REFINED FEASIBLE ALTERNATIVE

REFINED FEASIBLE ALTERNATIVE ANALYSIS

Following a review of the Assessment of Feasible Alternatives report by FHWA and the ODOT Office of Roadway Engineering Services, it was determined that the Recommended Alternative for this project should be more closely aligned with FHWA policy on interchanges. This additional analysis led to the development of the Refined Feasible Alternative.

The Refined Feasible Alternative combines the local access improvements in Feasible Alternative C and the increased regional mobility of improving access between SR 126 and I-75 as in Feasible Alternative B. The Refined Feasible Alternative includes the following elements.

- One lane will be added to Interstate I-75 in each direction with auxiliary lanes where needed to achieve interchange spacing requirements.
- The existing Evendale-Neumann Way collector-distributor system has the highest accident rate of any section of the corridor and will be eliminated.
- The ramps at Cooper Avenue and Mangham Drive will be relocated to Anthony Wayne Avenue and Shepherd Lane, respectively. The GE Loop Ramps will be closed.
- The I-75 northbound to Galbraith Road left exit will be replaced with a right exit connecting with Galbraith Road in its current location.
- A new set of ramps will be added to and from I-75 southbound to Anthony Wayne Avenue. The ramps will be placed at-grade just south of the walled section and Moxy Trucks.
- The Shepherd Lane/I-75 Interchange will be reconstructed as a full interchange, serving both northbound and southbound traffic.
- Necessary capacity improvement to existing interchange ramp terminal intersections to accommodate future traffic.
- Improvements to the SR 126 and I-75 interchange (see analysis below)

While most of these improvements have been analyzed as part of Feasible Alternative C, the improvements to the SR 126 and I-75 Interchange needed to be further investigated. The addition of two of the three missing movements to the SR 126 interchange was evaluated with Feasible Alternative B, but their configuration was opposed by the communities because it would require the closure of the Galbraith Road ramps. The increased regional mobility they provided, however, was desired by some members of the public as evidenced by the comments received during the July 2006 public involvement meeting. Therefore, the Refined Feasible

Alternative allowed for the evaluation of different options to provide the missing SR 126 movements, while at the same time preserving Galbraith Road access to the interstate. These options provide increased regional mobility, but also strive to achieve compatibility with the communities.

SR 126 IMPROVEMENT OPTIONS

Ideally, when connecting two major transportation systems such as an interstate facility and an arterial roadway, a free flow interchange design is preferred, according to design guidelines. In the case of I-75 and SR 126, a free flow interchange design, as in Feasible Alternative B, would require the disruption of access between the interstate and Galbraith Road due to proximity. Many citizens stated that if there was a choice between access to Galbraith Road and access to SR 126, they would choose Galbraith Road. Both ODOT and FHWA understand the public concerns, but also believe a more direct connection from the interstate to SR 126 is necessary for improved regional travel throughout the Greater Cincinnati area.

Therefore, other options to achieve improved operations and connectivity were investigated and evaluated. A summary of these options are discussed below. More detailed design information and engineering exhibits of the options can be found in Appendix F of this report.

Southbound At-Grade Option

The I-75 southbound to SR 126 westbound at-grade option would connect the two freeways via an at-grade intersection at Galbraith Road. A C-D road would be constructed to serve the Anthony Wayne Avenue, Galbraith Road, and SR 126 traffic. Motorists desiring SR 126 westbound would travel on a newly constructed ramp, while motorists desiring SR-126 eastbound would turn left at the intersection and use the existing access from Galbraith Road. Access to I-75 southbound will be maintained via the existing ramp. It is anticipated that this option would require the acquisition of one apartment building containing 20 to 39 units.

The construction cost for this option is approximately $3 million. The ROW costs are estimated at approximately $1 million. Therefore the total cost for the southbound at-grade option is $4 million.

Southbound Pass-Under Option

The southbound pass-under option would connect I-75 southbound with SR 126 westbound via a newly constructed ramp under existing Galbraith Road and then proceeding to SR 126. A C-D road would be constructed from the Anthony Wayne ramps to serve Anthony Wayne Avenue, Galbraith Road and SR 126 traffic.

This option would require the reconstruction of the Galbraith Road structure over I-75, the acquisition of one apartment building containing 20 to 39 units, the temporary closure of Galbraith Road, as well as the relocation of an existing transmission tower. Due to the greater impacts and cost ($18.2 million) for this option versus the At-Grade Option, it was found not reasonable for further analysis by ODOT and FHWA on February 1, 2007.

Northbound Flyover Option

The northbound flyover option proposes a new ramp from SR 126 westbound to I-75 northbound which is constructed over the Mill Creek and Galbraith Road. This option will affect two businesses on Galbraith Road and a driveway east of I-75 connecting to Clark Street. In addition, the access from Galbraith Road to SR 126 westbound would be eliminated due to the proximity of the ramps and the merge distances. The access between Galbraith Road and SR 126 westbound would be accommodated at the Galbraith Road/I-75 southbound exit ramp intersection.

