

Re-evaluation for I-75 Widening and Reconstruction Project
December 17, 2015

The Michigan Department of Transportation (MDOT), in consultation with the Federal Highway Administration (FHWA), is conducting an administrative re-evaluation of the Environmental Impact Statement (EIS) for the modernization of I-75 from M-102 to M-59 in Oakland County, Michigan, per 23 CFR 771.129(c).

General Project Description & NEPA History

The I-75 Modernization Project is the culmination of over 20 years of planning and design. The purpose and need for the widening and reconstruction of 18 miles of freeway in Oakland County is to improve and increase the capacity of the I-75 roadway, interchanges and ramps to support the mobility needs of local and interstate commerce as well as national and civil defense; and to accommodate existing and future traffic, population and employment growth, land use changes, safety issues and to reduce congestion along the I-75 corridor. The proposed project is in Southeast Michigan Council of Governments (SEMCOG) 2040 Regional Transportation Plan and the 2014-2017 Transportation Improvement Program (TIP).

Current plans are for the entire I-75 Modernization project to be constructed in 8 segments. The I-75 Modernization Project improvements include:

- Constructing a new lane in each direction on I-75 between M-102 and South Boulevard. The new lane would be dedicated to high-occupancy vehicles (HOV) for use during morning and afternoon peak travel periods, and then operate as a regular lane in the remaining hours.
- Reconstructing the remaining three lanes of pavement.
- Upgrading and adding ITS technologies.
- Reconstructing ramp improvements at the I-696 on ramp and 11 Mile Road exit ramp with I-75 northbound (I-696 on-ramp braids over the 11 Mile Road off-ramp).
- Reconstructing the interchanges at 12 Mile Road and 14 Mile Road.
- Modernizing the Square Lake Road interchange.
- Upgrading road geometrics.
- Constructing a new storm water sewer system.
- Replacing pedestrian bridges to meet ADA requirements.
- Replacing all vehicular bridges.
- Incorporating community developed aesthetics.

The first segment to be constructed is I-75 from north of Coolidge Road to north of South Boulevard in Bloomfield Township, Oakland County, which is 2.69 miles in length. Construction is expected to start in 2016.

The planned improvements for the first segment include:

- Constructing an additional HOV Lane.

- Reconfiguring Square Lake Road interchange to include right off- and on-ramps and removal of the left off- and on-ramps.
- Reconstructing existing freeway lanes.
- Replacing bridges (Adams Road, Squirrel Road and Square Lake Road).
- Upgrading existing Adams Road carpool lot.
- Improving the drainage system.
- Connecting the sidewalk with safety paths on Squirrel Road.
- Incorporating community developed aesthetic improvements.

The project's NEPA history includes:

- Approval of a Draft Environmental Impact Statement (DEIS) by FHWA in December 2003.
- Final EIS was approved by FHWA in May 2005.
- FHWA issued a Record of Decision (ROD) in January 2006.
- Engineering Report (ER) for I-75 from South Boulevard to 12 Mile Road was completed for the selected alternative in 2009.
- Engineering Report for I-75 from M-102 to 12 Mile Road was completed for the selected alternative in 2010.
- Interstate Access Justification Report (IAJR) was approved in 2006.
- IAJR Report for Square Lake Interchange Modernization was prepared in November 2015.

Basis for the Re-Evaluation

MDOT is required to perform a re-evaluation of the I-75 EIS before each phase of the project. Per 23 CFR 771.129, a re-evaluation of the NEPA EIS is required prior to FHWA taking an action on the project. A re-evaluation considers changes in the project's design, laws and regulations, and determines as to whether the NEPA document is still valid or needs to be supplemented.

Purpose and Need for the Project ROD

The purpose and need for widening and reconstructing the I-75 Freeway in Oakland County is still valid. The freeway was built in the 1960s and has not received comprehensive corridor improvements since that time. The project's purpose and need is to improve the condition and capacity of the I-75 roadway, interchanges and ramps to support the mobility needs of local and interstate commerce as well as national and civil defense; and to accommodate existing and future traffic within the corridor, population and employment growth, land use changes, safety issues and to reduce congestion along the I-75 corridor.

Condition

The condition of the existing pavement on I-75 varies from fair to poor condition from north of Coolidge Road to north of South Boulevard in the project corridor. The existing conditions are based on the Remaining Service Life (RSL) pavement analysis that was conducted in 2014. The existing pavement will need to be replaced in the future.

The existing structures that will be replaced as part of the first construction segment include:

- NB I-75 over Square Lake Road
- SB I-75 over Square Lake Road
- NB I-75 over Adams Road
- SB I-75 over Adams Road
- Squirrel Road over I-75
- Square Lake Road (I-75 BL) Interchange

The condition ratings for these structures are based on the National Bridge Inventory (NBI) rating scale. The rating scale ranges from 0 to 9, with 0 - being failed condition, 5- being fair condition and 9- being excellent condition. The Northbound and Southbound I-75 structure over Square Lake Road has a rating of 5, while the Northbound and Southbound I-75 structure over Adams Road has a rating of 6. The Squirrel Road structure over I-75 has a rating of 7, while the Square Lake Road (I-75 BL) Interchange has a rating of 5. The structures were last inspected in 2013.

