water fishery resource. This resource includes sport fish and its supporting forage and omnivorous fish species. This guild of fishes depends on a productive macroinvertebrate community that feeds on the stream's algae and zooplankton. Most of the macroinvertebrates is a component of the benthic community. Another component of the benthos is freshwater mussels, our most imperiled fauna. The mussel fauna in the Little Miami River includes many State listed species and several Federally listed species, as indicated below. We concur with the NPS that greater emphasis be placed on this animal group in subsequent documents. For additional information regarding the aquatic resources in the Little Miami River watershed, consult with Ohio EPA's *Biological and Water Quality Study of the Little Miami River Basin, 1998* (www.epa.state.oh.us/dsw/documents/LMR_Tsd.pdf).

Ohio DNR provided information on listed plants and animals in the project vicinity from the Heritage Database. In summary, the Ohio DNR lists the following with <u>State status</u> in the Little Miami River and East Fork Little Miami River:

- five endangered fish species,
- two endangered mussel species,
- four threatened mussel species,
- one potentially threatened plant species,
- three fish species of concern,
- four mussel species of concern,

- one turtle species of concern, and
- one bird species of concern.

Our comments addressing species with Federal status follow below. Mr. Sanders indicated that additional comments on the project may be provided as the project develops.

Updated Federally listed and Candidate Species Comments:

The proposed project lies within the range of the Indiana bat (Myotis sodalis), a Federally-listed endangered species. Summer habitat requirements for the species are not well defined but the following are thought to be of importance:

1. Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.

2. Live trees (such as shagbark hickory) which have exfoliating bark.

3. Stream corridors, riparian areas, and upland woodlots which provide forage sites.

Should the proposed site contain trees exhibiting any of the characteristics listed above, we recommend that they and surrounding trees be saved wherever possible. If they must be cut, they should not be cut between April 15 and September 15. It should be noted that we are concerned with the anticipated loss of forest habitat due to the above project.

If desirable trees are present and if the above time restriction is unacceptable, mist net or other surveys should be conducted to determine if bats are present. The survey should be designed and conducted in coordination with the endangered species coordinator for this office. The survey should be conducted in June or July since the bats would only be expected in the project area from approximately April 15 to September 15.

Depending on the amount of potential Indiana bat roosting habitat that would be impacted by this project, we may request mist net or other surveys to document the possible use of trees by this endangered species. Therefore, we recommend your continued coordination with us regarding the amount of unavoidable impacts to Indiana bat habitat.

Also, the proposed project lies within the range of the running buffalo clover (*Trifolium* stoloniferum), a Federally listed endangered species. This species can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance. If suitable habitat is present, we recommend that surveys for this species be conducted by a trained botanist in May or June when the plant is in flower.

The project area in Hamilton County lies within the range of the **bald eagle** (*Haliaeetus leucocephalus*), a Federally-listed threatened species. We recommend that you contact Mr. Mark Shieldcastle, with the Ohio Department of Natural Resources, Division of Wildlife, (419) 898-0960, for the location(s) of the eagle nest(s) in the county. If any nests are located within ½ mile of the project site, further coordination with this office is necessary. If the nest is active, we recommend that work at the site be restricted from mid-January through July to allow pre-nesting activities, incubation, and raising of the young.

Finally, the proposed project lies within the range of the **rayed bean mussel** (*Villosa fabalis*) and the **sheepnose mussel** (*Plethobasus cyphyus*), both Federal candidate species. The rayed bean inhabits streams and small rivers with clean, coarse sand and gravel runs, often downstream of a riffle. It should be considered potentially present anywhere in the drainage where preferred habitat is found. We recommend that the Little Miami River and its East Fork be surveyed for this and all native mussels prior to initiation of the project. If a Federally listed or candidate species is found, further consultation must be done with this office. Due to the project location, the project, as proposed, will have no effect on sheepnose mussel, provided best construction practices are implemented to minimize erosion. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended.

Should additional information on listed or proposed species or their Critical Habitat becomes available, or if new information reveals effects of the action that were not previously considered, this determination may be reconsidered. If project plans change, or if portions of the proposed project were not evaluated, we would recommend that you contact our office for further review.

U.S. Fish and Wildlife Service Recommendations for the Eastern Corridor Multi-Modal Projects

- 1. We recommend that Ohio DOT minimize impacts to fish and wildlife resources, in particular, those associated with the National and State Scenic and Recreational Little Miami River, while analying its pursuit to reduce transportation congestion.
- 2. We recommend that all projects associated with the Eastern Corridor Multi-Modal Projects minimize water quality impacts by fully implementing best construction and management practices.
- 3. We recommend that Ohio DOT, after maximizing its avoidance of impacts to natural resources, identify areas along the stream corridor or floodplain that needs protection (preservation) or restoration. These efforts should not be limited to that which is required by Sections 401 and 404 of the Clean Water Act, but should be maximized to give full recognition to this National and State natural resource treasure.
- 4. We request that you fully coordinate with this office on all future plans which have a bearing on fish and wildlife resources, for this project including mitigation planning efforts.

5. If a river crossing cannot be avoided, we recommend that it be designed to avoid impacting the stream and its floodplain, if possible.

