

# Mainline Alternatives Comparison Matrix

## Conceptual Alternatives Study PDP Step 5

Impacts/Issues	Impact/Issue Description	I75-NB	I75-A	I75-D
		No Build Plus Minor Improvements	Four Lane Continuity with Auxiliary Lanes	Five/Four-Lane
Key Design Issues	The Key Design Issue(s) for each alternative.	Not Applicable	1) RR avoidance 2) Hillside impacts	1) Impact on Ludlow Viaduct 2) Utility Relocation
Traffic Analysis	2030 with Improvements (there are 7 segments along the mainline, however, the analysis by alternative represents both AM & PM for a total of 14)	Not Applicable	LOS D - 1 segment, LOS E - 7 segments, LOS F - 6 segments	LOS D - 4 segments, LOS E - 6 segments, LOS F - 4 segments
Social & Community Impacts	This includes primarily the impacts to the communities due to proposed access changes.	No noteworthy mainline impacts. Most community impacts will be interchange related.	No noteworthy mainline impacts. Most community impacts will be interchange related.	No noteworthy mainline impacts. Most community impacts will be interchange related.
Environmental Justice	While the project is proposed to affect residential parcels in several census tracts, no one tract or environmental justice population bears disproportionate effects.			
Parks & Recreation - Section 4(f)	The consideration of property that is publicly owned parks and recreation lands, wildlife and waterfowl reserves and historic properties.	No potential impacts	Bank Avenue Park (0.7 acres), Maple Street Park (0.2 acres), Mt. Storm Park (1.3 acres) and Elmwood Place Park (0.1 acres)	Bank Avenue Park (0.7 acres), Maple Street Park (0.2 acres), Mt. Storm Park (1.3 acres) and Elmwood Place Park (0.1 acres)
ROW Impacts	The additional amount of ROW (in acres) necessary to meet ODOT standards per alternative.	No potential impacts	25.1 acres	25.6 acres
Potential Residential Relocations	The number of residential properties affected by each alternative.	No potential impacts	9 residential properties	9 residential properties
Potential Commercial Relocations	The number of commercial properties affected by each alternative.	No potential impacts	6 commercial properties	8 commercial properties
Cultural Resources	Those properties determined to be history/architecture sites requiring further study to determine eligibility for NRHP status.	No potential impacts	No potential impacts	B&O RR Depot, St. Johns Cemetery, Cincinnati Street Railway Substation, Mt. Storm Park
Ecological Resources	Those ecological resources, including aquatic resources, terrestrial habitats and endangered and threatened species potentially impacted.	No potential impacts	38 linear feet of streams	38 linear feet of streams
Hazardous Materials	Sites recommended for Phase I ESA.	No potential sites	21 sites	22 sites
Noise Quality	Preliminary noise research during the red flag field review and review of existing mapping indicate that there are potential "Activity Category B" noise sensitive land uses present in the study area. Noise sensitive land uses in "Activity Category B" are described as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals. Several of these land uses were identified within the 400-foot boundary used for conducting noise analyses.			
Air Quality	The OEP/ODOT agreement states that a quantitative CO analysis is recommended for projects that modify existing facilities that cause an increase in Average Daily Traffic of more than 10,000 vehicles between project completion and ten years hence. Based on preliminary traffic numbers, it appears that the ten-year traffic increase will exceed the 10,000-vehicle maximum. As a result, it is anticipated that a quantitative CO analysis will be required.			
Geotechnical Issues	The most significant geologic hazard within the project area is the occurrence of landslides.	No potential impacts	No potential impacts	Impact 0.9 acres of potential landslide area
Rail Issues	All of the proposed rail impacts are concentrated at three locations (all north of the I-74/I-75 interchange). Those locations include bridges over the expressway near the Norwood Lateral Interchange and the vicinity of Vine Street and SR 127 (Ludlow Avenue). Particular issues exist at each of the locations where the railroad will be impacted.			
Transit Issues	The project team will coordinate with SORTA to review the impacts of access changes in greater detail in subsequent steps of the PDP. In addition, all alternatives have avoided the transit tunnels to be used for future light/commuter rail.			
Utility Issues	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements. At this particular stage of design, the main point of concern is with major utility transmission facilities.			
ROW Costs	Step 5 level of detail estimates	Not Applicable	\$8,100,000	\$9,500,000
Construction Costs	Step 5 level of detail estimates	Not Applicable	\$216,000,000	\$224,000,000

\*Construction cost for I75-D is a sum of I-75A plus additional lane in NB direction from WHV to just north of the I-74 interchange and partial reconstruction of the Ludlow Viaduct.

