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

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 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.

Project Goals: 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.

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

Key Location	ADT		Percent Change
	Existing / 1995	No Build / 2030	
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	ADT		Percent Change
	Existing / 1995	No Build / 2030	
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%

[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 east-west 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.

Future Travel: 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.

Transit Use: 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

Level of Service: 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 Build Below-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 Build Below-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.

Congestion: 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.

Existing development and congested traffic conditions along SR 32 in Newtown

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.

Traffic queue on Newtown Road bridge over the Little Miami River
Photo: OKI Eastern Corridor Inventory of Recurring Congestion (Fall 1995)

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 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.

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

	Eastern Corridor		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 Corridor		OKI Region	
	1995	**2030**	**1995**	**2030**
Change from 1995 Base (VMT)	--	25%	--	47%

[1] 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.

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.

Intersection at SR 32 and Eight Mile Road

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.

Roadway Accidents: 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.

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

Roadway	1998 - 2000 Accidents						
	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**		

[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 conditions at SR 32 and Gleneste-Withamsville Road (see Table 2.5)

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.

Table 2.5. Accident Data by Major Intersections in the Eastern Corridor

		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**

* indicates that this intersection has been recently improved

Current Trends in Accident Data: 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.

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

Roadway	Accidents Per Year					
	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**	

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

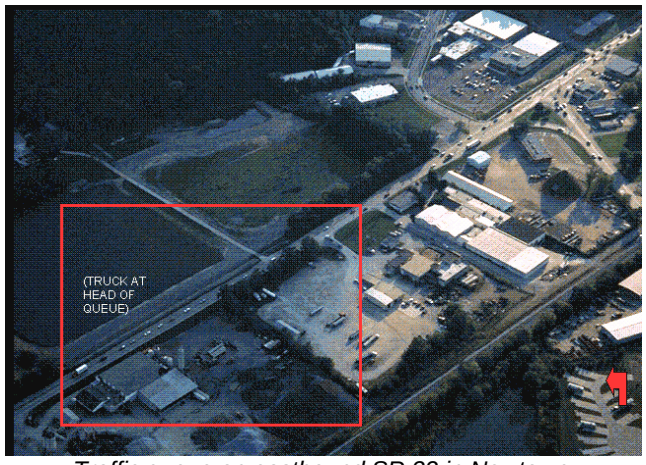
The existing transportation infrastructure in the Eastern Corridor is predominantly highway based. This existing highway network was primarily established between the 1960's and the 1980's, and no major capacity improvements have been undertaken since. Many roads in the area are currently congested and 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 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).



Traffic queue on eastbound SR 32 in Newtown caused by truck traffic
Photo: OKI Eastern Corridor Inventory of Recurring Congestion (Fall 1995)

2.2.7. Population and Economic Growth and Development

Economic and Workforce Development: 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.

Urban Revitalization: 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 inter-modal 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, inter-modal 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 fixed-guideway 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.