

**Table 11. Comparative Impact and Cost Summary – US 50/RED BANK ROAD SUBAREA**

Features/Considerations	Preliminary Alternative Corridor Segment		
	Alternative B1	Alternative B2	Alternative B3
<b>General</b>			
Centerline Length	0.5 mile	0.6 mile	1.1 miles or 1.2 miles (depending on Segment I alternative)
Total Area in Alignment Corridor	60 acres	73 acres	99 acres
<b>Community and Land Use</b>			
Potential Residential Displacements	10	29	31
Potential Commercial Displacements	6 (2 vacant)	5	4
Greenspaces – Private	0	0	0
Public (additional study required to determine Section 4(f) applicability)	0	0	0
Schools	0	0	0
Churches	0	0	0
Cemeteries	0	0	0
Hospitals/Emergency Service	0	0	0
Community Buildings/Facilities/County or State	1 (county)	1 (county)	0
Potential Job Displacements	70-142	186-420	141-351
EJ Communities	Elderly and disabled populations at or above regional averages	Elderly and disabled populations at or above regional averages	Elderly and disabled populations at or above regional averages
Agricultural Land	3 acres	2 acres	4 acres
Visual Resources	Bluffs along south side of Fairfax and Mariemont above Little Miami River	Bluffs along south side of Fairfax and Mariemont above Little Miami River	Bluffs along south side of Fairfax and Mariemont above Little Miami River
Public Involvement Considerations	Red Bank Road corridor re-development in progress; no specific issues noted	Red Bank Road corridor re-development in progress; no specific issues noted	Red Bank Road corridor re-development in progress; no specific issues noted
<b>Little Miami River Crossing</b>			
Channel Stability Considerations	Not Applicable	Not Applicable	Not Applicable
Crossing Suitability	Not Applicable	Not Applicable	Not Applicable
<b>Floodplains and Groundwater</b>			
100 Year FEMA Floodway/Floodplain	<u>Floodway Length Bridged:</u> Duck Creek (500 feet), Duck Creek Tributary (200 feet) <u>Floodplain:</u> Little Miami River (10 acres), Duck Creek (1 acre), Duck Creek Tributary (2 acres).	<u>Floodway Length Bridged:</u> Duck Creek (300 feet), Duck Creek Tributary (75 feet) <u>Floodplain:</u> Little Miami River (14 acres), Duck Creek (4 acres), Duck Creek Tributary (3 acres)	<u>Floodway Length Bridged:</u> Duck Creek (250 to 470 feet), Duck Creek Tributary #3 (75 feet) <u>Floodplain:</u> Little Miami River (25 acres), Duck Creek (2 acres), Duck Creek Tributary #2 (2 acres), Duck Creek Tributary #3 (4 acres)
Sole-Source Aquifer	51 acres	28 acres	56 acres
Drinking Water Source Protection Areas	0	0	0
Public Water Supplies	0	0	0
<b>Ecological Resources</b>			
Federal-listed Species	Potential Indiana bat habitat (22 acres)	Potential Indiana bat habitat (24 acres)	Potential Indiana bat habitat (32 acres)
Wetlands [total number (acres)]	1 (0.02 acre)	1 (0.23 acre)	1 (0.23 acre)
Surface Streams			
Culvert Crossings (number/linear feet filled)	0 (0 feet)	0 (0 feet)	1 (312 feet)
Bridge Crossings (number)	2	5	7
High Quality WWH/Class III PHWH Crossings	0	Duck Creek Tributary #2 (bridge crossing)	Duck Creek Tributary #2 (culvert crossing)
Ponds	0	0	0
Woodland Habitat	22 acres	24 acres	32 acres
Other Notable Ecological Features	Abandoned Duck Creek channel	0	0
<b>Cultural Resources</b>			
Section 4(f) History/Architecture			
NRHP District?	No	No	No
Previously-Determined NRHP-Eligible Sites?	No	No	No
Sites Warranting Further Study?	No	No	No
Section 4(f) Archaeology			
NRHP District?	No	No	No
High-Sensitivity Areas? (Gray & Pape, 2009)	No	No	Yes (1 site)
Recorded/Unrecorded Sites? (Gray & Pape, 2010)	No	No	Yes (1 site)
Site Complexity (Gray & Pape, 2010)	NA	NA	Simple
Site Disturbance Level (Gray & Pape, 2010)	NA	NA	Minimal
Sites with Human Burials Confirmed or Suspected? (Gray & Pape, 2010)	NA	NA	No
<b>Public Parks and Recreation Areas</b>			