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# Hopple Interchange Alternatives Comparison Matrix

## Conceptual Alternatives Study PDP Step 5

Impacts/Issues	Impact/Issue Description	HOP-NB	HOP-A	HOP-B1
		No Build Plus Minor Improvements	Tight Urban Diamond Interchange	Offset Diamond Interchange (No Roundabout)
<b>Key Design Issues</b>	The Key Design Issue(s) for each alternative.	No noteworthy impacts	1) Grade separation at Hopple/MLK/Central Intersection. 2) Additional signal installed for ramp intersection.	1) Spacing reduced between ramp terminals at adjacent interchanges. 2) I-75NB ramps contain lower speed curves.
<b>Social &amp; Community Impacts</b>	This includes primarily the impacts to the communities due to proposed access changes.	No potential impacts	Improve access to Uptown area and potential gateway location.	Improve access to Uptown area and potential gateway location.
<b>Environmental Justice</b>	While the project is proposed to affect residential parcels in several census tracts, no one tract or environmental justice population bears disproportionate effects.			
<b>Parks &amp; Recreation - Section 4(f)</b>	The consideration of property that is publicly owned parks and recreation lands, wildlife and waterfowl reserves and historic properties.	No potential impacts	No potential impacts	No potential impacts
<b>ROW Impacts</b>	The additional amount of ROW (in acres) necessary to meet ODOT standards per alternative.	No potential impacts	5.9 acres	5.3 acres
<b>Potential Residential Relocations</b>	The number of residential properties affected by each alternative.	No potential impacts	10 residential properties	4 residential properties
<b>Potential Commercial Relocations</b>	The number of commercial properties affected by each alternative.	No potential impacts	5 commercial properties	1 commercial property
<b>Cultural Resources</b>	Those properties determined to be history/architecture sites requiring further study to determine eligibility for NRHP status.	No potential impacts	Rachel-Sidney Neighborhood (0.5 acres)	Rachel-Sidney Neighborhood (0.5 acres)
<b>Ecological Resources</b>	Those ecological resources, including aquatic resources, terrestrial habitats and endangered and threatened species potentially impacted.	No potential impacts	No potential impacts	No potential impacts
<b>Hazardous Materials</b>	Sites recommended for Phase I ESA.	No potential impacts	3 sites	3 sites
<b>Noise Quality</b>	Preliminary noise research during the red flag field review and review of existing mapping indicate that there are potential "Activity Category B" noise sensitive land uses present in the study area. Noise sensitive land uses in "Activity Category B" are described as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals. Several of these land uses were identified within the 400-foot boundary used for conducting noise analyses.			
<b>Air Quality</b>	The OEPA/ODOT agreement states that a quantitative CO analysis is recommended for projects that modify existing facilities that cause an increase in Average Daily Traffic of more than 10,000 vehicles between project completion and ten years hence. Based on preliminary traffic numbers, it appears that the ten-year traffic increase will exceed the 10,000-vehicle maximum. As a result, it is anticipated that a quantitative CO analysis will be required.			
<b>Geotechnical Issues</b>	The most significant geologic hazard within the project area is the occurrence of landslides.	No potential impacts	3.7 acres	1.9 acres
<b>Rail Issues</b>	All of the proposed rail impacts are concentrated at three locations (all north of the I-74/I-75 interchange). There are no rail issues at this location.			
<b>Transit Issues</b>	The project team will coordinate with SORTA to review the impacts of access changes in greater detail in subsequent steps of the PDP. In addition, all alternatives have avoided the transit tunnels to be used for future light/commuter rail near this interchange.			
<b>Utility Issues</b>	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements.			
<b>ROW Costs</b>	Step 5 level of detail estimates	Not Applicable	\$7,300,000	\$4,800,000
<b>Construction Costs</b>	Step 5 level of detail estimates	Not Applicable	\$18,000,000	\$21,200,000

\*Construction and ROW cost for both Hopple alternatives would have a minimal difference for I75-A and I75-D alternatives. For this comparison the same \$'s are used.