In conclusion, we concur with and support comments made by the NPS and Ohio EPA, sited above, on the PDEIS for the Eastern Corridor Multi-Modal Projects. Unavoidable impacts to fish and wildlife resources should be mitigated in the project vicinity, so as to improve the longterm environment of the lower Little Miami River watershed. Indirect impacts, such as increased impervious surfaces in the project area, should be addressed and conclude with recommendations to reduce indirect impacts

This technical assistance letter is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act, of 1973, as amended, and is consistent with the intent of the National Environmental Policy Act of 1969, and the U.S. Fish and Wildlife Service's Mitigation Policy.

If you have questions, or if we may be of further assistance in this matter, please contact Ken Lammers at extension 15 in this office.

Sincerely,

MaryKmapp

Mary M. Knapp, Ph.D. Supervisor

cc:

ODNR, Div. of Wildlife, SCEA Unit, Columbus, OH ODNR, Div. of Real Estate and Land Management, Columbus, OH OEPA, 401/Wetland Section, Columbus, OH US EPA, Office of Environmental Review, Chicago, IL National Park Service, Attn: Sue Jennings, Omaha, NB



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

APPENDIX D LIST OF PREPARERS



APPENDIX D LIST OF PREPARERS AND REVIEWERS

Federal Highway Administration

Mark Vonder Embse, P.E.	Senior Transportation Engineer
David Snyder	Environmental Program Manager
Victoria Peters	Director of Engineering and Operations

Ohio Department of Transportation (ODOT), Office of Environmental Services

Timothy M. Hill	Administrator
Larry Hoffman	Major Project Coordinator
Andrea Stevenson	Assistant Environmental Administrator, Environmental Policy
Paul Graham	Assistant Environmental Administrator, Cultural Resources
William R. Cody	Assistant Environmental Administrator, Ecological
Adam Alexander	Noise and Air Quality
Elvin Pinckney	Noise and Air Quality
Susan Wyant	Public Involvement/Environmental Justice
Julie Denniss	ESA Coordinator
Stanley Baker	Archaeological Resources
Susan Gasbarro	History/Architecture Resources
Don Rostofer	Ecological Permits
Fred Steck	Document Review

Ohio Department of Transportation, District 8

Michael Flynn, P.E., P.S.	District Engineer
Diana Martin, C.P.A	Planning Administrator
Keith Smith, P.E.	Planning and Environmental Engineer

Hamilton County Transportation Improvement District / Hamilton County Engineer's Office

Ted Hubbard, P.E., P.S.	Eastern Corridor HCTID Project Manager,
	Hamilton County Chief Deputy Engineer

Balke American – PE/EIS Lead Consultant

Richard L. Record	Consultant Project Manager
Steve Wharton	Deputy Project Manager
Craig Kowalski	Environmental Department Manager
Ken J. Wesp	Transportation Engineer Manager
Deborah M. Osborne	Senior Environmental Scientist, Principal Author
Pallab Ghosh Choudhuri	Environmental Planner, GIS Mapping
Jesse A. Binau	Senior Environmental Scientist, Mapping and Graphics
W. Christopher Young	Environmental Scientist, Ecological Studies



Michael D. deVilliers Simon J. Binau Valerie Robbins Steven N. Shadix, P.E. J. Greg Brown Charles Schimpeler, P.E.	Environmental Scientist, Ecological Studies Environmental Analyst, Noise Studies Environmental Planner, Section 4(f) Evaluation Project Engineer Design Engineer Urban Transit Planner, Oasis Riverfront Rail Transit Study		
Burgess & Niple, Limited – Rail F	reight		
Richard S. Butch, P.E.	Project Manager		
Gray & Pape, Incorporated – Cul	tural Resources		
Kevin Pape	President and Project Manager		
H.C. Nutting Company – Geotec	hnical and Environmental Site Assessment		
George Webb, P.E., P.G. Terry Stransky, P.G. Bradley K. Johnson	Vice President of Engineering Principal Geologist Environmental Scientist		
HSR Business to Business – Public Involvement and Communications			
Andi Johnson Megan Licursi	Public Relations Project Manager Public Relations Consultant		
Kimley-Horn and Associates – B	us Transit		
Leyla Hedayat Herman Basmaciyan, P.E.	Project Manager and Transportation Engineer Transportation Engineer		
Meisner and Associates – Land Use and Aesthetic Design			
Gary W. Meisner, FASLA	Partner and Project Manager		
Resource International – Cost Estimating			
Joseph C. Cron, P.E.	Operations Manager		
<u> URS Corporation – Rail Transit a</u>	and Transportation System Management (TSM)		
Jon Cox Dave Wormald	Vice President Senior Project Manager		
<u>Wilbur Smith Associates – Trave</u>	I Forecasting		
Anne Reyner	Senior Transportation Analyst		



Woolpert LLP – GIS and Highway

Paul Gruner, P.E.
Greg Gohrband

Project Director GIS Contact

The following agencies were provided opportunity to review and comment on the Eastern Corridor Tier 1 Preliminary Draft Environmental Impact Statement:

Ohio Department of Natural Resources

Ohio Environmental Protection Agency

U.S. Army Corps of Engineers, Louisville District

U.S. Coast Guard, Eighth District

U.S. Department of the Interior, Fish and Wildlife Service

U.S. Department of the Interior, National Park Service

U.S. Environmental Protection Agency, Region V



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

APPENDIX E DISTRIBUTION LIST



APPENDIX E DISTRIBUTION LIST

The Eastern Corridor Tier 1 Draft Environmental Impact Statement is being distributed to the following agencies for opportunity to review:

Federal Agencies

U.S. Department of the Interior Fish and Wildlife Service

- U.S. Department of the Interior National Park Service
- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers
- U.S. Coast Guard

Federal Transit Authority

State Agencies

Ohio Department of Natural Resources Ohio Environmental Protection Agency Ohio Historic Preservation Office

Eastern Corridor Implementation Group

Ohio-Kentucky-Indiana Regional Council of Governments Clermont County Hamilton County City of Cincinnati SORTA/Metro

Copies of the Eastern Corridor Tier 1 Draft Environmental Impact Statement are on file at the following locations for public viewing:

Municipalities

Cincinnati City Hall Hamilton County Commissioner's Office Hamilton County Engineer's Office Clermont County Engineer's Office Village of Newtown Village of Newtown Village of Fairfax Village of Mariemont Anderson Township Union Township City of Milford



Libraries

Hamilton County Public Libraries: Main Branch (downtown Cincinniti) Anderson Branch Hyde Park Branch Madisonville Branch Mariemont Branch Oakley Branch

Clermont County Public Libraries: Milford-Miami Branch Union Township Branch



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

APPENDIX F EASTERN CORRIDOR TSM FRAMEWORK

Projects	Type of Improvement
Note: Bold indicates project is included in the Eastern	
Corridor TSM Core List (see Chapter 3.4.1	
METRO	
Increase Bus Frequency Along US 50 Increase Bus Frequency Along SR 125	Bus Service Bus Service
I-275 at SR 125	Park-n-Ride
US 50 and Newtown Road	Park-n-Ride
Near I-275 and US-52	Park-n-Ride
Anderson Town Center	Park-n-Ride
Union Township Community Center	Park-n-Ride
HAMILTON COUNTY	
Signal Timing and Coordination along SR 125	Signal System Upgrade
Signal Timing and Coordination along SR 32	Signal System Upgrade
Five Mile Road at SR 125	Intersection/Signal
Forest Road at SR 125	Intersection/Signal
Corbly/Sutton at SR 125 Clough Pike at SR 32	Intersection/Signal Intersection/Signal
Nagel at State	Intersection Improvements
Nagel at Beechmont	Intersection Improvements
Asbury and Beechmont	Intersection/Signal
Clough Pike and Wolfangle	Intersection/Signal
Safety US 50 between Walton Creek and Newtown Rd.	Adding fifth lane/intersection
Construct a hike/bike bridge over the Little Miami River.	Bike Trail
Eight-Mile Rd from SR 32 south to the top of the Hill	Roadway improvements
Clough Pike from Wolfangle Road to SR 32	Roadway Improvements
Newtown Road from Clough Pike to Ragland Drive	Roadway Improvements
Ragland Road and Turpin Lane Upgrade	Roadway
CLERMONT COUNTY	New Deedway
Clough Pike Relocation Beechwood Road Extension	New Roadway New Roadway
Mt. Carmel and Beechwood	Intersection and Signal
Glen Este - Withamsville at Aicholtz	Roadway and Intersection
Elick Lane at SR32	Turn Lane Addition
Clough at McMann Intersection	Intersection and Signal
Clough at Shayler Intersection	Intersection and Signal
Old SR 74 Schoolhouse Road to SR 32	Roadway improvements
Aicholtz Road Improvements	Roadway improvements
Amelia-Olive Branch at SR 125	Intersection Improvement
Glen Este-Withamsville at SR 125 White Oak at SR 125 (Lewis)	Intersection and Signal
Beechwood Safety Upgrade	Intersection and Signal Safety Upgrade
Mt. Carmel-Tobasco Widening - Phase I	Roadway Improvements
Mt. Carmel-Tobasco Widening - Phase II	Roadway Improvements
Old SR 74 Summerside to Gleneste-Withamsville	Roadway improvements
Clough Pike Improvements	Turn Lane and Sidewalks
Coordination of traffic signals on SR 32	
McMinn at SR 125	Intersection improvement
Nine Mile Road at SR 125	Intersection/Signal
Old SR 74 and SR 32	Intersection/Signal
Clough Pike at Mt. Carmel Tobasco Road	Intersection/Signal
Wolfpen Pleasant Hill to SR 131 OKI	Roadway improvements
ARTIMIS Expansion I-275 from US-52 to SR-28	ITS Deployment
Entrance Ramp Metering along I-275 from US 52 to SR 28.	Ramp Metering
Little Miami Scenic Trail from Milford to Avoca Park	Bike Path
Little Miami Scenic Trail - North Loop	Bike Path
Ohio River Bike Trial Lunken to New Richmonc	Bike Path
CITY OF CINCINNATI	
US 52 Reconstruct Eggleston to Rookwood RR Overpass (east	Geometric, safety Improvements
of downtown)	
Delta at Eastern & Kellogg Intersection,	Intersection Improvements
replace RR bridge Columbia Parkway @ Delta / Tusculum / Stanley	Roadway / Intersection Improvements
Kellogg Ave from Delta to Congress	Roadway Improvements
Wilmer	Roadway Improvements
Wooster Pike	Roadway Improvements
Wilmer / Wooster Beechmont Interchange	Interchange / Access Improvements