This option would also require the I-75 northbound exit to Davis Street to be closed due to the length of tapers required to allow vehicles on all of the northbound ramps to properly merge with through traffic on I-75.

The construction cost of this option is approximately $6.2 million. Total ROW costs are estimated at approximately $500,000. The total cost of this option is approximately $6.7 million.

Northbound At-Grade Option

The northbound at-grade option would connect SR 126 westbound to I-75 northbound via an at-grade intersection with Galbraith Road. Access to the interstate from both SR 126 and Galbraith Road would enter through one on-ramp. This ramp would be constructed over the Millcreek and then must meet with existing Galbraith Road.

When additional engineering investigation requested by ODOT and FHWA determined that the desired improvement from a direct connection from SR-126 westbound to I-75 northbound could be reasonably provided by the "Northbound Flyover" option, the operationally deficient Northbound At-Grade Option was eliminated from further consideration.

Summary

Based on the preliminary analysis, the southbound at-grade option and the northbound fly-over option were advanced for inclusion in the Refined Feasible Alternative.

Refined Feasible Alternative Advancement

Option	Meets Vertical Standards	Meets Horizontal Standards	Costs	Impacts
Southbound At-Grade **ADVANCE**	Yes	Yes	$4 million	▪ Relocation of one apartment building ▪ The impacts are similar to Feasible Alternative C
Northbound Flyover **ADVANCE**	Yes	Yes	$6.7 million	▪ Relocation of two businesses on Galbraith ▪ Closure of Galbraith Road to SR 126 westbound ramp ▪ Closure of Davis Street exit ramp
Southbound Pass-Under **ELIMINATE**	Yes	Yes	$18.2 million	▪ Relocation of transmission tower ▪ Reconstruction and extension of the Galbraith Road bridge
Northbound At-Grade **ELIMINATE**	Yes	Yes	$5.2 million	▪ Relocation of three businesses on Galbraith ▪ Construction of ramp over the Millcreek

REFINED FEASIBLE ALTERNATIVES EVALUATION

Project Goals

The traffic analysis of the Refined Feasible Alternative is most similar to Feasible Alternative B. Both the Refined Feasible Alternative and Feasible Alternative B produce an increase in traffic volumes due to additional access between SR 126 and I-75. In Feasible Alternative B, the direct connection between SR 126 westbound and I-75 northbound resulted in an increase of approximately 250 vehicles during the morning peak hour and approximately 160 vehicles in the evening peak hour.

The Refined Feasible Alternative includes the safety improvements listed in Alternative A and C, while at the same time providing additional access to the interstate. For example, the Refined Feasible Alternative includes removing the C-D system and its at-grade intersections between Shepherd Lane and Glendale-Milford Road. This area has the highest accident rate in the corridor at 16 times the Ohio statewide average. Acceleration and deceleration lengths will be improved to meet design standards as well. Because the most troublesome safety areas are improved, it can be concluded that the Refined Feasible Alternative will improve safety on I-75.

The Refined Feasible Alternative increases regional mobility much like that of Feasible Alternative B. It provides new access to SR 126 and a connection to Greater Cincinnati.

The Refined Feasible Alternative balances the needs of local communities with the needs of the interstate and the region. It provides the regional access that many desire, along with preserving the access to Galbraith Road. One compromise with the local communities, however, is the closure of the northbound exit to Davis

Street. While the City of Reading understands the spacing issues which require the closure of Davis Street, they have expressed concerns with the accessibility of I-75 to their community.

Potentially Affected Properties

The relocations and partial acquisitions associated with the Refined Feasible Alternative are similar to those of Alternative C, along with the possible acquisition of two businesses on Galbraith and an apartment building adjacent to the new C-D road connecting Shepherd Lane, Anthony Wayne and Galbraith Road.

Potentially Affected Environmental Resources

The impact to environmental resources is equivalent to those in Alternative C, along with an additional crossing of the Mill Creek of the SR 126 westbound to I-75 northbound ramp.

Potentially Affected Community Resources

While the impact to community resources is similar to Alternative C, the Refined Feasible Alternative does require the acquisition of two additional businesses in Arlington Heights, a veterinary office and a car rental establishment. In addition, the ramp from I-75 northbound to Davis Street will be closed due to proximity to the SR 126 ramps. While access to the communities of Lockland, Arlington Heights and Reading remains adequate at other locations, the loss of Davis Street will be an adjustment.

Project Cost

The costs of the Refined Feasible Alternative is approximately $10.7 million more than Feasible Alternative C for a total project cost of $231 million. As with all of the Build Alternatives, the allotted project budget is exceeded by the Refined Feasible Alternative. Therefore, as further design details are developed, a prioritization and phasing plan will be required.