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# I-74 Interchange Alternatives Comparison Matrix

## Conceptual Alternatives Study PDP Step 5

Impacts/Issues	Impact/Issue Description	I74-NB	I74-A	I74-B
		No Build Plus Minor Improvements	Fully Directional Interchange with Local Access	Fully Directional Interchange with No Local Access
<b>Key Design Issues</b>	The Key Design Issue(s) for each alternative.	No potential impacts	Potential impact to Ludlow Viaduct overhead bridge.	Reduces local access to the freeway.
<b>Social &amp; Community Impacts</b>	This includes primarily the impacts to the communities due to proposed access changes.	No potential impacts	No potential impacts	By closing the local access ramps, residents and businesses would be forced to use adjacent interchanges at Hopple and Colerain.
<b>Environmental Justice</b>	While the project is proposed to affect residential parcels in several census tracts, no one tract or environmental justice population bears disproportionate effects.			
<b>Parks &amp; Recreation - Section 4(f)</b>	The consideration of property that is publicly owned parks and recreation lands, wildlife and waterfowl reserves and historic properties.	No potential impacts	Mt. Storm Park (0.6 acres)	Mt. Storm Park (0.6 acres)
<b>ROW Impacts</b>	The additional amount of ROW (in acres) necessary to meet ODOT standards per alternative.	No potential impacts	9.1 acres	5.4 acres
<b>Potential Residential Relocations</b>	The number of residential properties affected by each alternative.	No potential impacts	No potential impacts	No potential impacts
<b>Potential Commercial Relocations</b>	The number of commercial properties affected by each alternative.	No potential impacts	No potential impacts	No potential impacts
<b>Cultural Resources</b>	Those properties determined to be history/architecture sites requiring further study to determine eligibility for NRHP status.	No potential impacts	Mt. Storm Park (0.6 acres)	Mt. Storm Park (0.6 acres)
<b>Ecological Resources</b>	Those ecological resources, including aquatic resources, terrestrial habitats and endangered and threatened species potentially impacted.	No potential impacts	720 linear feet of stream impacts	720 linear feet of stream impacts
<b>Hazardous Materials</b>	Sites recommended for Phase I ESA.	No potential sites	8 potential sites	8 potential sites
<b>Noise Quality</b>	Preliminary noise research during the red flag field review and review of existing mapping indicate that there are potential "Activity Category B" noise sensitive land uses present in the study area. Noise sensitive land uses in "Activity Category B" are described as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals. Several of these land uses were identified within the 400-foot boundary used for conducting noise analyses.			
<b>Air Quality</b>	The OEPA/ODOT agreement states that a quantitative CO analysis is recommended for projects that modify existing facilities that cause an increase in Average Daily Traffic of more than 10,000 vehicles between project completion and ten years hence. Based on preliminary traffic numbers, it appears that the ten-year traffic increase will exceed the 10,000-vehicle maximum. As a result, it is anticipated that a quantitative CO analysis will be required.			
<b>Geotechnical Issues</b>	The most significant geologic hazard within the project area is the occurrence of landslides.	No potential impacts	No potential impacts	No potential impacts
<b>Rail Issues</b>	All of the proposed rail impacts are concentrated at three locations (all north of the I-74/I-75 interchange). Those locations include bridges over the expressway near the Norwood Lateral Interchange and the vicinity of Vine Street and SR 127 (Ludlow Avenue). Particular issues exist at each of the locations where the railroad will be impacted.			
<b>Transit Issues</b>	The project team will coordinate with SORTA to review the impacts of access changes in greater detail in subsequent steps of the PDP.			
<b>Utility Issues</b>	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements.	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements.	This alternative impacts the Cinergy Electric Substation (valued at \$4 million).	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements.
<b>ROW Costs</b>	Step 5 level of detail estimates	Not Applicable	\$1,200,000	\$800,000
<b>Construction Costs</b>	Step 5 level of detail estimates	Not Applicable	\$56,100,000	\$45,000,000

\*Construction and ROW cost for both I-74 alternatives would have a minimal difference for I75-A and I75-D alternatives. For this comparison the same \$'s are used.

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# Colerain Interchange Alternatives Comparison Matrix