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Appendix F - Revised TSM Framework.xls

Projects	Type of Improvement
Ohio River Trail	Feasibility Study
Five Mile Rd. Shared Use Trail	Multi-use Trail
VILLAGE OF TERRACE PARK	Oliveral Universida
Signal Safety Upgrade at Wooster Pike (US 50) Crosswalk Safety Upgrade at Wooster Pike & Western Avenue	Signal Upgrade Crosswalk
Wooster Pike (US 50)	Corridor Improvement / Bike Path
VILLAGE OF NEWTOWN	
Church Street - Phase II	Drainage, Curb, Pav't
Valley Drive Improvements	Drainage, Curb, Pav't, Turn Lanes
SR 32 / Round Bottom Rd Improvements Valley Drive at Church Street & at Round Bottom Rd	Drainage, Curb, Pav't, Twin Lanes Signals New Traffic Signals
Round Bottom Rd Drainage	Storm Drainage
Bikeway, SR 32, Round Bottom Rd	Bike Path
SR 32 (Round Bottom Rd to West Corp. Line)	Curb, Milling, Paving
Traffic Signal Coordination	Traffic Signal Timing
Little Dry Run Road, 1999	Slide Repair & Drainage / Roadway Upgrade
Church Street - Phase I, 2001	Waterline, Drainage
Ivy Hills Place & SR 32 Traffic Signal, 1998 VILLAGE OF FAIRFAX	Traffic Signal, Turn Lane
US 50 Wooster Pike	Corridor Improvement
Redbank Rd. Improvements Phase I	
US-50 to Fairlane	Roadway Imp.
Redbank Rd. Improvements Phase II	Roadway Imp.
Fairlane to Brotherton	
Murray Rd. Hike Bike Trail Fairfax Village Center Development	Multi-use Path Road/Ped Imp.
VILLAGE OF BATAVIA	Kodu/reu imp.
Main Street at SR 222 & at SR132	Turn Signals
Bridge Improvement Haskel Lane & SR 132	Bridge / Intersection
Clough Pike	Roadway Improvement
PIERCE TOWNSHIP	
Nine Mile Rd & Davis Road	Intersection Improvement
Nine Mile Rd & Bradbury Road	Intersection Improvement
Bennett Rd from SR 125 to Gaskin Rd MIAMI TOWNSHIP	Roadway Improvement
Branch Hill Guinea at Loveland Miamiville Rd	Intersection Improvement
Branch Hill Guinea at Wards Corner Rd	Intersection Improvement
Branch Hill Guinea at Cook Rd / Weber Rd	Intersection Improvement
SR 131 at Dry Run Road	Intersection Improvement
SR 28 from I-275 to Bypass 28	Corridor Improvement
UNION TOWNSHIP Old SR 74 & Rumpke Rd	Intersection Improvement
Barg Salt Run Rd	Road Improvement
Baldwin Rd	Road Improvement
Union Township Community Center Park and Ride	Park & Ride
Merwin Ten Mile Road to	
Ferris w/cul de sac at McMann	
CITY OF MILFORD	
USR 50-5 Points Intersection Improvements	Intersection/Signals
Lila (USR50) @ 131-Upgrade & Widening	Roadway / Signals
US 50 in Milford Milford Traffic Studies	Signals / Bridge Improving Traffic Flow
Beechwood Road Extension @ Roundbottom Rd.	Roadway improvement
VILLAGE OF AMELIA	
SR125 @ Oak St-Left Turn Lanes	Intersection / Signals
SR125 @ Cecelia Dr-Left Turn Lanes	Intersection / Signals
Lori Lane Turn Lane @ SR125	Intersection / Turn Lane
SR125 @ Cecelia/Huntsmans Trace	Intersection / Signals
Ohio Department of Transportation (ODOT) Jobs & Progress Pro	
Southwest Ohio Region- High Cost-Long Term Locations within SR 125- Amelia Corp. to SR 132	Eastern Corridor Study Area Add fifth lane through Amelia and widen lanes
SR 32- Newtown Corp. line	Aud mith and unough Ameria and Widen Idnes
	Add lanes
Southwest Ohio Region- Medium Cost-Medium Term Locations v	Add lanes vithin Eastern Corridor Study Area
Southwest Ohio Region- Medium Cost-Medium Term Locations	vithin Eastern Corridor Study Area

