

Proposed Resurfacing & Reconstruction of Interstate 70 in Clark County CLA-70-13.98/20.92, PID 83365

Project Description:

The proposed project will consist of a full-depth pavement reconstruction (major rehabilitation) of Interstate 70 (I-70) from east of the State Route 72 (SR 72) interchange (SLM 13.95) to the State Route 40 (SR 40) interchange (SLM 20.92). In order to maintain two lanes of traffic on I-70 during construction, new pavement will be installed within the existing median between eastbound and westbound I-70. Upon completion of the project, the additional pavement will be striped to provide a third 12' thru travel lane in each direction. The project also includes new guard rails and new drainage structures.

The terrain is flat to rolling. The existing roadway in the project area consists of four lanes, two eastbound and two westbound. The eastbound and westbound lanes are separated by a grassy median (combination raised and depressed). Each lane has a width of 12 feet. The paved shoulder on the median side has a width of 4 feet and the paved shoulder on the outside has a width of 10 feet. There are five existing twin mainline and seven overhead structures within the project limits. There are two interchanges (SR 41 and SR 40) within the project limits.

The reconstruction project is expected to be undertaken entirely within existing public right-of-way on existing line and grade. The project will have no involvement with interchange ramps or other roadways along the corridor. All mainline bridges were widened to accommodate the proposed additional pavement in 1996. Other than installation of pier protection at overhead bridges, the project will not include any work on the overhead bridges within the corridor.

The project corridor is predominantly agricultural. Residential development is generally scattered, although moderately dense single-family developments are present along Selma Road, Old Selma Road, and Leffel Lane. The Clark County Fairgrounds and a variety of commercial and light industrial/manufacturing development are present at the State Route 41 (SR 41) interchange.

There are no trees within the project corridor. The project is not located within a designated special flood hazard area. Several unnamed waterways, releasing to tributaries of the Miami River, extend under I-70.

The project is a priority system preservation project to be undertaken with federal and state major rehabilitation funds. The ODOT Office of Systems Planning & Program Management's draft *30 Year Priority System Major Rehab Management Plan* recommends the project segment for major rehabilitation in the 0-10 year horizon.

The vertical profile of I-70 may be modified in several locations to provide the preferred 17' vertical clearance at the overpasses. Both outside and inside shoulders will each have a 12' width. The underdrain system will be replaced on the median side. All traffic guide and regulatory signs will be replaced throughout the project length. There is a potential for culvert lengthening adjacent to the outside lanes at some locations to provide safety grading. Upon completion of the project, the roadway will include three 12' lanes in each direction. The median will be of grass. There is a potential for safety cable rail to be installed within the median. No local monies are involved with this project. Two lanes of traffic will be maintained throughout construction of the project.

Purpose & Need:

The purpose of the proposed project is to address and ensure that adequate pavement condition is maintained on this segment of I-70, a priority system.

Project History: In 2002, the CLA-IR 70-06.75/25.11 project was programmed as a Major New project to address a lack of lane continuity on I-70. Identified Major Rehabilitation projects within the corridor (CLA-IR 70-13.95/29.92 and CLA-IR 70-20.92/25.11) were bundled into this Major New Project for efficiency in design and sale. At that time, I-70 provided six travel lanes west of Enon Road and east of SR 54. The four lane corridor from SLM 6.75 to SLM 25.11 was identified as a bottleneck operating at a Level of Service (LOS) C; the minimum design LOS is rural areas is LOS B. The CLA-IR 70-06.75 project was also intended to address pavement condition and geometric deficiencies at interchanges and underpasses.

In 2005, the rapid deterioration of the concrete pavement section extending from SLM 20.92 to SLM 25.11 dictated that the degraded concrete section be programmed separately with an expedited schedule. This project, currently under construction, includes full depth pavement reconstruction and the addition of a third thru lane in each direction. The CLA-IR 70-20.92, PID 75315 project began construction in summer 2008; construction will be completed in fall 2009.

In 2006, the TRAC over-committed by 47% above stated total program funding levels. This over-commitment combined with the rapid inflation of construction costs placed the funding of many Major New projects in jeopardy; the CLA-IR 70-06.75 was demoted from a Tier I project to a Tier II project. Currently, the Major New Program is expected to have zero allocations beginning in fiscal year 2010 and no Tier II projects are expected to advance to construction in the short term. The CLA-IR 70-06.75 project currently has no committed construction schedule.

Because of the inclusion subject project segment in the CLA-IR 70-06.75 Major New project, the project corridor has not been previously included in the Major Rehabilitation Program.

