



## MOPAC INTERSECTIONS ENVIRONMENTAL STUDY

Public Hearing – July 30, 2015



## Welcome to the presentation for the MoPac Intersections Environmental Study Public Hearing.

TxDOT and the Central Texas Regional Mobility Authority welcome you to the presentation for the proposed improvements to MoPac (Loop 1) from north of Slaughter Lane to south of La Crosse Avenue in Austin, Texas, studied as the MoPac Intersections Environmental Study.

1 INTRODUCTIONS

2 HEARING PURPOSE & FORMAT

3 PROJECT OVERVIEW

4 DRAFT ENVIRONMENTAL ASSESSMENT

5 ENGINEERING & DESIGN

6 PROJECT SCHEDULE & FUNDING

7 PUBLIC COMMENT SESSION

The presentation will begin with an introduction of our project team and will discuss the Public Hearing format. We will then provide an overview of the project history and proposed improvements.

Later, we will dive into more detailed discussion of the project's environmental considerations, engineering and design. We will also discuss the project's schedule and funding.

### **To review, discuss, and provide input on the:**

- Results of the Draft Environmental Assessment
- Build Alternative

### **The purpose of this Public Hearing is to:**

- provide an update on the project;
- describe the alternatives studied to address project need and purpose;
- present the Draft Environmental Assessment and the Build Alternative that resulted from those studies, and
- to receive public input on the Draft Environmental Assessment, and the Build Alternative.



**PLACE IN COMMENT BOX**



**MAIL OR FAX**

Central Texas Regional Mobility Authority  
c/o MoPac Intersections Environmental Study  
3300 North IH-35, Suite 300  
Austin, Texas 78705  
Fax: (512) 996-9784



**SUBMIT ONLINE**

[www.MoPacSouth.com](http://www.MoPacSouth.com)

**SUBMIT ON OR BEFORE AUGUST 10**

Written comments can be mailed, faxed, or submitted online to our Project Team.

**All comments to be included in the public hearing comment record must be received by August 10, 2015**, by midnight central standard time. Your comments will be reviewed and will be taken into consideration during future project development.

A comment and response report will be included in a summary of this public hearing and will be posted to [www.MoPacSouth.com/Intersections](http://www.MoPacSouth.com/Intersections) when complete.

# MOPAC INTERSECTIONS PROJECT

MoPac (Loop 1)  
From: North of Slaughter Lane  
To: South of La Crosse Avenue  
Travis County, Texas



The proposed project limits are from approximately 2,500 feet north of Slaughter Lane to approximately 3,700 feet south of La Crosse Avenue. The proposed project is approximately two miles long.

The Mobility Authority and TxDOT studied several alternatives for addressing the Purpose and Need for improvements. The build alternative identified through the Environmental Assessment would extend MoPac through lanes under

both the Slaughter Lane and La Crosse Avenue intersections using underpasses.

The Draft Environmental Assessment was developed in accordance with the National Environmental Policy Act requirements.

**This Federal Environmental Assessment was conducted under the requirements defined in the National Environmental Policy Act.**

*The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT."*

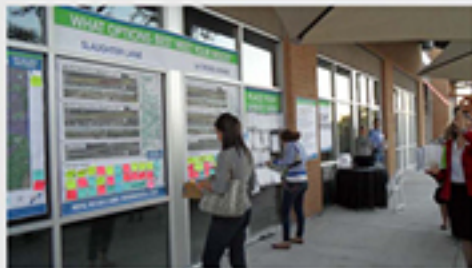
## ENVIRONMENTAL ASSESSMENT OVERVIEW – WHAT WE STUDIED

Direct, Indirect and Cumulative Impacts	Streams, Wetlands and Floodplains
Land Use	Vegetation
Socioeconomic Resources	Threatened and Endangered Species
Geology and Soils	Archeological Resources
Air Quality	Historic Resources
Traffic Noise	Hazardous Materials
Ground Water	Visual Quality

The proposed project will comply with the Edwards Aquifer Rules.

The document includes an assessment of potential direct, indirect and cumulative impacts to the natural and human environment.

- **Stakeholder meetings and community events**
- **Open House and Virtual Open House**
- **Additional outreach, including:**
  - E-newsletters
  - Website
  - Fact sheets



The public was engaged on this project beginning with the development of the need for, and the purpose of the proposed improvements, and on the evaluation of alternative options.