Capacity

Based on a recent traffic analysis (2014) which included a capacity review of the I-75 corridor, the proposed lane addition/HOV lane and other safety improvements are still needed in order to provide additional capacity to support the mobility needs of local and interstate commerce; and to accommodate population and employment growth, address safety issues and reduce congestion along the I-75 corridor. Several tables are included in Appendix B which shows the Existing, No-Build and Build scenarios. The Average Daily Traffic (ADT) has increased with the Build scenario; and the Level of Service (LOS) at I-75 and Square Lake Road Interchange has improved.

Changes in Design

Since the completion of the EIS/ROD and ER, MDOT has made several design changes that will address safety concerns on the Square Lake Ramps. Two of the Square Lake Road interchange ramps will be modernized from left-on and left-off to right-on and right-off. In the FEIS, the right-on and right-off ramps were studied; however, based on information from that initial review, it was decided to keep the left-on and left-off ramps due to potential right-of-way concerns at the time. However, during the ER, a more in-depth analysis has occurred and the right-on and right-off ramps were studied in depth, and it was determined that additional right-of-way would not be needed and the interchange could be modernized. Based on the results of this analysis, the right-on and right-on ramps were documented in the ER and further studied and updated in the recently submitted IAJR (2015) for approval. The 2035 traffic was updated and is included in Appendix C.

On Squirrel Road, a safety path (sidewalk) will be added to the new bridge and will connect to an existing safety path (sidewalk) on the west side of the roadway to accommodate non-motorized pedestrians. The history of the design changes are shown in **Table 1**.

**Table 1
Design Changes**

ELEMENT	EXISTING (TODAY)	FEIS (2005)	ER (2009)	D/B (2015)
Square Lake Ramps	Left exit/entrance ramps (NB I-75 exit ramp to WB Square Lake & EB Square Lake entrance ramp to NB I-75)	Studied & remained as existing condition	Both ramps changed to right exit/entrance ramps	Both ramps changed to right exit/entrance ramps
Speed Limit	70 mph posted	65 mph posted Design speed 70 mph	70 mph posted Design speed 75 mph WB Square Lake Road exit ramps design speed 55-65 mph EB Square Lake Road entrance ramps design speed 65 mph	70 mph posted Design speed 75 mph WB Square Lake Road exit ramps design speed 55-65 mph EB Square Lake Road entrance ramps design speed 65 mph
Location of Design-Build Limits	N/A	N/A	South of M-59 to north of Adams Road	Added approximately ¼ of a mile south of Adams (to just north of Coolidge) due to design issues, construction complexity and to not impact the local neighborhoods in successive construction years
Safety Path (Squirrel Rd Bridge)	West side of Squirrel Road both N and S of I-75, but does not exist over I-75 (on bridge)	No sidewalk, shoulder, or handicap access for Squirrel Adding shoulder to Squirrel Road Bridge	Sidewalks on new bridge	Sidewalks on new bridge will connect with now existing safety path (sidewalks)
Enforcement Area	N/A	Not mentioned	Not mentioned	Added to median south of Square Lake interchange
Adams Underclearance	Posted NB and SB structures over Adams 14'-3"	Bridges under I-75 14'-6" minimum	Designed to 14'-9"	Updated to 16'0" per standards

Right of way

The first segment of the I-75 Modernization Project will not require fee right-of-way.

Wetland Impacts and Mitigation

In the Square Lake Road interchange, between 0.41 to 0.87 acres of Palustrine Emergent (PEM) and Palustrine Shrub/Scrub (PSS) wetlands will be directly affected by the project. The impacted wetlands will be mitigated at a 1.5 to 1 ratio. Approximately 0.62 acres of wetlands have been credited to a mitigation site that was constructed in Armada Township in Macomb County, Michigan. The Michigan Department of Environmental Quality (MDEQ) approved the use of the Armada site in a letter dated December 21, 2004. The letter was included in the FEIS (Section 6.4, Letter 6c). The permit was issued by MDEQ in September 2015.

Culvert Replacement

Two existing culverts within the Sprague Drain and Amy Drain will need to be removed and replaced. The removal and replacement of the culverts was included in the Final Environmental Impact Statement and are included in the permit that MDEQ issued.

Tree Removal

Mature trees that are determined to be desired and healthy will be preserved within MDOT's right-of-way (principally at fence lines), where safety requirements are met. Property owners will be notified before any trees in front of their residences are removed and will be offered replacement trees. Native vegetation will be considered in plantings, wherever possible.

Maintaining Traffic during Construction

During construction of the first segment, two lanes of traffic on I-75 will remain open in each direction.

Air Quality

The re-evaluation of the Air Quality analysis was conducted for the entire I-75 Corridor.

A re-analysis of the I-75 Modernization air quality analysis (2003) was completed to confirm that it meets current conformity requirements as defined in the 1990 Clean Air Act, as amended. There had been significant regulation and air emissions model changes for determining project level air quality conformity since the signing of the Final Environmental Impact Statement (FEIS) in May 2005. The details of the analysis are presented in the accompanying Air Quality Report.

The EPA introduced a new emissions model titled the Motor Vehicle Emissions Simulator (MOVES) in 2010 and mandated its use after December 20, 2012 for coarse and fine particulate matter (PM₁₀ and PM_{2.5} respectively) and carbon monoxide (CO) quantitative hot-spot analysis.