Projects	Type of Improvement	
SR 32- SR 132 to Batavia Rd.	Offset left turn lanes; add right turn lanes at Bauer.	
US 50- Wolpen- Pleasant Hill Rd.	Relocate Wolpen-Pleasant Hill Rd.	
SR 125- Hamilton Co. line to SR 222	Add turn lanes; improve drainage, alignment;	
	add lanes up to SR 222 Install left turn lanes at SR 132	
SR 131- I-275 to Dry Run Rd.	Turn lanes at Dry Run by school	
	Install turn lane; replace two culverts; modify alignment	
SR 132- Concord Rd. to Chapel Rd.	Widen lanes; relocate curve	
SR 132- North of Overlap with US 50	Relocate west of existing route	
US 22- Silverton Corp. line	Widen US 23/ SR 3 (Montgomery Rd.)	
US 50- Mariemont Corp. line to Terrace Park Corp. line	Widen	
SR 125- Cincinnati Corp. line to Clermont Co. Corp. line	Reduce curve through Salem intersection; widen inside Cincinnati;	
	Add right turn lane to Eight Mile	
	Install pavement detention loop system for signals	
Southwest Ohio Region- Low Cost-Short Term Locations within Eastern Corridor Study Area		
SR 28- US 50 to SR 132	Resurface; add signal, pavement markings, turn lanes; remove island at Wolfpen;	
5K 26- 05 50 10 5K 152	access management	
SR 32- Hamilton Co. line to Shayler Rd.	Remove median crossing at Roney Ln.; eliminate left turns; lose drive at Pier 1/	
	Penn Station	
SR 32- SR 132 to Batavia Rd.	Add rumble strips on shoulders; upgrade signs	
SR 125- Hamilton Co. line to Merwin Ten Mile Rd.	Remove School Crossing sign in front of Thomas More	
SR 125- Amelia Corp. line to SR 132	Upgrade signal	
I-275- Main St. to US 68	Continue existing traffic pattern at SR 32 interchange	
SR 125- Cincinnati Corp. line to Clermont Co. Corp. line	Coordinate signals; access management; add signal at new England Club	
Total Basic Framework Projects = 187		



Tier 1 Draft Environmental Impact Statement Eastern Corridor Multi-Modal Projects Hamilton and Clermont Counties, Ohio

APPENDIX G GLOSSARY OF TERMS



APPENDIX G GLOSSARY OF TERMS

Accessibility – The ability of people to reach desired destinations (such as employment, shopping, recreational facilities, medical facilities, cultural centers, airports, etc.). Accessible regions allow residents to reach many such destinations in a shorter period of time. Inaccessible regions allow residents to reach fewer destinations, and require longer periods of time.

Access Ohio – Ohio's long-range multi-modal transportation plan that includes a comprehensive study of the current condition of Ohio's transportation infrastructure, and outlines transportation projects for improving safety and increasing mobility on the state highway system. The draft Access Ohio 2004-2030 was released in June 2004, and is currently under public review.

Appalachian Development Highway System (ADHS) – The ADHS was established in 1965 by the Appalachian Development Act, and is a designated roadway system targeted at support of economic development and commerce for the multi-state Appalachian Region. SR 32 is part of the national ADHS network.

Aquatic Life Use Designations – OEPA designations for surface streams based on index thresholds of biocriteria. There are two indices of biocriteria, one based on stream fish (IBI) and the other based on stream macroinvertebrates (ICI). Waterbodies are assigned designations based on the biocriteria score in relation to the score of the reference site for a particular regional landscape.

Arterial – A functional classification for a facility primarily used for through traffic.

Cloverleaf Interchange – An interchange with loop ramps and outer ramps for directional movements, with ramps in every quadrant.

Collector-Distributor – A directional roadway adjacent to a freeway to reduce he number of conflicts (merging, diverging, weaving) on the main facility.

Conceptual Alternative – Conceptual alternatives were developed for each transportation mode (TSM, Expanded Bus, Rail Transit, and Highway) early in the Tier 1 work program based on Eastern Corridor MIS recommendations. These alternatives were used to identify the study area needed for detailed environmental field work to be conducted during Tier 1 and feasible alternatives development.

Congestion – Occurs when the number of vehicles using a route approaches the capacity of that route and results in delays caused by reduced travel speeds and stop-and-go traffic. Many routes in the Eastern Corridor have a limited capacity and since the routes are in close proximity to Cincinnati they are reaching or exceeding capacity, therefore causing congestion.

Controlled Access – Partial control of access; highway right-of-way where preference is given to through traffic. In addition to connections with selected public roads, there may be some private drive connections.



Core Study Area – Original, broad study area of the Eastern Corridor Tier 1 work phase (Figure 1.1) that encompassed a 165-mile portion of the Eastern Corridor MIS study area; this study area was the focus of early environmental inventory work.

Cumulative Impact – The Council on Environmental Quality (CEQ) Regulations defines cumulative impacts as "The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (CEQ Regulations). Therefore, these impacts include the compounding direct and indirect impacts of a project and the future actions of others.

Detailed Study Area – The approximately 14 square mile Eastern Corridor study area extending from the Cincinnati Central Business District and riverfront redevelopment area in Hamilton County, east to the I-275 outerbelt corridor in Clermont County. Occurring within the core study area (see above), the Eastern Corridor detailed study area was the focal area for the development of feasible alternatives and the Tier 1 environmental field studies, as presented in this Tier 1 DEIS.

Diamond Interchange – The simplest and most common type of interchange formed when oneway diagonal ramps are provided in each quadrant and left turns are provided on the minor highway.

Directional Interchange – An interchange generally having more than one grade separation, with direct connections for all movements.

Direct Impact – The Council on Environmental Quality (CEQ) Regulation defines direct impact as "effects which are caused by the action and occur at the same time and place" (CEQ Regulations). An example of a direct impact for this project is the destruction of stream bottom and aquatic habitat for the construction of culverts or bridge piers.

Diesel Multiple Unit (DMU) – Rail transit using diesel technology (therefore does not require overhead contact electrical system for power), typically consisting of two or three units; vehicles operational and geometric characteristics are similar to electrically-powered light rail, but not identical; the proposed technology for the Eastern Corridor Oasis rail alternative.