**REDUCE TRAVEL DELAY**



**ENHANCE SAFETY**

**The purpose of the proposed project is to reduce travel delay and enhance safety.**

## NEED: WHAT PROBLEMS ARE WE TRYING TO ADDRESS?

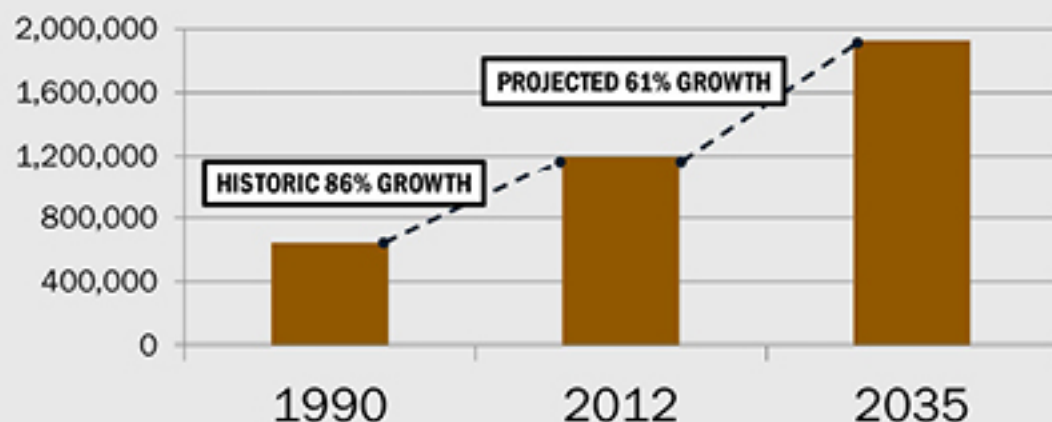


The need for the project arises from historic population and employment growth in the surrounding area, which has led to traffic congestion, increased delay and crashes at the intersections.

Growth trends are expected to continue, leading to further deterioration in intersection operations and safety.

## NEED: WHAT POPULATION GROWTH TELLS US

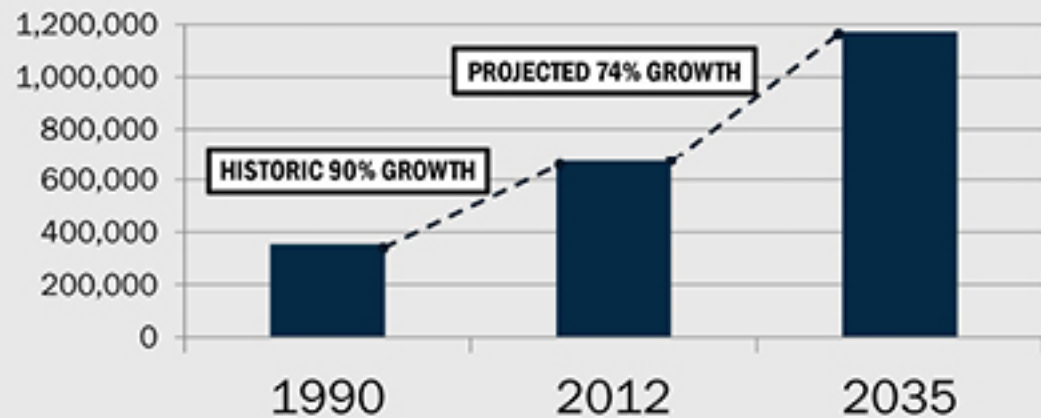
The population of Travis and Hays counties has grown historically and is forecasted to *continue to grow* in the future.



The metropolitan planning organization (MPO) for Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson counties, the Capital Area Metropolitan Planning Organization (CAMPO) is responsible for conducting the urban transportation planning process for the Austin metropolitan area. As part of this mission, CAMPO monitors regional growth trends and provides forecasts for population, households, and employment for use in both short-term and long-term planning.

Based on information from CAMPO, between 1990 to 2012, the population has increased by 86 percent. These growth trends are expected to continue; **between 2012 and 2035, the population is projected to grow by another 61 percent.**

The employment rate in Travis and Hays counties has grown historically and is forecasted to *continue to grow* in the future.



Between 1990 to 2012, the employment has grown almost 90 percent. These growth trends are expected to continue; **between 2012 and 2035, the employment is projected to grow by 74 percent.**

This continued growth will exacerbate the current congestion problems at the Slaughter Lane and La Crosse Avenue intersections.