Interagency consultation is a necessary element in determining whether a project is one of local air quality concern and, if so, to choose the methods and models in the hot-spot analyses. The EPA simultaneously mandated quantitative mobile source air toxics (MSAT) project level analysis using the MOVES model. FHWA's "Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA" provides procedures for conducting an MSAT analysis. The reanalysis considered carbon monoxide (CO), fine particulate matter (PM_{2.5}) and mobile source air toxics (MSAT).

For the CO analysis, the intersections with the highest traffic volumes and the worst Level of Service (LOS) were analyzed using the Federal Highway Administration (FHWA) "CO Tool." The results were found to be within the acceptable range, meaning there could be a categorical finding that CO is not an issue. This means a more detailed quantitative hotspot analysis using CAL3QHC modeling is not needed. The Southeast Michigan Council of Governments (SEMCOG) Inter-Agency Working Group (IAWG)¹ determined on May 27, 2014 that the use of the CO categorical hot-spot finding is appropriate for the project, verifying the analysis. This finding is consistent with the finding in the FEIS.

PM_{2.5} represents a class of fine particulate matter that is a health risk. At its meeting on October 29, 2013, the IAWG determined the I-75 Modernization Project to be "not of local air quality concern." As a consequence of the IAWG finding, no PM_{2.5} hot-spot analysis is required. PM_{2.5} was not subject to analysis at the time of the FEIS.

The MSAT emissions analysis followed the procedures outlined in FHWA's "Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA." The analysis concludes that reductions in MSAT emissions will occur in the project area regardless of whether the project is constructed. Small differences in emissions will occur between the Build and No-Build scenarios. However as compared to 2010 levels, emissions are reduced by 86 percent in the Build scenario and 82 percent in the No-Build scenario. At the time of the FEIS no method had yet been developed to calculate air toxics.

With the addition of capacity, geometric design improvements and general modernization of the corridor, the I-75 Modernization Project will not degrade air quality within the project corridor, which is supported by the results of the federally required analyses completed and reevaluated. The improvements will allow traffic to move more efficiently with less congestion, resulting in improved air quality within the corridor.

¹ The SEMCOG transportation conformity process is overseen by the Inter-Agency Working Group (IAWG). This group is composed of representatives from the Federal Highway Administration, the Federal Transit Administration, the U.S. Environmental Protection Agency, the Michigan Department of Environmental Quality, the Michigan Department of Transportation and The Southeast Michigan Council of Governments (SEMCOG). Whenever SEMCOG's long-range plan or Transportation Improvement Program is developed or amended, the IAWG meets to determine whether a new conformity analysis is needed and, if so, which specific projects must be analyzed. The final determination on whether any particular project must be analyzed rests with the IAWG.

Noise

The re-evaluation of the noise analysis was conducted for the entire I-75 Corridor. In the first construction segment there will be no additional noise walls built and the existing noise walls will not be impacted.

A reevaluation of the I-75 Modernization noise abatement analysis (Traffic Noise Analysis Report - January 2015) was completed to confirm that the abatement recommended in the January 2006 Record of Decision (ROD) met the revised 23 CFR 772 (2010) and *MDOT Highway Noise Analysis and Abatement Handbook* (MDOT Noise Handbook), implemented in July 2011. The most noteworthy changes in 23 CFR 772 included expanding the Noise Abatement Criteria from five to seven land use categories, how dwelling unit equivalents (DUE) are calculated, how “feasibility and reasonableness” are determined, and the required use of the FHWA Traffic Noise Model version 2.5 (TNM2.5). The details of the reevaluation analysis are presented in the accompanying Traffic Noise Analysis Report and conform to the MDOT Noise Handbook.

This updated analysis used a newer version of the Transportation Noise Model (TNM), Version 2.5, rather than Version 2.1. The newer version has been widely vetted and found to be more accurate than the earlier version. The horizontal and vertical clearance of the design has been refined since the FEIS, and traffic projections have changed, but not significantly. The speed limit is higher in the north end of the corridor than the previous 2005 analysis.

This analysis found earlier walls are still feasible and reasonable. Exceptions include locations where post ROD engineering shifted ramps in such a way that the ramps occupy the space where a wall had previously been planned. **Table 2** (next page) illustrates the abatement changes in the re-evaluation from the FEIS/ROD. The table lists the noise walls found to be feasible and reasonable in the ROD in the second column. The next column explains why a change occurred. The last column provides the current status with the updated analysis.

The total noise wall construction length at the time of the ROD was 4.9 miles. With this analysis, the wall length has increased to 7.3 miles. In some cases, new walls were identified and some walls formerly considered separately were combined in a way that abatement criteria are still met.

The revised 23 CFR 772.13(g) (3) requires the inclusion of the following statement of likelihood with the recommended abatement.

Statement of Likelihood

Based on the studies thus far accomplished, the Michigan Department of Transportation intends to install highway traffic noise abatement in the form of barriers listed in **Table 2**. The preliminary indications of likely abatement measures are based on preliminary design for barrier costs and noise reduction as reported in Section 5 of the accompanying Traffic Noise Analysis Report. If it subsequently develops during final design that these conditions have substantially changed, the abatement measures might not be provided. A final decision of the installation and aesthetics of the abatement measures will be made upon completion of the project’s final design and the Context Sensitive Design process.

