

Functional Classification

Roadway	Classification	Bridge
I-75	Interstate	N/A
Harrison Avenue	Collector	MAINLINE
Western Hills Viaduct	Principal Arterial	OVERHEAD
Central Pkwy	Principal Arterial	NONE
Marshall Avenue	Local	MAINLINE
W. McKicken Avenue	Principal Arterial	NONE
Spring Grove Avenue	Minor Arterial	NONE
Hopple Street	Principal Arterial	OVERHEAD
MLK Boulevard	Principal Arterial	NONE
Bates Avenue	Collector	OVERHEAD
Monmouth Street	Local	OVERHEAD
Ramp G, IR-74	Interstate	MAINLINE
Ludlow Viaduct	Principal Arterial	OVERHEAD
Clifton Avenue	Minor Arterial	MAINLINE
W. Mitchell Avenue	Principal Arterial	MAINLINE
Vine Street	Principal Arterial	MAINLINE
Norwood Lateral (SR 562)	Other Freeway/Expy	N/A
Murray Road/Laidlaw Avenue	Collector	MAINLINE
Towne Street	Minor Arterial	MAINLINE
Seymour Avenue	Minor Arterial	OVERHEAD
Paddock Road	Principal Arterial	OVERHEAD

**JOINT TECHNICAL MEMO
EVALUATION OF POTENTIAL BENEFITS AND IMPACTS
FOR 5-LANE CONTINUITY ALTERNATIVE**

HAM-75-2.30 (PID 76257)
HAM-75-10.10 (PID 76256)

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M-E COMPANIES
ODOT DISTRICT 8

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INTRODUCTION

The Ohio Department of Transportation (ODOT) is considering safety and capacity improvements to the I-75 corridor in Hamilton County as part of the I-75 Mill Creek Expressway project (HAM-75-2.30) and the I-75 Thru the Valley project (HAM-75-10.10). These projects are currently in Steps 5 and 6, respectively, under ODOT's Project Development Process (PDP). In Step 5, the PDP focuses on development and evaluation of conceptual alternatives. Only those alternatives that are truly considered feasible - reasonable to construct - are supposed to be given more detailed evaluation in Step 6.

One of the primary goals of each project is to reduce congestion. As a part of these efforts, conceptual alternatives have been developed for the I-75 mainline and the interchanges within the project limits. For the purposes of this memo, all discussion refers to the mainline options.

Existing I-75, from its interchange with I-74 to the north, has three lanes in each direction. South of I-74, the existing route has four lanes in each direction. In addition to improving ramp terminals and merges, additional through lane capacity is needed. Both project teams are considering the "four-lane continuity" alternative, as suggested by the North South Transportation Initiative, but it is recognized that this option will not meet design standards for Level of Service (LOS), by failing to provide for LOS D for the design hour in the design year throughout the project limits.

Therefore, the team has been requested to evaluate a second additional through lane, providing five lanes in each direction, known as the "five-lane continuity" option. This memo will illustrate the benefits and consequences of this option by presenting the preliminary findings, beginning with travel demand and trip diversion for the corridor as a whole. Then, each project will be discussed separately in terms of levels of service, impacts and cost, based upon available data in each project area. The goal is to provide adequate information to conclude whether this option should be dropped from further consideration or be carried forward as feasible into Step 5 and 6 engineering.

TRAVEL DEMAND AND DIVERSION OF TRIPS

In order to coordinate the traffic projections for all of the three adjoining I-75 projects (*HAM-71-0.00 Brent Spence Bridge*, *HAM-75-2.30 Mill Creek Expressway* and the *HAM-75-10.10 Thru the Valley*), ODOT assembled a Modeling Advisory Committee (MAC). In accordance with the direction of the MAC, a 30th highest hour adjustment factor of 1.056 was developed for use on all three projects. This factor was applied to 2004 peak hour counts to determine the 30th Highest Hour for each movement. The 30th Highest Hour adjustments were validated for 2004 traffic on all three projects. A March 9, 2005 memo from Burgess & Niple, Inc. (B&N) provided the adjustment methodology for developing the 2030 30th highest hour ramp volumes using 2004 30th Highest Hour as a starting point. 2004 and 2030 Tranplan travel demand model outputs for each ramp were used, in accordance with the methodology, to calculate the growth or shrinkage to the 2030 level.

Select link analysis of the southbound exit ramp to Neumann Way in the AM peak hour was used to resolve a noted anomaly in 2030 morning traffic at this ramp. The March 9th memo also supplied the 2030 I-75 "Master Link" volume for the I-75 link between Paddock Road and State Route (SR) 126. The Master Link volumes were coordinated for all three projects by B&N and approved by the MAC. The project team used the 2030 Master Link volume and the refined ramp volumes to calculate the 2030 Refined Baseline No Build peak hour traffic volumes. Using the 2030 Refined Baseline No-Build Volumes for the AM and PM peak hours as a basis, ramp and mainline volumes were hand-adjusted for each conceptual mainline alternative.

In addition to providing design year volumes for the I-75 corridor projects, B&N, under contract to TranSystems and M-E Companies, utilized the OKI travel demand model ("the model") for the purpose of estimating future traffic volumes on I-75 and surrounding routes within the corridor for the purpose of evaluating the Five-Lane Continuity Alternative. Existing counts, taken in 2004, were used to develop the current year No Build volumes. These results were used to calibrate the model and produce design year No Build volumes according to the methodology described above. Lastly, the model was coded to represent the four- and five-lane options in order to determine how much traffic would increase on I-75 in the widening scenarios due to diversion of traffic from other routes.

The results of this analysis are summarized on the following pages.

The graphic below illustrates the changes in traffic volumes for the four-lane alternative compared to the No Build case. The increases in volumes on I-75 are shown in red. The green bands represent routes where traffic volumes are reduced. The thickness of the band in each area represents the magnitude of increase or decrease in volume. This graphic indicates that trips are diverted primarily from the local arterial system, with modest increases on the Ronald Reagan and the Norwood Lateral, which feed into I-75. There is some diversion shown from I-71, particularly south of the Norwood Lateral.