## Conceptual Alternatives Study PDP Step 5

Impacts/Issues	Impact/Issue Description	COL-NB	COL-A	COL-B
		No Build Plus Minor Improvements	Low Impact Improvement with Full Movements	Double Roundabout Diamond Interchange
Design Issues	The Key Design Issue(s) for each alternative.	No noteworthy impacts	Potential conflict with I-74 build alternatives (minimum distance not met between system interchange ramp and service road exit ramp).	1) Potential conflict with I-74 build alternatives (minimum distance not met between system interchange ramp and service road exit ramp). 2) Potential driver confusion (Roundabouts)
Social & Community Impacts	This includes primarily the impacts to the communities due to proposed access changes.	No potential impacts	The creation of a full-movement interchange will improve service to the surrounding neighborhoods.	The creation of a full-movement interchange will improve service to the surrounding neighborhoods.
Environmental Justice	While the project is proposed to affect residential parcels in several census tracts, no one tract or environmental justice population bears disproportionate effects.			
Parks & Recreation - Section 4(f)	The consideration of property that is publicly owned parks and recreation lands, wildlife and waterfowl reserves and historic properties.	No potential impacts	Beekman Park (0.1 acres)	Beekman Park (0.1 acres)
ROW Impacts	The additional amount of ROW (in acres) necessary to meet ODOT standards per alternative.	No potential impacts	2.7 acres	1.4 acres
Potential Residential Relocations	The number of residential properties affected by each alternative.	No potential impacts	1 residential property	1 residential property
Potential Commercial Relocations	The number of commercial properties affected by each alternative.	No potential impacts	No potential impacts	No potential impacts
Cultural Resources	Those properties determined to be history/architecture sites requiring further study to determine eligibility for NRHP status.	No potential impacts	No potential impacts	No potential impacts
Ecological Resources	Those ecological resources, including aquatic resources, terrestrial habitats and endangered and threatened species potentially impacted.	No potential impacts	Wetland (less than 0.1 acre)	Wetland (less than 0.1 acre)
Hazardous Materials	Sites recommended for Phase I ESA.	No potential impacts	3 sites	3 sites
Noise Quality	Preliminary noise research during the red flag field review and review of existing mapping indicate that there are potential "Activity Category B" noise sensitive land uses present in the study area. Noise sensitive land uses in "Activity Category B" are described as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals. Several of these land uses were identified within the 400-foot boundary used for conducting noise analyses.			
Air Quality	The OEPA/ODOT agreement states that a quantitative CO analysis is recommended for projects that modify existing facilities that cause an increase in Average Daily Traffic of more than 10,000 vehicles between project completion and ten years hence. Based on preliminary traffic numbers, it appears that the ten-year traffic increase will exceed the 10,000-vehicle maximum. As a result, it is anticipated that a quantitative CO analysis will be required.			
Geotechnical Issues	The most significant geologic hazard within the project area is the occurrence of landslides.	No potential impacts	No potential impacts	No potential impacts
Rail Issues	All of the proposed rail impacts are concentrated at three locations (all north of the I-74/I-75 interchange). There are no rail issues at this location.			
Transit Issues	The project team will coordinate with SORTA to review the impacts of access changes in greater detail in subsequent steps of the PDP. In addition, all alternatives have avoided the transit tunnels to be used for future light/commuter rail.			
Utility Issues	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements. At this particular stage of design, the main point of concern is with major utility transmission facilities.			
ROW Costs	Step 5 level of detail estimates	Not Applicable	\$350,000	\$280,000
Construction Costs	Step 5 level of detail estimates	Not Applicable	\$6,900,000	\$7,600,000

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# Mitchell Interchange Alternatives Comparison Matrix

## Conceptual Alternatives Study PDP Step 5

Impacts/Issues	Impact/Issue Description	MIT-NB	MIT-A
		No Build Plus Minor Improvements	Tight Urban Diamond Interchange
Key Design Issues	The Key Design Issue(s) for each alternative.	Ramp intersections would fail during peak periods.	1) Existing retaining walls would be removed and new walls constructed. 2) Accommodate WB 67 truck turning.
Social & Community Impacts	This includes primarily the impacts to the communities due to proposed access changes.	No noteworthy impacts	No noteworthy impacts
Environmental Justice	While the project is proposed to affect residential parcels in several census tracts, no one tract or environmental justice population bears disproportionate effects.		
Parks & Recreation - Section 4(f)	The consideration of property that is publicly owned parks and recreation lands, wildlife and waterfowl reserves and historic properties.	No potential impacts	No potential impacts
ROW Impacts	The additional amount of ROW (in acres) necessary to meet ODOT standards per alternative.	No potential impacts	1.3 acres
Potential Residential Relocations	The number of residential properties affected by each alternative.	No potential impacts	No potential impacts
Potential Commercial Relocations	The number of commercial properties affected by each alternative.	No potential impacts	No potential impacts
Cultural Resources	Those properties determined to be history/architecture sites requiring further study to determine eligibility for NRHP status.	No potential impacts	No potential impacts
Ecological Resources	Those ecological resources, including aquatic resources, terrestrial habitats and endangered and threatened species potentially impacted.	No potential impacts	90 linear feet of stream impact
Hazardous Materials	Sites recommended for Phase I ESA.	No potential sites	3 potential sites
Noise Quality	Preliminary noise research during the red flag field review and review of existing mapping indicate that there are potential "Activity Category B" noise sensitive land uses present in the study area. Noise sensitive land uses in "Activity Category B" are described as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals. Several of these land uses were identified within the 400-foot boundary used for conducting noise analyses.		
Air Quality	The OEPA/ODOT agreement states that a quantitative CO analysis is recommended for projects that modify existing facilities that cause an increase in Average Daily Traffic of more than 10,000 vehicles between project completion and ten years hence. Based on preliminary traffic numbers, it appears that the ten-year traffic increase will exceed the 10,000-vehicle maximum. As a result, it is anticipated that a quantitative CO analysis will be required.		
Geotechnical Issues	The most significant geologic hazard within the project area is the occurrence of landslides.	No potential impacts	0.1 acres
Rail Issues	All of the proposed rail impacts are concentrated at three locations (all north of the I-74/I-75 interchange). There are no rail issues at this location.		
Transit Issues	The project team will coordinate with SORTA to review the impacts of access changes in greater detail in subsequent steps of the PDP.		
Utility Issues	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements. At this particular stage of design, the main point of concern is with major utility transmission facilities.		
ROW Costs	Step 5 level of detail estimates	Not Applicable	\$885,000
Construction Costs	Step 5 level of detail estimates	Not Applicable	\$12,500,000