Existing + Committed (E + C) – The Tier 1 regional travel demand model (RDTM) run that evaluated the existing roadway and transit network, plus committed regional and state improvements (TIP and STIP projects). The E + C model run did not include regional rail corridor or any major new capacity improvements within the Eastern Corridor, highway or transit. This model run was used as the baseline for comparison of modal and multi-modal model results.

Eastern Corridor (EC) Geographic Area – Feasible modal alternatives developed for the Eastern Corridor project were grouped together by six geographic areas, generally corresponding to the focus areas and/or combinations of portions of the focus areas used in the Eastern Corridor Land Use Vision process.

Environmental Impact Statement (EIS) – A detailed written report mandated by the National Environmental Policy Act that provides full and fair discussion on significant environmental impacts, and informs decision-makers and the public of the reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. An EIS is the highest



level (and the most detailed) of documentation required for federal actions, as determined by potential impacts a project may have on the surrounding natural, cultural and social environment.

Environmental Justice – Efforts to avoid disproportionately high and adverse impacts on minority and low-income populations with respect to human health and the environment per Executive Order 12898.

Feasible Alternative – Feasible alternatives developed in Tier 1 are not specific alignment locations, but rather alternative corridors that will be further developed and evaluated during Tier 2 of the Eastern Corridor study. In general, Tier 1 feasible alternatives have been determined to be geometrically feasible (based on preliminary engineering), address transportation need, and have been developed with consideration of environmental, financial, stakeholder input, land use and community issues.

Federal Emergency Management Agency (FEMA) Floodplain – A floodplain is an area that will be inundated by a flood from a waterbody (i.e. river, creek, ditch, lake, etc.). FEMA is a federal agency that regulates the area known as the 100-year floodplain, which is the area that will be inundated by the 100-year flood. The agency regulates community development through a local ordinance conforming to the National Flood Insurance Program (NFIP).

Focus Area – The Eastern Corridor Land Use Vision work, conducted prior to the Tier 1 work phase, included public input from six geographic Focus Areas (Wasson, Red Bank, Wooster, Ohio 32, Eastern Avenue/Lunken and River Plains), covering an approximately 70 square mile study area of the Eastern Corridor.

Geographic Information System (GIS) – A computerized system of hardware, software, and data used to map, record and analyze information. GIS data is stored as layers which can be displayed to show physical location of features, which can also be superimposed to show relationship between different types of features.

Hazardous Materials Concern Site – Sites that may contain hazardous materials identified as those listed in one or more of the following state or federal databases (per ODOT Office of Environmental Services, Environmental Site Assessment Guidelines, September 1999): National Priority List (NPL) Sites, Comprehensive Environmental Recovery Compensation and Liability Act (CERCLA) Sites, Ohio Master List (MSL) Sites, Resource Conservation and Recovery Act Large Quantity Generators (RCRA LQG's), RCRA Transportation Storage Disposal Facilities (RCRA TSD's), Solid Waste Facilities (SWF's), or any sites with the potential for a release and/or impact of hazardous materials.

High Occupancy Vehicles (HOV) – Vehicles that contains a driver and one or more passengers; also includes buses and vans. These vehicles are allowed to travel in special road lanes on which single occupant vehicles are prohibited. These lanes are usually reserved for HOV during peak hours but in some areas of the country these lanes are HOV only full-time.

Implementation Group (Partners) – The group enlisted by the Hamilton County Transportation Improvement District (HCTID) to oversee the Eastern Corridor study's progress and direction. The group includes the Ohio, Kentucky and Indiana Regional Council of Governments (OKI), the Ohio Department of Transportation (ODOT), Clermont County, Hamilton County, the City of Cincinnati, and the Southwest Ohio Regional Transit Authority (SORTA)/Metro.



Indirect Impact – The Council on Environmental Quality (CEQ) Regulations defines indirect impacts as "effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate..." (CEQ Regulations). An example of an indirect impact for this project is the conversion of an old-field into a new interchange.

Limited Access – Full control of access; highway right-of-way where rights of access of properties abutting the highway are acquired, such that all access to and from the highway are prevented except at designated locations.

Level of Service (LOS) – Is a qualitative measure of traffic conditions taking into account the effect of a number of factors such as traffic volumes (including trucks), speed (design and actual), travel time, traffic interruptions, freedom to maneuver, safety, driving comfort, convenience and operating costs. The LOS rating is based on a scale ranging from "A" for free flowing traffic (best travel conditions) to "F" which indicates highly congested conditions, with an LOS of "C" being the generally accepted standard.

Light Rail Transit (LRT) – Rail transit using electrically powered (overhead contact system) technology; the proposed technology for the Eastern Corridor Wasson rail transit alternative

Major Investment Study (MIS) – A highway or transit improvement study conducted for major improvement projects involving significant Federal funds. An MIS is conducted when there is an expected substantial effect on capacity, traffic, level of service or mode share at the transportation corridor or subarea level. MIS studies contain input from the public, intergovernmental agencies, and evaluate the potential community and environmental impacts of a project. For the Eastern Corridor project, the MIS was completed in April 2000, and recommended a comprehensive multimodal strategy for addressing current and projected transportation problems in the area.