Section 4(f) Public Parks/Recreation Areas	0	1 Ault Park (0.10 acre)	1 Ault Park (1.8 acres)
Section 6(f) Public Parks/Recreation Areas	0	0	0
<b>Noise and Air Quality</b>			
Adjacent Noise Sensitive Areas	1	1	1
Preliminary Estimated Cost of Noise Mitigation	\$671,200	\$890,800	\$918,800
Potential Air Quality Issues	Located in non-attainment area for eight-hour ozone and PM <sub>2.5</sub> ; project-level hot-spot analyses not anticipated; MSAT analysis required	Located in non-attainment area for eight-hour ozone and PM <sub>2.5</sub> ; project-level hot-spot analyses not anticipated; MSAT analysis required	Located in non-attainment area for eight-hour ozone and PM <sub>2.5</sub> ; project-level hot-spot analyses not anticipated; MSAT analysis required
<b>Potential Hazardous Materials Sites</b>			
Suspect Sites Requiring Phase I Studies	8 (incl. 1 landfill)	5 (incl. 1 landfill)	6 (incl. 1 landfill)
<b>Rail Freight Considerations</b>			
Rail Freight Considerations	Coordination with existing freight traffic in the US 50/Red Bank Road area and access to the Clare Yard	Coordination with existing freight traffic in the US 50/Red Bank Road area and access to the Clare Yard	Coordination with existing freight traffic in the US 50/Red Bank Road area and access to the Clare Yard
<b>Engineering and Design Considerations</b>			
Geotechnical Issues	Landslide potential along bluffs over the Little Miami River	Landslide potential along bluffs over the Little Miami River	Landslide potential along bluffs over the Little Miami River
Major Utilities	2 electric, 1 water, 4 sewer	2 electric, 1 water, 4 sewer	2 electric, 1 water, 4 sewer
Earthwork and Drainage	None identified at this time	None identified at this time	None identified at this time
Horizontal and Vertical Geometry	Possible grade/configuration issues at US 50/Red Bank Road interchange	Possible grade/configuration issues at US 50/Red Bank Road interchange	Possible grade/configuration issues at US 50/Red Bank Road interchange
<b>Eastern Corridor Considerations</b>			
Fit with Eastern Corridor Improvements/Plans	Align with Segment I feasible alternatives and proposed local network improvements	Align with Segment I feasible alternatives and proposed local network improvements	Align with Segment I feasible alternatives and proposed local network improvements
<b>Preliminary Cost Estimates (current \$\$)</b>			
Multi-modal Construction Cost Estimate (Highway and Rail Transit) Right-of-Way Cost Estimate	Cost estimates for alternatives in this subarea will be conducted in the next phase of work (see below and text Section 5.1)	Cost estimates for alternatives in this subarea will be conducted in the next phase of work (see below and text Section 5.1)	Cost estimates for alternatives in this subarea will be conducted in the next phase of work (see below and text Section 5.1)

<b>MODIFY/COMBINE ALL SEGMENTS AND ADVANCE</b>	
<b>SEGMENT RECOMMENDATION:</b>	All three segments require minor modifications to align with current Eastern Corridor Segment I (Red Bank Road) alternatives. These minor alignment modifications will substantially reduce the residential impacts all three segments (particularly Segments B2 and B3), and as a result, all three segments are expected to be similar in overall environmental impacts. Additionally, none of the three segments currently has distinguishing design, traffic, rail transit compatibility, or anticipated cost benefits (or disadvantages) at this time. As a result, all three modified segments are being advanced as one combined segment footprint, in which feasible roadway/transit alignments and interchange configurations will be developed in the next phase of work, once additional design work and traffic modeling is completed and certified traffic is available.