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# Norwood Lateral (SR 562) Interchange Alternatives Comparison Matrix

## Conceptual Alternatives Study PDP Step 5

Impacts/Issues	Impact/Issue Description	NOR-NB	NOR-A
		No Build Plus Minor Improvements	Modified Interchange with Additional Ramp Lanes
Key Design Issues	The Key Design Issue(s) for each alternative.	Does not provide additional capacity nor would it provide higher speed ramps on I-75SB ramp curves.	1) Requires closure of Towne Interchange. 2) Potential impacts with overhead RR Bridge. 3) Does not provide higher speed ramps on I-75SB ramp curves.
Social & Community Impacts	This includes primarily the impacts to the communities due to proposed access changes.	No noteworthy impacts	No noteworthy impacts
Environmental Justice	While the project is proposed to affect residential parcels in several census tracts, no one tract or environmental justice population bears disproportionate effects.		
Parks & Recreation - Section 4(f)	The consideration of property that is publicly owned parks and recreation lands, wildlife and waterfowl reserves and historic properties.	No potential impacts	No potential impacts
ROW Impacts	The additional amount of ROW (in acres) necessary to meet ODOT standards per alternative.	No potential impacts	4.9 acres
Potential Residential Relocations	The number of residential properties affected by each alternative.	No potential impacts	No potential impacts
Potential Commercial Relocations	The number of commercial properties affected by each alternative.	No potential impacts	No potential impacts
Cultural Resources	Those properties determined to be history/architecture sites requiring further study to determine eligibility for NRHP status.	No potential impacts	No potential impacts
Ecological Resources	Those ecological resources, including aquatic resources, terrestrial habitats and endangered and threatened species potentially impacted.	No potential impacts	No potential impacts
Hazardous Materials	Sites recommended for Phase I ESA.	No site impacts	5 potential sites
Noise Quality	Preliminary noise research during the red flag field review and review of existing mapping indicate that there are potential "Activity Category B" noise sensitive land uses present in the study area. Noise sensitive land uses in "Activity Category B" are described as picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries and hospitals. Several of these land uses were identified within the 400-foot boundary used for conducting noise analyses.		
Air Quality	The OEPA/ODOT agreement states that a quantitative CO analysis is recommended for projects that modify existing facilities that cause an increase in Average Daily Traffic of more than 10,000 vehicles between project completion and ten years hence. Based on preliminary traffic numbers, it appears that the ten-year traffic increase will exceed the 10,000-vehicle maximum. As a result, it is anticipated that a quantitative CO analysis will be required.		
Geotechnical Issues	The most significant geologic hazard within the project area is the occurrence of landslides.	No potential impacts	No potential impacts
Rail Issues	Rail issues include RR bridges over the expressway north, south and east of the Norwood Lateral Interchange.		
Transit Issues	The project team will coordinate with SORTA to review the impacts of access changes in greater detail in subsequent steps of the PDP.		
Utility Issues	Many utilities exist within the urban setting of the project study area and will most likely require typical, non-complicated modifications to accommodate the proposed highway improvements. At this particular stage of design, the main point of concern is with major utility transmission facilities.		
ROW Costs	Step 5 level of detail estimates	Not Applicable	\$900,000
Construction Costs	Step 5 level of detail estimates	Not Applicable	\$10,300,000

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