I-75 Mill Creek Expressway

Planning Study Report

June 10, 2005

Prepared for:

Prepared by:

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HAM-75-2.30 (PID 76257)

EXECUTIVE SUMMARY

The I-75 Mill Creek Expressway study is being conducted under ODOT's Project Development Process (PDP) for Major Projects. This report documents the results of Steps 1-4 of the process, typically referred to as the "planning phase." This report includes summaries of studies produced in these steps, including the Public Involvement Plan, Red Flag Summary, Existing and Future Conditions Report, and Draft Purpose and Need Statement. In addition, this report documents the identification and evaluation of Conceptual Alternative Solutions ("concepts") along with recommendations for concepts to be carried forward to Step 5 of the PDP. Review and acceptance of this report will conclude Step 4 of the PDP.

Background. In 2000, the Ohio-Kentucky-Indiana Regional Council of Governments (OKI) and the Miami Valley Regional Planning Commission (MVRPC) cooperated on a regional multi-modal transportation plan named the North South Transportation Initiative (NSTI). The primary focus of the NSTI was to determine how to improve the safety, efficiency and reliability of transportation networks within Southwest Ohio, Northern Kentucky and Southeast Indiana. Analysis of the existing and future travel corridors was combined with input obtained from stakeholders and the public. As a result, several projects were established to address the original focus of the NSTI. One of the most important corridors established by the public and stakeholders was Interstate 75. The I-75 Mill Creek Expressway study builds upon this major investment study and refines the recommendations within this portion of the I-75 corridor.

The I-75 Mill Creek Expressway Study focuses on I-75 from the interchange with Western Hills Viaduct to the interchange with Paddock Road. This section of I-75 includes the interchanges with Hopple Street, I-74, Mitchell Avenue, Norwood Lateral (SR 562), Towne Street and Paddock Road. In order to properly evaluate options at I-74/I-75, the study also includes the adjacent Colerain/Beekman interchange on I-74.

Purpose and Need. Data collection and technical analyses performed for the Draft Purpose and Need Statement and Existing and Future Conditions Report revealed substantial traffic, safety, and physical deficiencies within the existing roadway corridor.

Traffic - By 2030, nearly all of I-75 through the study area is projected to function at Level of Service F in the a.m. or p.m. design hour, or both.

Safety - I-74, I-75 and SR 562 in the I-75 Mill Creek Expressway study area appear on ODOT's Safety Hot Spot list. Additionally, many segments on these routes appear on the HCLIS list. The segment on I-74 from SLM 18.49 to 18.99 ranks first on that list and the segment on SR 562 from SLM 0.56 to 1.06 ranks second. I-75 within the study area experiences a crash rate of 3.697 accidents per million vehicles miles traveled. On I-74, the crash rate is 3.022 acc/mvmt. For SR 562, the crash rate is 2.951 acc/mvmt. These rates are more than twice the statewide average rate for facilities of their type. The high crash rates contribute to congestion levels even higher than those expected based upon traffic volumes alone.

Physical Condition - Since the I-75 Mill Creek Expressway construction dates from the 1950's and 1960's, lower speed curves, left-hand exit ramps, poor lane continuity, and undesirable service ramp locations are prevalent throughout the corridor. These substandard physical conditions contribute to accidents and to congestion problems.

The purpose of the I-75 Mill Creek Expressway study is to efficiently serve existing and future traffic volumes, reduce the number and severity of collisions, and correct substandard physical conditions that contribute to these problems.

Conceptual Alternative Solutions. In Step 3 of the Project Development Process, the Project Team and Implementation Committee developed several Conceptual Alternative Solutions to address the identified needs. These concepts were developed by the project team, reviewed by ODOT, and presented to the Implementation Committee on March 14, 2005. The team met with geometric design specialists from ODOT's Office of Roadway Engineering Services on March 16, 2005, to obtain opinions on the interchange concepts. In addition, the team met with the City of Cincinnati on March 24, 2005, to discuss each interchange area in more detail. Comments have been reflected in the development and evaluation of the concepts presented in this report.

Several concepts were considered for the I-75 Mainline and each interchange location. The options that have been recommended for further consideration in Step 5 include:

I-75 Mainline:

- I-75-NB – No Build. Minor improvements with no added capacity.
- I-75-A – Four Lane Continuity with Auxiliary Lanes.
- I-75-B – Five Lane Continuity.
- I-75-C – Four Lane Continuity with Elevated Express Lanes.

Hopple:

- HOP-NB – No Build.
- HOP-A – Tight Urban Diamond Interchange (TUDI)
- HOP-B – Offset Roundabout Diamond Interchange

I-74/I-75:

- I-74-NB – No Build.
- I-74-A – Fully Directional Interchange with Local Access
- I-75-B – Fully Directional Interchange with No Local Access

Colerain/Beekman:

- COL-NB – No Build
- COL-A – Low Impact Improvement/Full Movement Interchange
- COL-B – Double Roundabout Diamond Interchange (DRDI)

Mitchell:

- MIT-NB – No Build.
- MIT-A – Tight Urban Diamond Interchange (TUDI)

Norwood Lateral:

- NOR-NB – No Build.
- NOR-A – Modified Interchange with Additional Ramp Lanes

Towne:

- TOW-NB – No Build.
- TOW-A – Interchange closed.

Paddock:

- PAD-NB – No Build.
- PAD-A – Low Impact Spot Improvements
- PAD-B – Double Roundabout Diamond Interchange (DRDI)

Each of these options will be examined in greater detail based upon traffic modeling for mainline alternatives and Step 5 engineering and environmental evaluations. Public input will be combined with technical results to determine the preferred alternative at the end of Step 6.

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