MetroMoves Plan – A 30-year transit development plan, developed by the Southwest Ohio Regional Transit Authority (SORTA), for serving the greater Cincinnati metropolitan area, including Hamilton, Butler, Warren and Clermont Counties, Ohio and northern Kentucky. The MetroMoves plan incorporates the Regional Rail Plan, which was developed by SORTA, OKI, the Transit Authority of Kentucky (TANK) and Hamilton County. Overall, the MetroMoves plan focuses on expanding the current, primarily city-based transit system, to one that more effectively serves the entire Hamilton County and greater Cincinnati metropolitan area.

MIS Recommended Plan – The outcome of the Eastern Corridor Major Investment Study (MIS), which included a comprehensive multi-modal strategy for addressing current and projected transportation problems in the area. Multi-modal components of the plan included: transportation system management (TSM) improvements, new and expanded bus transit service, new rail transit service and highway capacity improvements. Overall, the MIS Recommended Plan identified various transportation modes and concepts that were used as the starting point in the Eastern Corridor Tier 1 work program.

Mitigation Measures – specific commitments made during the environmental evaluation and study process that serve to moderate or lessen impacts resulting from a proposed actions; these measures may include planning and development commitments, environmental measures, right-of-way improvements and agreements with resource or other agencies to affect construction or post-construction action.



Multi-Modal Components – Includes transportation system management (TSM) improvements, new and expanded bus transit service, new rail transit service and highway capacity improvements proposed for the Eastern Corridor.

Multi-Modal Convergence Point – A location at which several different multi-modal upgrades/improvements meet. An example from the Eastern Corridor project is when rail transit and bike paths converge or rail transit and bus transit meet.

Multi-Modal Transportation Improvements (or Plan or Strategy) – Includes four different modes of transportation (transportation system management (TSM) improvements, new and expanded bus transit service, new rail transit service and highway capacity improvements) that are land use driven. For the Eastern Corridor project, these improvements are planned around a desirable and supportable future land use vision plan, and also recognize that the individual transportation projects in different modal categories need to be coordinated and implemented to work in conjunction with and compliment each other.

National Register (NR) – Is the Nation's official list of cultural resources worthy of preservation. It was designed to identify, evaluate, and protect our historic and archeological resources. The list includes districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.

National Environmental Policy Act (NEPA) – Passed in 1969, the act requires federal agencies to consider the environmental impacts of major federal projects or decisions, to allow public input; to identify and assess reasonable alternatives; and to coordinate efforts with other planning and environmental reviews taking place.

New Starts Program – A Federal Transit Authority (FTA) program that supports local fixed guideway transit projects. Projects that seeks the funding must emerge from a locally driven multi-modal planning process, and eligible projects include any fixed guideway system which utilizes and occupies a separate right-of-way or rail line for the exclusive use of mass transportation (such as commuter rail, rapid rail, light rail, automated guideway transit, people movers, or exclusive facilities for buses or other high occupancy vehicles).

No Build Alternative – Do Nothing Alternative that is used as the baseline for the assessment of feasible alternatives and preliminary environmental impacts. This consists of continued use of the existing roadway network in the project area, plus committed improvements that are included in the OKI's 2030 Regional Transportation Plan (TIP) and the state long-range plan transportation (STIP). Essentially this plan involves no direct environmental impacts or construction costs.

National Wetland Inventory (NWI) Wetland – A wetland feature identified from the U.S. Fish and Wildlife Service's National Wetland mapping series, which is primarily based on satellite imagery and depicts information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats overlain onto USGS 7.5-minute topographic quadrangles.

Notice of Intent – Announcement in the Federal Register advising interested parties that an Environmental Impact Statement will be prepared and circulated for a given project.

Ordinary High Water (Mark) (OHW or OHWM) – A defined line on a bank that is established by the fluctuations of water and indicated by physical characteristics such as natural line impressed



on the bank, exposed roothairs, shelving, changes in character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris.

Other Cultural Resources - For the Eastern Corridor Tier 1 work, this is a category of cultural resources that are not currently listed on the National Register, and whose eligibility for the National Register has not been determined (additional field work required; to be conducted during Tier 2). Included in this category are previously inventoried historic sties (Ohio Historic Inventory sites), previously inventoried archaeological sites (Ohio Archaeological Inventory sites), and sites exhibiting potential NR characteristics, as identified during Tier 1 cultural resources field studies.

Park-and-Ride Facility – Are parking facilities located at transit stations, bus stops or highway onramps. These facilities are located near the perimeter of urban centers and assist in local rideshare.

Public Hearing – A formal meeting that will be held prior to the Tier 1 Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) in order to obtain comments for public record.

Public Meetings/Workshops – Meetings held at various times in the Easter Corridor Tier 1 work phase to provide stakeholders, communities and individuals affected or interested in the project with project information and the opportunity to provide input on project development.

Public Water Supply – Are facilities registered with OEPA to provide public drinking water from wells, such as local water utility companies, restaurants, churches and stores.

Purpose and Need – A document written as part of the NEPA process that evaluates the need for a transportation project and defines the goals and objectives of the project.

Qualitative Habitat Evaluation Index (QHEI) – A measurement of the quality of a stream's habitat that corresponds to the physical features that affect fish and invertebrate communities.

Regional Travel Demand Model (RTDM) – A computerized travel demand forecasting model. It uses mathematical process to assess the interaction of many travel variables to forecast future travel demand in an area, and how that demand would likely be shared among different transportation modes (such as ride alone, ride sharing and public transit use). The model also takes into account travel time and cost as primary indicators of transportation efficiency.