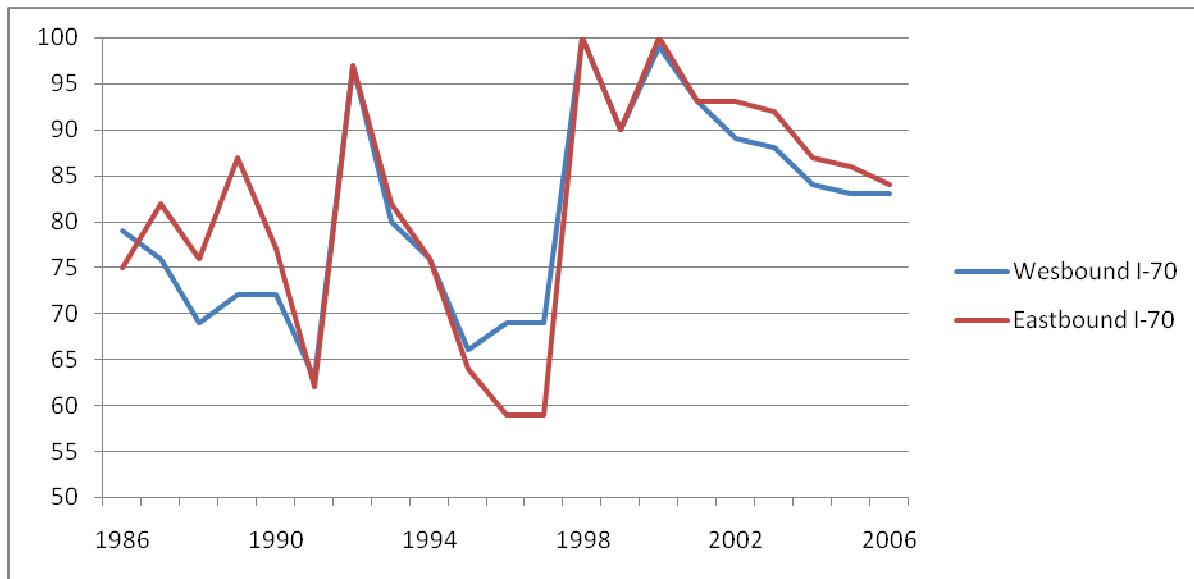
Primary Need - Maintain Adequate Pavement Condition: This section of IR70 is part of the STRAHNET (Strategic Highway Network). STRAHNET is a system of public highways that is a key component in U.S. strategic policy. It provides defense access, continuity, and emergency capabilities for movements of personnel and equipment in both peace and war. It is about 61,000 miles, including the 45,400-mile system of Interstate and Defense Highways and 15,600 miles of other important public highways. STRAHNET connectors (about 1,700 miles) are additional highway routes linking over 200 important military installations and ports to the STRAHNET. These routes are typically used when moving personnel and equipment during a mobilization or deployment. Maintaining the STRAHNET in adequate condition is crucial to national security.

In the ODOT Office of Systems Planning & Program Management's draft *30 Year Priority System Major Rehab Management Plan*, it is recognized that the loss of available allocations for the Major New Program will leave several sections of priority system pavement in poor condition. The plan recommends funding minor rehabilitation of such segments to maintain adequate pavement condition while the Major New Program funding situation is resolved. The *Plan* specifically recommends the CLA-IR 70-13.98/20.92 segment as a new Major Rehabilitation funding commitment within the 0-10 year timeframe; the project segment is priority ranked as 17th of all 93 projects recommended for the 0-10 year timeframe.

A pavement segment is considered poor performing and appropriate for major rehabilitation in the 0-10 year horizon if the segment has had more than 3 three pavement treatments within the past 20 years and if the segment's pavement condition rating (PCR) has dropped by 10 points within one year at least twice in the past 20 years. Such conditions indicate a diminishing return on the investment in preventative maintenance and indicate a need to address the underlying base pavement.

As depicted in the chart below, the eastbound I-70 segment from SLM 13.95 to SLM 20.92 has had 4 preventative maintenance treatments (peaks) in the last 20 years; the westbound segment has had 3 preventative treatments in the last 20 years. The eastbound segment has had five year-to-year PCR declines of 10 or more points (1989-1990; 1990-1991; 1992-1993; 1994-1995, and 1998-1999); the westbound segment has had four year-to-year PCR declines of 10 or more points (1990-1991; 1992-1993; 1994-1995; and 1998-1999). Therefore, the SLM 13.95 to SLM 20.92 segment meets both conditions for major rehabilitation in the 0-10 year horizon.