**Table 2
Noise Wall Analysis Results**

SEGMENT	WALLS APPROVED IN ROD	COMMENTS	WALLS APPROVED IN UPDATED ANALYSIS
1 8 Mile to Meyers	Wall 0 - NB1	Wall 0 – NB1 gets split by redesigned ramp to become Seg1 NB1 and NB2	Seg1 NB1 Seg1 NB2
	Wall 1 - SB1	Wall 1 – SB 1 cannot be built due to redesigned ramp	
2 Meyers to 9 Mile	Wall 17 - NB Church & Wall 2 – NB1	Wall 17 – NB 1 and Wall 2 – NB 1 are combined into Seg2 NB1	Seg2 NB1
		Seg2 NB2 is a new wall added by updated analysis	Seg2 NB2
		Seg2 SB1 is a new wall added by updated analysis	Seg2 SB1
3 9 Mile to Woodward Heights		Seg3 NB 1 is a new wall added by updated analysis	Seg3 NB1
	Wall 3 – SB1	Wall 3 – SB 1 is lengthened	Seg3 SB1
4 Woodward Heights to I-696	Wall 4 - NB Church	Wall 4 - NB Church is lengthened	Seg4 NB1
	Wall - SB2	Wall SB 2 is lengthened	Seg4 SB2
5 1-696 to 11 Mile	Existing Walls	New walls replace existing walls	Seg5 NB5, NB6 & NB7
5a 11 Mile to Gardenia	Existing Walls	South ends of existing walls are removed as redesigned ramps shift south. Seg5a NB2 replaces much of an existing wall.	Seg5a NB2
6 Gardenia to 12 Mile		Seg6 NB1 is a new wall added by updated analysis	Seg6 NB1
	Wall 7 - SB1	Wall 7 - SB 1 is lengthened	Seg6 SB1
7 12 Mile to 14 mile	Wall 8 - NB1 & Wall 9 NB2	Walls almost same as before	Seg7 NB1 & Seg7 NB2
8 14 Mile to Rochester Road	Wall 10 – SB1	Wall same as before	Seg8 SB1
9 Rochester Road to Livernois	Wall 11 - NB1 & Wall 12 - NB2	Walls almost same as before	Seg9 NB1 & NB2
	Wall 13 - SB1 & Wall 14 – SB2	Walls almost same as before	Seg9 SB1 & SB2
10 Livernois to Wattles	Wall 15 - SB1	Wall same as before	Seg10 SB1
11a Wattles to Crooks		New wall added in updated analysis in section not covered by FEIS	Seg11a NB1
		New wall added in updated analysis in section not covered by FEIS	Seg11a SB1
11 Crooks to Coolidge	Wall 16 - SB1 & SB2, plus Wall 18 – SB3	Walls almost same as before	Seg11 SB1, SB2, SB3 & SB4

Northern Long-Eared Bat and the Indiana Bat

The first segment of the I-75 Modernization Project will require the removal of tree(s) that could provide roosting habitat for the listed Indiana Bat (*Myotis sodalis*) and the Northern Long Eared Bat, consultation under Section 7 of the Endangered Species Act of 1973, as amended is required. (See Appendix D for Consultation letter to the United States Fish and Wildlife Service (USFWS)).

Based upon previous discussions with the FWS and the information known about the species, threshold for “likely to affect, but not adversely affect” have been established. MDOT has recommended the following guidance be used for tree removals:

- 1.) No more than 10% of the suitable habitat for the species will be cut within a half mile buffer surrounding the project.
- 2.) Cutting of more than 10 acres per project is not allowed.

By following these restrictions, potential impacts to the species will be eliminated.

MDOT’s Environmental Specialist and Mitigation Follow-up Specialist will be responsible for tracking the mitigation measures listed below:

- Assume that all trees within the project ROW would be removed.
- All tree removals would be undertaken between the dates of October 1 and March 31 of the year(s) the project is under construction.
- Tree removals would not represent more than 10% of the total forested cover within the ROW and 0.5 mile buffer from the project limits.
- Tree removals will not be greater than a total of 10 acres for any single project.

MDOT has received concurrence from the USFWS indicating that the proposed project “is not likely to adversely affect” the Indiana Bat and the Northern Long-eared Bat under information conference (See Appendix D – Concurrence letter from the USFWS).

Community Developed Aesthetic Improvements

A series of workshops were held with the community in identifying various types of aesthetic improvements for the first phase of the I-75 Modernization Project. Public workshops were held in November 2013, February 2014, and June 2014. Steering Committee meetings were also held with the communities adjacent to the I-75 corridor, on August 2013, October 2013, November 2013, December 2013, March 2014, and May 2014.

Aesthetic improvements for the first phase of I-75 include the following:

- Cross street bridges with decorative wing walls, railings, fencing, pilasters, sidewalks and identifiers.
- Main line bridges with ornamented columns, barrier railings, wing walls, decorative abutment faces, underpass slope paving and sidewalks under roadways.

- Flyover bridge (Square Lake) which is similar to a main line bridge, but with a hammer head style pier.
- Carpool lot with enhancements such as perimeter decorative walls and/or fencing, identifier signing and HOV enhancement/sculpture.
- Corridor landscaping within the freeway right-of-way for interchanges with significant green space and carpool lots.
- Color palette of medium browns and greys.