Record of Decision (ROD) – A document prepared by the Federal Highway Administration that presents the basis for selecting and approving a specific transportation proposal that has been evaluated through various environmental and engineering studies. Typically, the ROD identifies the alternatives selected in the Final EIS, the alternatives considered, measures to minimize hard, monitoring or enforcement programs, and a list of commitments and mitigation measure for the project.

Section 4(f) Determination – Administrative action by which the Federal Highway Administration confirms that, based on extensive studies and analysis, there are no prudent and feasible alternatives to the taking of land from resources protected under Section 4(f) of the U.S. Department of Transportation Act, as amended (49 USC 303). These resources include parks or recreation areas that are publicly owned or open to the public, publicly owned wildlife or waterfowl refuges, or any significant historic sites.



Section 6(f) - A provision in the Federal Land and Water Conservation Fund Act that protects public recreational properties developed or enhanced using federal funding supplied to states or municipalities under the act by requiring replacement of lands converted to non-recreational uses. Proposed transportation projects which affect such lands require a study and analysis of alternatives to serve as the basis for a Section 6(f) finding by the U.S. Department of the Interior.

Section 1010 (UPARR) - Section 1010 of the Urban Park and Recreation Recovery (UPARR) Program protects public recreational properties developed or enhanced using federal funding supplied to states or municipalities under the program by requiring replacement of lands converted to non-recreational uses. The conversion of any of these sites to a non-recreational use would require replacement of the recreational properties.

Section 404 Permit – A U.S. Corps of Engineers permit to authorize the discharge of dredged or fill materials into waters of the U.S. pursuant to Section 404 of the Clean Water Act (33 USC 1344).

Section 401 Water Quality Certification – Required by Section 401 of the Federal Clean Water Act for projects involving discharge of materials into surface waters, including wetlands. The applicant must demonstrate that activities will comply with water quality standards and other provisions of federal and state law and regulations regarding pollutant sources.

Section 106 – Procedures based on Section 106 of the National Historic Preservation Act of 1966 which governs the identification, evaluation, and protection of historical and archaeological resources affected by state and federal transportation projects. Requires evaluations to determine the presence or absence of sites, the eligibility based on National Register of Historic Places criteria, and the significance of the effect of a proposed project upon such a site.

Section 7 (Wild and Scenic Rivers) –The section of the Wild and Scenic Rivers Act that directs federal agencies to protect the free-flowing condition and other values of designated rivers and congressionally authorized study rivers. The act was designed to preserve rivers from the dams and developments associated with many of the nation's waterways.

Sole Source Aquifer – An aquifer that is the main or only supplier (supplies 50 percent or more) of dinking water for a specific area. Designated as such under the Federal Safe Drinking Water Act (1986).

Tiering – Tiering is an approach for completing the NEPA process in stages so that information matches up with decision-making in a more efficient and effective manner. For the Eastern Corridor, the Tier 1 phase involves the preparation of an EIS that evaluates a broad study area, set of modes, and/or potential corridors associated with a major federal action that triggers the NEPA process. The Tier 1 EIS provides enough information - including preliminary engineering, inventory of environmental resources, preliminary impact assessment, and preliminary performance and cost analyses - to allow for decision-making regarding the alternatives being considered. Tier 1 ends with a Record of Decision (ROD) that identifies a set of feasible alternatives to be carried through into a Tier 2 stage. Tier 2 involves the preparation of separate NEPA documents for projects carried through from the first tier. These may be EIS's, environmental assessments or categorical exclusions, depending on project complexity and degree of expected impact. The environmental documents prepared for Tier 2 projects typically involve more detailed alternative alignment development, more detailed environmental field studies and evaluation, detailed environmental impact assessment, and



identification of mitigation measures and environmental commitments - to sufficiently address and complete the NEPA process on a specific project-by-project basis.

Transit Hub – Four types of transit hubs (bus stations or bus/rail transit stations) are proposed for the Eastern Corridor based on size and facilities: the <u>on-street mini-hub</u>, consisting of enhanced shelters developed within the existing road and sidewalk right-of-way, the <u>off-street hub</u> with parking, consisting of off street loading bays, dedicated passenger waiting shelters and parking area, the <u>hybrid hub</u>, consisting of a combination of on-street stops and off-street bays and the <u>on-street storefront</u>.

Transportation Mode – There are four transportation modes identified from the MIS recommended plan as a starting point in the development of alternatives: transportation system management (TSM) improvements, new and expanded bus transit service, new rail transit service and highway capacity improvements.

Transportation System Management (TSM) – The component of the Eastern Corridor multimodal plan that focuses on improving the existing transportation network through use of operational strategies (such as improved signal timing), minor highway capacity improvements (such a lane addition and intersection improvements), as well as use of transportation demand management (TDM) strategies for changing travel behavior (such as rideshare expansion);

Waters of the United States – Water bodies subject to U.A. Army Corps of Engineers jurisdiction, including all interstate and intrastate waters such as lakes, stream and wetlands.

Wellhead Protection Area (WHPA) – Designated protection zones around public wells that are included in the state Wellhead Protection Program established by OEPA in 1992 per 1986 Safe Drinking Water Act Amendments. The WHPA includes the area surrounding a drinking water well or well field, which is protected to prevent contamination of the well(s).