## NEED: WHAT THE TRAFFIC MODEL TELLS US

Under the No Build (Do Nothing) alternative, it could take *three times longer* to drive on MoPac through the Slaughter Lane and La Crosse Avenue intersections in 2035.

SLAUGHTER LANE		LA CROSSE AVENUE	
IN 2013...	IF WE DO NOTHING, IN 2035...	IN 2013...	IF WE DO NOTHING, IN 2035...
MORNING PEAK HOUR NORTHBOUND TRAVEL TIME:			
<b>3 MIN.</b>	<b>8 MIN.</b>	<b>&lt;1 MIN.</b>	<b>6 MIN.</b>
EVENING PEAK HOUR SOUTHBOUND TRAVEL TIME:			
<b>3 MIN.</b>	<b>4 MIN.</b>	<b>&lt;1 MIN.</b>	<b>1.5 MIN.</b>

Increasing traffic on MoPac has created an additional burden to the already congested intersections at Slaughter Lane and La Crosse Avenue.

A traffic analysis was performed using peak-hour turning movement counts collected in October 2013 to understand the current intersection operations at these two cross streets with MoPac northbound and southbound lanes. In addition, the CAMPO 2035 Travel Demand Model was used to

forecast the travel times at these intersections.

Under the No Build or Do Nothing Alternative, **it could take three times longer to drive on MoPac through the Slaughter Lane and La Crosse Avenue intersections in 2035.**

## NEED: WHAT THE CRASH DATA MEANS

Overpasses/underpasses (grade-separated intersections) are safer than at-grade intersections where two roads cross at the same level because *a large portion of the traffic volume is separated*.

### *How do we know?*

The intersections with overpasses/underpasses that we studied on MoPac, from William Cannon Drive to Davis Lane, have a lower crash rate than on MoPac from Slaughter Lane to La Crosse Avenue, even though they carry *more than double* the traffic volume.

MoPac is a grade-separated and access-controlled facility from its northern terminus at SH 45 North down to Davis Lane. South of Davis Lane, MoPac has at-grade intersections with Slaughter Lane and La Crosse Avenue, representing the only remaining signalized intersections on the entire facility. An analysis of crash data from 2008 to mid-2013 was performed to compare conditions and crash rates for the project area with the grade-separated area immediately to the north.

The grade-separated section of MoPac from William Cannon Drive to Davis Lane has a crash rate of 47.1 crashes per 100 million vehicle miles travelled (VMT), as compared to the project area, which has 55.7 crashes per 100 million VMT. **The grade-separated section just north of the project area has a lower crash rate even when it carries more than double the traffic volume.**

## ALTERNATIVES CONSIDERED

### 1. **NO BUILD (DO NOTHING)**

No improvements are constructed; assumes all other projects in the CAMPO Plan would be constructed

### 2. **OVERPASSES**

MoPac runs **over** Slaughter Lane and La Crosse Avenue

### 3. **UNDERPASSES**

MoPac runs **under** Slaughter Lane and La Crosse Avenue

After defining the need for and purpose of improvements at these two intersections with MoPac, the study team considered alternatives that could reduce travel delay and enhance safety. Initially, the study team evaluated overpasses, the MoPac non-tolled mainlanes passing over Slaughter Lane and La Crosse Avenue, and underpasses, the MoPac non-tolled mainlanes passing under Slaughter Lane and La Crosse Avenue. Based on this evaluation and the support of the public, the study team decided to focus on underpasses for the following reasons:

- **Existing conditions in the project area favor the geometry for an underpass**, owing in part to the original construction plans, which were designed with a planned future underpass at both Slaughter Lane and La Crosse Avenue. When MoPac was built in the early 1990s, the intent was to convert the connections at Slaughter Lane and La Crosse Avenue to entrance and exit ramps when the future lanes were constructed.
- The cost of constructing underpasses is about **\$12.5 million less than overpasses**.

## BUILD ALTERNATIVE: UNDERPASS CONFIGURATIONS

STANDARD DIAMOND INTERSECTION



SINGLE POINT URBAN INTERSECTION



ROUNDABOUT



DIVERGING DIAMOND INTERSECTION (DDI)



Several innovative underpass options were considered, including: standard diamond intersection, single-point urban intersection, grade-separated roundabout, and Diverging Diamond Intersection.