Changes in Laws or Regulations

There had been significant regulation and air emissions model changes for determining project level air quality conformity since the signing of the Final Environmental Impact Statement (FEIS) in May 2005. In 2010, EPA introduced a new emissions model titled the Motor Vehicle Emissions Simulator (MOVES) and mandated its use after December 20, 2012 for coarse and fine particulate matter (PM₁₀ and PM_{2.5} respectively) and carbon monoxide (CO) quantitative hot-spot analysis. Interagency consultation is a necessary element in determining whether a project is one of local air quality concern and, if so, to choose the methods and models in the hot-spot analyses. The EPA simultaneously mandated quantitative mobile source air toxics (MSAT) project level analysis using the MOVES model. FHWA's "Interim Guidance Update on Mobile Source Air Toxics Analysis in NEPA" provides procedures for conducting an MSAT analysis. The reanalysis considered carbon monoxide (CO), fine particulate matter (PM_{2.5}) and mobile source air toxics (MSAT).

In February 2011, Code of Federal Regulations Title 23 Part 772 (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, was revised. This revision in noise policy and procedures was implemented on July 13, 2011, through revised FHWA guidance and MDOT's *Highway Noise Analysis and Abatement Handbook*. The new regulations require a noise impact and abatement analysis for new or significantly altered highway projects (i.e., new interchange or adding capacity to the interstate).

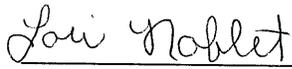
Since the publication of the EIS and Re-evaluation, the U.S. Fish and Wildlife Service (USFWS) listed the northern long-eared bat (*Myotis septentrionalis*; NLEB) as a threatened species under the Endangered Species Act (ESA). In April 2015, the northern long-eared bat was listed as threatened species, where the protections and requirements of the ESA would be effective within 30 days of publication of the Final Rule.

MDOT Finding and Recommendation

There has been no substantive design or regulatory changes affecting the project, and the project still meets its original purpose and need. Based on this re-evaluation of the project, MDOT finds there are no significant changes that would warrant preparation of a new or supplemental EIS. MDOT requests FHWA's concurrence with this re-evaluation and to proceed with the first segment of the I-75 Modernization Project from South Boulevard to north of Coolidge Road in Oakland County, Michigan.

12/17/2015

Date



Lori Noblet
NEPA Coordinator for Mega Projects

12/17/2015

Date



Sue Datta
Senior Project Manager for I-75
Modernization Project

Digitally signed by Sue Datta
DN: cn=Sue Datta, o=MDOT, ou=Executive,
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Date: 2015.12.17 14:41:04 -05'00'

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Russell Jorgenson
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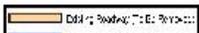
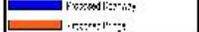
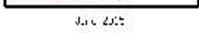
APPENDIX A

Aerial Map of First Segment

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NORTH OF COOLIDGE TO SOUTH BLVD

	Existing Roadway To Be Repaved
	Proposed Primary
	Proposed Interchange

June 2005

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APPENDIX B

I-75 Traffic Information For First Segment

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The following tables contain traffic information for I-75 from mile point 14.967 to mile point 17.132 in Oakland County. Current traffic volumes were calculated from hose counts taken between 2000 and 2014 and 2013 Sufficiency Guide data. A growth rate of 0.5% was used to calculate future traffic volume. This number is based on past growth, regression analysis and population projections in Oakland County.

I-75	Rigid	Flexible
Growth Rate	0.85%	0.85%
Growth Type	Compound	Compound
Initial Yearly 18-kip ESAL (both directions)	2,232,970	1,435,480
Direction Distribution Factor	51%	51%
Lane Distribution Factor	86%	86%
Total 18 Kip Axle Loadings	21,252,970	13,662,620

I-75	2014	2016	2035
Total Average Daily Traffic (ADT)	112,050	113,175	124,425
Directional ADT	56,025	56,600	62,225
% Commercial of ADT	6.5%		

The following tables contain the traffic information for the ramps on I-75 in Oakland County. Current traffic volumes were calculated from hose counts taken between 2011 and 2014. A growth rate of 0.5% was used to calculate future traffic volume. This number is based on past growth, regression analysis and population projections in Oakland County.

Adams Rd NB On	2014	2016	2035
Total Average Daily Traffic (ADT)	3,825	3,850	4,225

Adams Rd NB Off	2014	2016	2035
Total Average Daily Traffic (ADT)	2,600	2,625	2,875

Adams Rd SB On	2014	2016	2035
Total Average Daily Traffic (ADT)	3,600	3,625	3,975

Adams Rd SB Off	2014	2016	2035
Total Average Daily Traffic (ADT)	2,950	2,975	3,275

Square Lake Rd NB On	2014	2016	2035
Total Average Daily Traffic (ADT)	27,250	27,525	30,275

Square Lake Rd NB Off	2014	2016	2035
Total Average Daily Traffic (ADT)	9,100	9,200	10,100

Square Lake Rd SB On	2014	2016	2035
Total Average Daily Traffic (ADT)	7,575	7,650	8,425

Square Lake Rd SB Off	2014	2016	2035
Total Average Daily Traffic (ADT)	18,475	18,675	20,525

Major Diverge Analysis of Existing, No Build and Build

AM Peak Hour - Square Lake BL and I-75 Entering

<i>Alternative</i>	<i>Segment Description</i>	<i>Freeway Entering Lanes</i>	<i>Freeway Entering Volume</i>	<i>Freeway Entering Capacity</i>	<i>V/C</i>	<i>Density</i>	<i>LOS</i>
Existing	SB I-75 to WB Square Lake	4	7,930	9,400	0.84	34.69	D
Existing	NB I-75 to WB Square Lake	3	4,680	7,050	0.66	27.30	C
No Build	SB I-75 to WB Square Lake	4	8,330	9,400	0.89	36.44	E
No Build	NB I-75 to WB Square Lake	3	4,960	7,050	0.70	28.93	D
Build	SB I-75 to WB Square Lake	4	7,600	9,400	0.81	33.25	D
Build	NB I-75 to WB Square Lake	3	4,380	7,050	0.62	25.55	C