**Pavement Condition Ratings
Interstate 70 SLM 13.95 to SLM 20.92
1985-2006**



Additionally, based on the rate of decline in pavement condition since 2000, the project segment of roadway is expected to have a pavement condition rating of less than 65 by 2012. Pavement rated lower than 65 is considered deficient and in need of replacement,

Secondary Need – Address Inadequate Maintenance of Traffic of Conditions: ODOT’s Policy for Traffic Management in Work Zones (Policy 516-003(P)) requires that maintenance of traffic during long-term construction projects comply with the Permitted Lane Closure Map (PLCM) for the project segment. The PLCM for IR-70 from SR 72 to SR 54, which includes the project segment, requires that two lanes of traffic be maintained from 6:00 am to 8:00 pm on construction weekdays and from 6:00 am to 9:00 pm.

The existing shoulder widths within the project corridor are inadequate to allow the shoulders to be utilized for maintenance of two lanes of traffic during any necessary routine maintenance and construction activities within the project segment of I-70. Under current conditions, when a portion of the roadway is removed from service for routine maintenance and/or construction activities, traffic must merge into a single-lane. This does not comply with ODOT’s Policy for Traffic Management in Work Zones.

As detailed in the table below, greater than one-third of the traffic within the corridor is heavy trucks. When traffic within this corridor must be reduced to a single lane for roadway maintenance or construction activities, traffic flow is constrained to the speed of the slowest moving vehicle, aggravating the already congested conditions.

Secondary Need – Address Congestion within the Corridor and Advance the Clark County Long Range Plan: The Levels of Service for the project segment of corridor were evaluated as part of the Major New

CLA-IR 70-06.75 project. As detailed in the following table, all segments of the project corridor are expected to operate at less than the ODOT Design Standard LOS C for rural interstates by 2030.

Table 2: Existing and Future Traffic Analysis Data, Interstate Segments

IR70 Segment	DIR	ADT, vehicles per day		% Trucks		4-Lane LOS	
		2010	2030	2010	2030	2010 AM/PM	2030 AM/PM
SR 72 – SR 41	EB	26,990	39,450	38	38	C/C	E/E
	WB	26,990	39,450	38	38	C/C	D/F
SR 41 – US 40	EB	25,040	37,220	39	39	C/C	D/E
	WB	25,040	37,220	39	39	C/C	C/F

As indicated, most of the corridor will operate at a LOS D or lower during peak travel hours in 2030. The higher proportion heavy truck traffic further impedes flow within the corridor. Highway sections which have a LOS of D, E, or F are considered congested and unacceptable for the safe and efficient movement of vehicles. Maintaining acceptable capacity on the STRAHNET is crucial to national security.

In March 2002, a Major Investment Study (MIS) was prepared for the IR-70 Corridor from SR 235 to SR 56 in Clark County. The MIS was prepared by the Clark County-Springfield Transportation Coordinating Committee, ODOT Office of Urban and Corridor Planning and ODOT District 7; the Scoping Committee included a wide range of local, state, and federal agencies. The basic problem identified by the MIS in the corridor was *“The current traffic volumes, especially truck volumes, on some sections of Interstate 70 through Clark County, are at unacceptable levels of congestion, especially during the peak hours. Forecasted traffic volumes, based upon current growth rates and future development will result in additional portions of the route experiencing congestion and unacceptable levels of delay.”* The MIS Scoping Committee considered a variety of alternatives, including various travel demand management strategies, various transportation systems management measures, and the addition of general purpose through lanes.”

The MIS concluded that the Preferred Alternative to address congestion within the Interstate 70 Corridor in Clark County is the addition of General Purpose Through Lanes:

- “After examining each alternative separately and the cumulative effects on service to the corridor of the lower cost alternatives, the preferred alternative was agreed to and subsequently proposed by the Scoping Committee.
- The preferred alternative and the rationale for it being proposed as the preferred alternative was based upon the most realistic estimate of benefits to the corridor over the next 25 years.
- Additional lanes are being planned in Montgomery and Madison counties. The reconstructed I-70/I-75 interchange in Montgomery County will impact the corridor through Clark County.
- Cost estimates for construction and maintenance of this alternative would allow the additional lanes to be phased over a 10 year period with a total cost of \$61,514,000. The length of the proposed improvement would be 26.62 miles. No additional right of way would be required to complete this project.”

As a result of the MIS, the proposed addition of general purpose through lanes is included on the list of short range projects in the *Clark County Transportation Plan: 2030 Horizon Year* (June 2004).