### **At Slaughter Lane and MoPac, a Diverging Diamond Intersection would best achieve the project purpose to reduce travel delay and enhance safety:**

- No additional right-of-way is needed. It is important that the intersection improvements fit within existing right of way to minimize impacts to the surrounding environment and adjacent land uses.
- The standard diamond and the roundabout alternatives would not accommodate anticipated 2035 traffic volumes or number of turning movements.
- The single-point urban intersection would accommodate anticipated 2035 traffic volumes, but travel time delays would be longer than in a Diverging Diamond Intersection and it would be more expensive than a Diverging Diamond Intersection.

### **At La Crosse Avenue, a standard diamond intersection best achieved the project purpose:**

- No additional right-of-way is needed.
- The standard diamond accommodates the anticipated traffic volume in 2035.
- It was originally envisioned in the design when MoPac was constructed in the early 1990's, therefore it fit well within the existing facility.

**The No Build or Do Nothing alternative was also considered in the Environmental Assessment.**



### THE BUILD ALTERNATIVE IS RECOMMENDED BECAUSE IT:

- Is consistent with Purpose and Need
- Does not require right-of-way acquisition
- Does not require residential or commercial relocations
- Avoids and minimizes impacts to water quality
- Minimizes traffic noise levels
- Is consistent with regional planning efforts
- Accommodates safe pedestrian and bicycle access
- Does not harm threatened and endangered species

The Build Alternative that was analyzed in the Environmental Assessment includes **non-tolled mainlanes passing under Slaughter Lane and under La Crosse Avenue**. This was accomplished with a Diverging Diamond Intersection at Slaughter Lane and a standard diamond intersection at La Crosse Avenue.

- Land Use
- Archeological Resources
- Historic Resources
- Socioeconomic Resources
- Air Quality
- Hazardous Materials
- Visual Quality
- Traffic Noise

Potential impacts resulting from the proposed project to the human environment were evaluated in the Environmental Assessment.

There would be **no impacts to land use in the area** because this project would be built within the existing right of way.

Background research of archeological and historic resources was conducted resulting in the identification of two archeological sites which were not eligible for the National Register of Historic Places. **These studies showed that no adverse effects to cultural**

**resources would result from this project.**

An analysis of socioeconomic resources was conducted and found that there would be **no disproportionately high and adverse effects on minority and low income populations.**

Potential impacts from carbon monoxide and mobile source air toxics (or MSATs) were evaluated and **no adverse effects to air quality are anticipated.**

A review of regulatory databases was conducted and an Initial Site Assessment for Hazardous Materials was prepared. **No hazardous materials concerns were identified.**

**Visual impacts would be minimal.** Slaughter Lane would be raised less than three feet above its existing elevation; La Crosse Ave. would remain at its current elevation, resulting in negligible to no change in viewsheds of adjacent properties. The removal of trees in the median may make the intersection more visible for some properties and may result in a view across the right-of-way which was previously blocked by vegetation.

### TRAFFIC NOISE ANALYSIS CONDUCTED

- Noise barriers were found reasonable and feasible
- Noise workshops will be held for property owners adjacent to a proposed barrier



A Traffic Noise Analysis was conducted to examine existing noise levels and projected future noise levels. This analysis concluded that there would be a noise impact at 101 noise receivers including residences, commercial properties, parks, and trails.

To mitigate for these impacts the effectiveness of noise abatement was evaluated. **Noise barriers were found both reasonable and feasible.** In order to be feasible, the abatement measure must be able to reduce the noise level at greater

than 50% of impacted, first row receivers by at least 5 decibels. To be considered reasonable, the abatement measure must not exceed the cost-effectiveness criterion of \$25,000 for each receiver that would benefit from a noise reduction of at least 5 decibels. **Noise barriers, shown with orange line on the slide, were found to be reasonable and feasible on the east side of MoPac (at Circle C Wildflower Park and the Lady Bird Johnson Wildflower Center) and on the west side of MoPac (from Slaughter Lane to La Crosse Avenue).**

TxDOT will conduct noise workshops with the owners of property adjacent to the proposed noise barriers. These property owners will assist TxDOT in determining whether the noise barrier would be constructed.

- Vegetation
- Streams, Wetlands and Floodplains
- Geologic Studies
- Water Quality and Quantity
- Threatened and Endangered Species



Geologic feature located within Slaughter Creek. Source: Zara 2014

Potential impacts resulting from the proposed project to the natural environment were evaluated in the Environmental Assessment.