PM Peak Hour - Square Lake BL and I-75 Entering

<i>Alternative</i>	<i>Segment Description</i>	<i>Freeway Entering Lanes</i>	<i>Freeway Entering Volume</i>	<i>Freeway Entering Capacity</i>	<i>V/C</i>	<i>Density</i>	<i>LOS</i>
Existing	SB I-75 to WB Square Lake	4	5,550	9,400	0.59	24.28	C
Existing	NB I-75 to WB Square Lake	3	6,170	7,050	0.88	35.99	E
No Build	SB I-75 to WB Square Lake	4	5,890	9,400	0.63	25.77	C
No Build	NB I-75 to WB Square Lake	3	6,470	7,050	0.92	37.74	E
Build	SB I-75 to WB Square Lake	4	5,300	9,400	0.56	23.19	C
Build	NB I-75 to WB Square Lake	3	5,820	7,050	0.83	33.95	D

APPENDIX C

2015 Traffic Update

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To: Sue Datta, AICP

From: Barbara Arens, PE, PTOE
Lauren Warren, PE, PTOE

Date: October 8, 2014

Subject: I-75 at Square Lake Road Interchange Access Justification Report – 2035 Updates

The *I-75 at Square Lake Road Interchange Access Justification Report* (IAJR) was written by URS Corporation in December 2009. The IAJR was written as a supplement to the FEIS document and documented the proposed modifications to interstate access at the I-75/Square Lake interchange. The FEIS document and calculations utilized a build out year of 2025. However, based on required approval from the Federal Highway Administration (FHWA), MDOT and the Southeast Michigan Council of Governments (SEMCOG) the future design year was revised to a build out year of 2035 for an update. Thus, all subsequent reports have used 2035 as the design year. As a result, the original reported volumes and LOS presented in the IAJR need to be compared with those from the approved build year of 2035 to ensure that the analysis remains valid.

The following two tables present the comparisons for mainline and ramps within the I-75/ Square Lake interchange area for the original build year 2025 and the approved build year 2035. The existing 2012 results are also presented for reference. The 2025 results utilized HCS2000 software. However, the 2035 results utilized updated HCS2010 software for the analysis. Very few conclusions changed as a result of this software update.

Table 1 provides the I-75 level of service (LOS) results for the basic freeway segments for the existing 2012, Build 2025, and Build 2035 traffic volumes in the AM and PM peak hours of the day. The LOS results for northbound I-75 between 2025 and 2035 remain the same in both the AM and PM peak hours, with the exception of one segment from northbound I-75 Adams Road to Square Lake Road. In 2025 it was calculated to have a LOS C. In the updated 2035 it is calculated as a LOS D in the PM peak hour. However, it should be noted that the existing 2002 and 2012 calculations also show LOS D. Therefore, the 2035 condition remains the same as the existing condition. The reason for the discrepancy is the original HCS software assessed it as a basic segment. In the updated HCS software it was analyzed as a weave segment. Also traffic volumes between 2025 and 2035 increased. The 2025 northbound traffic projections were for 5,830 vehicles in 2025. The 2035 northbound traffic projections have 6,670 general purpose vehicles and 890 HOV vehicles, resulting in a change in LOS from C to D.

Table 1: I-75 LOS for Basic Segments

Segment Description	AM			PM		
	EXISTING 2012	BUILD 2025	BUILD 2035	EXISTING 2012	BUILD 2025	BUILD 2035
Northbound I-75						
Adams Rd to Square Lake (I-75B) ¹	C	C	C	D	C	D
Between Square Lake (I-75B) Ramps	C	n/a	C	D	n/a	D
North of Square Lake (I-75B)	C	C	C	D	D	D
After end of managed lane		C	C		D	D
Southbound I-75						
Before start of managed lane		F	E		D	C
North of Square Lake (I-75B)	D	n/a	D	C	n/a	C
Between Square Lake (I-75B) Ramps	D	n/a	C	C	n/a	B
Square Lake (I-75B) to Adams Rd ¹	D	D	D	C	C	B

1. Weaving segment in Build.

2. n/a – update (HCS 2010) was not available for the original IAJR.

The LOS results shown in Table 1 for southbound I-75 between 2025 and 2035 improve or were not completed in the previous analysis due to software limitations so they could not be compared. There are two segments that show a LOS improvement. Specifically the segment “Before start of managed lane” in 2025 results in LOS F in the AM peak hour. In 2035, the results show LOS E (AM peak hour). It should be noted that the IAJR report does not differentiate between the segment north of the managed lane and the segment north of Square Lake Road. The updated 2035 analysis does. The previous analysis stated that the LOS for the freeway segment is “*anticipated to improve from LOS F during the design year morning peak hour when the I-75/M-59 interchange is reconstructed and a fifth lane is added to I-75 between M-59 and I-75BL.*” Additionally, there is a decrease in traffic volumes between 2025 (8,690 vehicles) and 2035 (7,640 vehicles; with 6,720 general purpose lane and 920 HOV). Both analyses use 4 lanes for evaluation, as HCS cannot accommodate HOV lanes.