Identification of Logical Termini: The logical termini for the project are the monitored pavement segment; these limits correspond to the limits of the underlying base pavement. The pavement segment to the west only partially meets the criteria for classification as “poor performing” and was not identified for major rehabilitation in the 0-10 year horizon by the draft *30 Year Priority System Major Rehab Management Plan*. The project segment of pavement is expected to be deficient (pavement condition rating <65) by 2012.

Additionally, the western terminus for the project is a location east of the SR 72 interchange. Geometric deficiencies exist at the SR 72 interchange, but funds are not currently available to address the interchange. By terminating the subject project east of this interchange, any work undertaken under the CLA-70-13.95 (PID 84664) will not be destroyed during any future project to address the interchange deficiencies.

The eastern terminus for the project is the underway CLA-70-20.92 project. This road reconstruction and widening project will be completed in Fall 2009.

Summary: The project is intended to address the following primary and secondary needs within the project segment of I-70:

- Primary Need - Maintain Adequate Pavement Condition
- Secondary Need – Address Inadequate Maintenance of Traffic of Conditions
- Secondary Need – Address Congestion within the Corridor and Advance the Clark County Long Range Plan

Analysis of Alternatives:

No Build: The No Build Alternative entails leaving IR 70 in its existing condition. This Alternative would have no construction environmental impacts and would have no cost. However, with the indefinite delay of the Major New CLA-IR 70-06.75 project, the pavement condition within the segment will not be otherwise addressed. This alternative will not meet the identified need to maintain this segment of the priority system, a component of the Strategic Highway Network, in adequate condition.

Continue Preventative Maintenance on the CLA-IR 70-13.95/20.92 Segment: As detailed in the Purpose & Need Statement, meets the criteria of a “poor performing” segment; the pavement condition is such that there is a diminishing return on the investment in preventative maintenance. Additionally, the segments shoulder widths are inadequate to allow two lanes of traffic to be maintained, as required by the Permitted Lane Closure Map, during such preventative maintenance. This alternative will violate ODOT’s Policy for Traffic Management in Work Zones and is therefore not acceptable.

Undertake the Reconstruction as Part of the Major New CLA-IR 70-06.75 Project: Currently, the Major New Program is expected to have zero allocations beginning in fiscal year 2010. The CLA-IR 70-06.75 project currently has no committed construction schedule. It is unlikely that the CLA-IR 70-06.75 will be constructed in sufficient time to prevent the project segment of corridor from falling to an unacceptable pavement condition rating. This alternative will not meet the identified need to maintain this segment of the priority system, a component of the Strategic Highway Network, in adequate condition.

Undertake the Proposed Reconstruction from SLM 13.95 to 20.92, without Widening: The existing shoulder widths within the project corridor are inadequate to allow for maintenance of two lanes of traffic during the proposed reconstruction of the project segment of I-70. This is unacceptable under ODOT’s permitted lane closure policy; under this policy, any 4-lane interstate maintenance project must maintain 2 lanes of traffic in both directions at all times. While this alternative meets the primary need of the project, it is inconsistent with ODOT policy and was dismissed from further consideration. Additionally, without widening, the median shoulders will remain 4’, less than the design standard of 12’; design exceptions for median shoulder widths are not granted under Major Rehabilitation projects. As such, this alternative cannot be advanced to design.

Undertake the Proposed Reconstruction from SLM 13.95 to 20.92, Including Widening for Maintenance of Traffic, without Striping for a Third Lane: This alternative meets the primary need of the project and also provides for future maintenance of traffic needs consistent with the ODOT Permitted Lane Closure Policy. This project would not address the identified congestion issues within the project segment and would not advance the Clark County Long Range Transportation Plan. This alternative would not maximize the benefit of the project to the travelling public and would not best serve the needs of the travelling public.

Preferred - Undertake the Proposed Reconstruction from SLM 13.95 to 20.92 as Proposed: Under this alternative, the project segment of I-70 will be reconstructed, ensuring that the pavement remains in adequate condition as part of the State’s priority system and as part of the Strategic Highway Network. By widening within the median prior to the reconstruction of existing pavement, it will be possible to maintain two lanes of traffic in each direction, consistent with ODOT policy. Following construction, the new pavement will be striped to provide a third thru lane in each direction and the required 12’ median shoulders; the cost for the new striping is estimated at \$235,624, less than 1% of the total project budget. The third lane will help to reduce congestion within the corridor and advance the Clark County Long Range Transportation Plan. This project both fully meets the primary need of the project (maintain adequate pavement condition) and the secondary needs of the project (address congestion and maintenance of traffic issues within the corridor).