The proposed project would remove the trees currently in the median between Slaughter Lane and La Crosse Avenue. If the Build Alternative is approved, TxDOT will utilize a native seed mix to create a diverse native roadside.

### **Less than a tenth of an acre of a tributary of Slaughter Creek**

**within the existing right-of-way would be impacted by the project.** These impacts would be authorized under a U.S. Army Corps of Engineers Nationwide Permit.

Part of the project is located within the designated 100 year floodplain. The hydraulic design for this project will meet current FEMA and TxDOT design criteria.

- Project is over Barton Springs Segment of Edwards Aquifer Recharge Zone
- Project will meet Texas Commission on Environmental Quality's Edwards Aquifer Rules



Source: TCEQ 2015

TxDOT coordinated with the Texas Commission on Environmental Quality on this project.

This project is located over the Barton Springs Segment of the Edwards Aquifer Recharge Zone. Caves and karst voids are known to be present in this area (the word karst describes an area of irregular limestone in which erosion has produced fissures, sinkholes, underground streams, and caverns).

### **Construction activities would not occur within the surface drainage**

**of any known cave.** However, the proposed project area lies within the subsurface drainage basin for Blowing Sink Cave, a cave which connects directly to the Edwards Aquifer. To avoid impacts to caves and water quality, **drainage would be directed away from cave entrances located outside the right-of-way.**

The maximum cut depth under Slaughter Lane would be approximately 23 feet, and for La Crosse Avenue it would be approximately 25 feet. Relocation or adjustment of the underground pipelines that cross the project area do not – at this time – appear to be necessary. The need for pipeline adjustments will be further evaluated during final design and coordinated with the pipeline owners to ensure public safety during and after construction.

The proposed improvements would add new impervious cover within the existing right of way. **This project will comply with the Edwards Aquifer Rules**, which require 80% removal of the increase of Total Suspended Solids (or TSS) which is used as a marker for pollutants in runoff. This will be accomplished by incorporating temporary and permanent TCEQ approved Best Management Practices and measures to protect geologic features discovered during construction.

**Based on the results of these analyses and mitigation measures no adverse effects on water quality or quantity are anticipated from this project.**

The project area includes habitat for threatened and endangered species, therefore surveys were conducted for karst invertebrates, salamanders and the golden-cheeked warbler.

*No threatened or endangered species were encountered during these surveys.*

TxDOT coordinated with the Texas Parks and Wildlife Department on this project.

The project area includes habitat for threatened and endangered species, therefore surveys were conducted for karst invertebrates, salamanders and the golden-cheeked warbler. No threatened or endangered species were encountered during these surveys.

**Based on the inclusion of TCEQ approved Best Management**

**Practices to protect water quality and wildlife no adverse effects are anticipated.**

### The potential for indirect and cumulative impacts was evaluated in the Environmental Assessment

- The project would not result in induced growth, and therefore would not result in indirect impacts.
- Study evaluated the cumulative impacts of every project in the Capital Area Metropolitan Planning Organization 2035 Plan, including MoPac South and SH 45SW.
- It is unlikely that the project would contribute to cumulative impacts to at-risk resources, including groundwater resources or threatened or endangered species, due to the incorporation of Texas Commission on Environmental Quality approved Best Management Practices.

The potential for indirect impacts was evaluated in the Environmental Assessment. These are impacts that are farther removed in distance or occur later in time but still are reasonably foreseeable. Indirect impacts are mostly related to growth induced by a project.

This project would not result in induced growth and therefore would not result in indirect impacts, based on the following reasons:

- This project would not create new economic or development opportunities.
- It does not provide new access to land in the project area.

The potential for cumulative impacts was also evaluated in the Environmental Assessment. Cumulative impacts are focused on incremental direct and indirect impacts when added to the impacts of actions by others.

Although this project is located within the ecologically sensitive Barton Springs Segment of the Edwards Aquifer, it would utilize TCEQ approved Best Management Practices during construction to avoid impacts to water quality and endangered species. **The project would not result in any direct or indirect impacts that would contribute to cumulative impacts to these resources.**

## PROPOSED MOPAC TYPICAL SECTION



### Mainlanes:

- Two 12-foot travel lanes in each direction
- Four-foot inside shoulder
- 10-foot outside shoulder

The proposed improvements would extend the existing MoPac **non-tolled mainlanes under Slaughter Lane and under La Crosse Avenue**. This would separate the traffic traveling through these intersections from traffic needing to access Slaughter Lane and La Crosse Avenue, thus improving intersection operations and enhancing safety. **These improvements do not require any new right-of-way.** The proposed improvements to MoPac through the intersections would include:

- Two 12-foot, non-tolled travel lanes in each direction going under Slaughter Lane and under La Crosse Avenue
- Four-foot-wide inside shoulders
- 10-foot-wide outside shoulders
- 10-foot-wide shared use path





A Diverging Diamond Intersection is proposed at Slaughter Lane/MoPac. **A Diverging Diamond Intersection is an innovative design solution that addresses congestion by allowing vehicles to travel more quickly through an intersection.** A Diverging Diamond Intersection creates a diamond-shaped pattern in the intersection and temporarily shifts traffic to the left side of the roadway to increase traffic flow by allowing through-traffic and left-turning traffic to proceed through an intersection simultaneously. This

is an artistic rendering of what the intersection of Slaughter Lane and MoPac could look like after construction.

- The viewpoint in this image is looking west.
- Vehicles traveling westbound on Slaughter Lane wanting to cross MoPac would diverge to the left and either take the free left turn to enter southbound MoPac or after crossing MoPac diverge back to the right side of the road to continue westbound on Slaughter Lane.
- The pedestrian is walking along a barrier protected median to cross over MoPac.
- The cyclist is traveling on the bike lane to cross over MoPac.



**A standard diamond intersection is proposed at La Crosse Avenue/MoPac, similar to most intersections in the area.** This is an artistic rendering of what the intersection of La Crosse Avenue and MoPac could look like after construction.

- The viewpoint in this image is looking south.
- Vehicles are traveling on the main lanes under La Crosse Avenue.
- Vehicles that need to access La Crosse Avenue have taken an exit and are traveling on the ramps preparing to turn right or left onto La Crosse Avenue.
- The shared use path is separated from the vehicles on the ramp.
- Pedestrians are walking along the sidewalks to cross over MoPac.
- Cyclists are traveling on the bike lanes to cross over MoPac.

- 10-foot-wide Shared Use Path along the west side of MoPac from Slaughter Lane to La Crosse Avenue
- Provides continuous sidewalks where there are now gaps
- ADA-compliant
- Provides connections to existing and proposed bicycle and pedestrian facilities



Shared use path along US 183A. Source: Jacobs 2015

This project includes an ADA-compliant Shared Use Path along the west side of MoPac that connects from Slaughter Lane to La Crosse Avenue. It would also connect to the proposed City of Austin trail at Slaughter Creek.

Proposed improvements include construction of ADA-compliant sidewalks on the new bridge at Slaughter Lane and La Crosse Avenue to provide a safe east-west connection.

Bike lanes are also included on Slaughter Lane and La Crosse Avenue to allow cyclists to safely cross over MoPac.

### Water Quality:

- Stormwater Pollution Prevention Plan
- Water Pollution Abatement Plan

### Air Quality:

- Covering or treating disturbed areas with dust suppression techniques

### Vegetation/Wildlife:

- Stormwater controls will remain in place until vegetation is reestablished where possible
- Proper phasing of construction around nesting season of migratory birds

### Geologic Features:

- Measures will be taken to protect geologic features discovered during construction

Several best management practices (or BMPs) would be implemented during construction to avoid and minimize any impacts.

## Non-tolled project is funded with local, state and federal resources

**\$46 million**

current total project cost

This project would be funded with local, state and federal funds. The total project is currently estimated at \$46 million.

## PROJECT SCHEDULE

DATE	MILESTONE
2015	<b>PUBLIC HEARING SUMMARY REPORT</b>
	<b>FINAL EA &amp; ENVIRONMENTAL DECISION</b>
2016	<b>ANTICIPATED CONSTRUCTION START (if environmentally approved)</b>

Anticipated construction duration is 2-3 years.

After this hearing is complete, the project team will document it by completing a Public Hearing summary report. Later this year, the project team will submit a Final Environmental Assessment and receive an environmental decision.

**If the project is environmentally approved, construction is anticipated to begin in 2016. The project is anticipated to take 2-3 years to construct.**



**PLACE IN COMMENT BOX**



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**SUBMIT ONLINE**

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**SUBMIT ON OR BEFORE AUGUST 10**

All comments received at the Public Hearing, as well as those received by August 10, 2015, will be included in the public hearing record. This will be available to the public and can be obtained on-line or for the cost of reproduction, by contacting our office.

**Click this slide to access the online comment form.**