The LOS results from 2025 compared to 2035 for merge, diverge and weave segments remain the same or improve for both the AM and PM peak hours, as shown in Table 2. A key item to note is that following the IAJR report, the Highway Capacity Manual (HCM) introduced calculations to include classifications for a major merge or major diverge. The HCM also included an equation for a major diverge and therefore results are shown for 2035 Build where there were none previously.

Table 2: I-75 LOS for Merge, Diverge, and Weave Segments

Segment Description	Existing / No-Build Segment Type	AM			PM			Build Segment Type
		EXISTING 2012	BUILD 2025	BUILD 2035	EXISTING 2012	BUILD 2025	BUILD 2035	
Northbound I-75								
Adams Rd Loop Exit Ramp	Diverge	C	C	C	D	D	D	Diverge
Adams Rd Entrance Ramp	Merge	C	C	C	D	n/a ³	D	Weave
Square Lake (I-75B) Exit Ramp ¹	Major Diverge	C	C	C	E		D	
Square Lake (I-75B) Entrance Ramp ²	Major Merge							Major Merge
Southbound I-75								
Square Lake (I-75B) Exit Ramp ¹	Major Diverge	D	n/a	D	C	n/a	C	Major Diverge
Square Lake (I-75B) Entrance Ramp ²	Major Merge		n/a	D		n/a	B	Weave
Adams Rd Exit Ramp	Diverge	D	n/a		C	n/a		
Adams Rd Loop Entrance Ramp	Merge	D	D	C	C	C	B	Merge

Notes:

1. Segment is a Major Diverge. LOS manually calculated per HCM 2010 Equation 13-26
 2. Segment is a Major Merge. No effective LOS models for deriving LOS in the HCM 2010
 3. *Missing from IAJR report
- n/a = not available at the time the original IAJR was analyzed

Overall upon comparing the IAJR results from 2025 to the updated build year 2035, the IAJR analysis remains valid as the LOS calculated saw no change or improved, with the exception of one segment where it is predicted a LOS decline back to the existing condition of 2012 and this includes an increase in volumes. This is specifically located at:

- NB I-75 - Adams Road to Square Lake (I-75B) in the PM peak hour; LOS C in 2025 and LOS D in 2035. Existing 2002 and 2012 results also show LOS D.

Therefore, it is recommended that this information be added to the IAJR, as it is not necessary to conduct a new analysis at this time, as the results would remain the same or improve.

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APPENDIX D

U.S. FISH & WILDLIFE SERVICE (Consultation and Concurrence Letters)

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STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

RICK SNYDER
GOVERNOR

KIRK T. STEUDLE
DIRECTOR

5 March 2015

Scott Hicks, Supervisor Fish
and Wildlife Service East
Lansing Field Office
2651 Coolidge Road, Suite 101
East Lansing, Michigan 48823-6360

Dear Mr. Hicks,

The Michigan Department of Transportation, on behalf of the Federal Highway Administration is requesting consultation under section 7 of the Endangered Species Act of 1973, as amended (ACT) for the referenced projects. These projects involve the removal of trees that could provide roosting habitat for the listed Indiana Bat (*Myotis sodalis*) and Northern Long-eared Bat (*Myotis septentrionalis*). The Northern Long-eared Bat (NLEB) is currently proposed for listing under the Act. At present critical habitat has not been designated in Michigan for this species.

The following projects are included for review: 116123. This project includes three bridge replacements at Square Lake Road, Squirrel Road, and Adams Road. These bridges are located in an urbanized area of Oakland County (mostly residential).

Based upon previous discussions with the USFWS and information known about the species, thresholds for "likely to affect, but not adversely affect" have been established. Guidance provided to MDOT recommended that:

- 1.) No more than 10% of the suitable habitat for the species be cut within a half mile buffer surrounding the project.
- 2.) Cutting of more than 10 acres per project is not allowed.

By following these restrictions the USFWS believes that potential impacts to the species will be eliminated.

MDOT Project Analysis Process

- It will be assumed that all trees within the project right-of-way (ROW) would be removed.
- All tree removals would be undertaken between the dates of October 1 and March 31 of the year(s) the project is under construction.
- Tree removals would not represent more than 10% of the total forested cover within the ROW and 0.5 mile buffer from the project limits; or

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- Tree removals will not be greater than a total of 10 acres for any single project. NEPA and Documentation Constraints Mapping.
- The analysis will be based upon growing season imagery of the project area.
- A 0.5 mile buffer will be added to the project limits.
- The ROW lines will be added to the project corridor.
- Suitable habitat for the species will be identified within the buffer area using aerial maps (summer and winter) to determine and delineate forested canopy areas.
- Overlap between the ROW lines and adjacent forested areas within MDOT ROW will be considered as full tree removals.
- The GIS file will be used to calculate the acreage for: potential habitat, habitat to be cut, and the percentage of remaining habitat. This will serve as the determination of potential impact for these bat species.
- In addition to the established thresholds and constraints, a habitat assessment report is attached that was performed by Dr. Allan Kurta. The results and conclusions of his investigation can be found on pages 5 and 6.

MDOT requests concurrence with a finding of “may affect, is not likely to adversely affect” for project 116123 for the Indiana Bat, and for the NLEB under informal conference. If you have any questions or additional comments, please contact me at 517-335-2633.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Malley".

CC: Lori Noblet
Patrick Marchman
Mike O'Malley



United States Department of the Interior

FISH AND WILDLIFE SERVICE

East Lansing Field Office (ES)

2651 Coolidge Road, Suite 101

East Lansing, Michigan 48823-6316

IN REPLY REFER TO:

March 6, 2015

Mr. Jeff Grabarkiewicz
Environmental Services Section
Michigan Department of Transportation
P.O. Box 30050
Lansing, MI 48909

Re: Endangered Species Act Section 7 Informal Consultation for Michigan Department of Transportation Right-Of-Way Projects

Dear Mr. Grabarkiewicz:

Thank you for your letter of March 5, 2015 requesting consultation under section 7 of the Endangered Species Act of 1973, as amended (Act) for Michigan Department of Transportation (MOOT) right-of way (ROW) projects. The proposed project consists of vegetation removal from project ROW and replacement of three bridges at one location in Oakland County (Job #116123).

Your analysis addressed potential effects to the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). You have determined that the proposed project is not likely to adversely affect the Indiana bat or northern long-eared bat and request our concurrence with your determination.

Northern Long-eared Bat

During the summer, northern long-eared bats (NLEB) typically roost singly or in colonies underneath bark or in cavities, crevices, or hollows of both live and dead trees and/or snags (typically >3 inches dbh). This species has also been found roosting in structures, such as barns, sheds and bridges, occasionally (particularly when suitable tree roosts are unavailable). These bats forage for insects in upland and lowland woodlots and tree-lined corridors. During the winter, NLEBs hibernate predominantly in caves and abandoned mine portals.

The NLEB is currently proposed for listing under the Act. Critical habitat has not been proposed at this time. Pursuant to section 7(a) (4) of the Act, Federal action agencies must confer with the U.S. Fish and Wildlife Service if their proposed action is likely to jeopardize the continued existence of a species proposed for listing [50 CFR 402.10(a)]. Action agencies may also voluntarily confer with the Service if the proposed action may affect a proposed species.

Species proposed for listing are not afforded protections under the Act; however as soon as a listing becomes effective, the prohibitions against "take" and jeopardizing the species' continued existence apply, regardless of an action's stage of completion. Should the NLEB become listed and construction

of the proposed project occur after the final listing decision, this concurrence can be used to complete Section 7 consultation for this species, provided the project scope has not changed and all measures to avoid direct take of the NLEB were incorporated into the project. The final listing decision for the NLEB is expected in April 2015.

According to your email, the proposed project may contain suitable habitat for the NLEB, and tree removal will be necessary to maintain the ROW. We concur that the proposed actions are not likely to adversely affect NLEB for the following reasons:

- As concluded by Dr. Kurta, the project area is absent of suitable forested habitat, with roosting and foraging opportunities "both few and low in quality," and therefore, NLEB are unlikely to be affected. Additionally, all trees will be cleared between October 1 and March 31, when NLEB are not present on the landscape. Finally, no more than 10 acres per project will be cut, and no more than 10% of suitable habitat for the species will be removed within a half-mile buffer surrounding the project.
- All three bridges to be replaced are located in an urbanized, predominantly residential area lacking suitable forested habitat; therefore, effects to NLEB would be discountable.

Indiana Bat

In Michigan, summering Indiana bats roost in trees in riparian, bottomland, and upland forests from approximately April through October. Indiana bats may summer in a wide range of habitats, from highly altered landscapes to intact forests. Roost trees vary considerably in size, but those used by Indiana bat maternity colonies are typically greater than 9 inches dbh. Male Indiana bats have been observed roosting in trees as small as 3 inches dbh.

We concur that the proposed actions are not likely to adversely affect the Indiana bat for the following reasons:

- As concluded by Dr. Kurta, the project area is absent of suitable forested habitat, with roosting and foraging opportunities "both few and low in quality," and therefore, Indiana bats are unlikely to be affected. Additionally, all trees will be cleared between October 1 and March 31, when Indiana bats are not present on the landscape. Finally, no more than 10 acres per project will be cut, and no more than 10% of suitable habitat for the species will be removed within a half-mile buffer surrounding the project.
- All three bridges to be replaced are located in an urbanized, predominantly residential area lacking suitable forested habitat; therefore, effects to Indiana bats would be discountable.

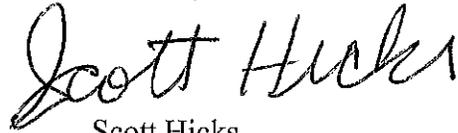
This precludes the need for further action on this project as required by section 7 of the Act. If the project is modified or new information about the project becomes available that indicates listed species or critical habitat may be affected in a manner or to an extent not previously considered, you should reinstate consultation with this office.

Mr. Jeff Grabarkiewicz

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We appreciate the opportunity to cooperate with you in conserving endangered species. If you have any questions regarding these comments, please contact Jenny Bohrman, of this office, at (517) 351-7261 or Jennifer_Bohrman@fws.gov.

Sincerely,

A handwritten signature in black ink that reads "Scott Hicks". The signature is written in a cursive, slightly slanted style.

Scott Hicks
Field Supervisor

cc: Dan Kennedy, MDNR, Wildlife Division, Lansing
Patrick Marchman, Environment and ROW Manager, FHWA, Lansing