

6.0 RECOMMENDATION OF PREFERRED ALTERNATIVE

6.1 Rationale for Recommending the Preferred Alternative

The Build and No-Build Alternatives were evaluated throughout the EA in terms of their effects on the natural and human environments, as well as their ability to meet the proposed project's need and purpose. The following criteria were utilized to evaluate the alternatives:

- Ability to meet the project's need and purpose;
- Input of citizens and other stakeholders;
- Effects on the human and natural environments;
- Effects to historic properties and neighborhoods;
- Implementation ability; and,
- Projected impacts on mobility.

The Build Alternative was selected as the Preferred Alternative for implementation for the following reasons.

The Preferred Alternative (Build Alternative):

- Satisfies the project's need and purpose, as described in **Section 2.0**;
- Stays within the existing ROW, as requested over years of public involvement and in CAMPO resolutions;
- Avoids impacts to National Register Historic Districts, neighborhoods, cemeteries, and public facilities by constructing all improvements within the existing ROW;
- Improves mobility by funding the construction of bicycle and pedestrian facilities that implement portions of the City of Austin's Bicycle and Pedestrian Plans, as discussed in **Section 4.5.1.7**;
- Improves mobility by increasing the operation efficiency of the facility, as outlined in **Section 3.6**;
- Can be funded through a combination of Category 2 Federal Funding for Mobility Projects and local revenue-backed funds;
- Facilitates congestion management by allowing travelers to utilize a less congested alternative at any time of day;

- Provides transit and emergency response vehicles a reliable route even when GP lanes are congested; and,
- Moves more people and not just more vehicles.

6.2 Environmental Permits, Issues, and Commitments

The following sections identify environmental permits, issues and commitments that would likely be required for the implementation of the Build Alternative.

6.2.1 Construction Management

Construction activities would temporarily affect vehicular traffic. As part of the construction contract requirements, the contractor would be required to maintain the necessary number of barricades, signs, flags, and traffic barriers in order to direct vehicular traffic away from construction areas. A detailed traffic control plan would be developed to minimize traffic disruption. Access to adjacent residences and businesses would remain open through all phases of construction. During construction of the Express lanes, traffic on the GP lanes would remain open on both the northbound and southbound sides at all times. At this time, no detours are anticipated to be required during the construction of the proposed project. However, if a detour is determined to be necessary, approval from TxDOT and the City of Austin would be obtained prior to re-routing traffic.

6.2.2 Community Resources

For all motorists who use the Express lanes, the same toll would be assessed regardless of income. The existing GP lanes of MoPac would continue to be available for use without a toll, allowing all motorists the option of using tolled or non-tolled lanes on MoPac. Transit vehicles, registered vanpools, and emergency vehicles would have access to the Express lanes free of charge.

6.2.3 Air Quality

The ability to discern differences in MSAT emissions among transportation alternatives is difficult, given the uncertainties associated with forecasting travel activity and air pollutant emissions 25 years or more in the future. However, the effects of a major transportation project extend beyond its corridor and an evaluation within the context of an affected transportation network can be accomplished. The main analytical tool for predicting emissions from on-road motor vehicles is the EPA's MOBILE6.2 model. The model is regional in scope and has limited applicability to a project-level analysis.

When evaluating the future options for upgrading a transportation corridor, the major mitigating factor in reducing MSAT emissions is the implementation of the EPA's new motor vehicle emission control standards. Decreases in MSAT emissions would be realized from 2010 through the estimated time of completion for a planned project and its design year 25 years in the future. Accounting for anticipated increases in VMT and increased efficiency of vehicles, total MSAT emissions are predicted to decline by approximately 40 percent from 2010 to 2035. Benzene emissions are predicted to decline by 31 percent and DPM emissions by 80 percent.

The major air toxics from mobile sources, especially benzene, have dropped dramatically since 1995 and are expected to continue dropping. The introduction of RFG has led to a substantial part of this improvement. In addition, Tier 2 automobiles introduced in model year 2004 would continue to help reduce MSAT. Diesel exhaust emissions have been falling since the early 1990s with the passage of the CAAA, which provided for improvement in diesel fuel through reductions in sulfur and other changes. The EPA further reduced the sulfur level in diesel fuel beginning in 2006. The EPA also has called for dramatic reductions in NOx emissions, and in PM from on-road and off-road diesel engines. MSAT emissions related to the affected transportation network are not expected to increase overall air toxics levels in the MIP area in the future years investigated.

6.2.4 Traffic Noise Analysis

Because the predicted noise levels approach, equal, or exceed the NAC, noise abatement measures must be considered for this project. Based on the studies thus far accomplished, TxDOT intends to install noise abatement in the form of sound walls at the locations described in **Sections 4.7** and **5.3** and shown in **Appendix O**. These abatement measures are based upon preliminary design and wall cost, and the votes of impacted residents (and the City of Austin in areas where walls are proposed in City of Austin ROW).

Barring any substantial changes in design that would require a re-evaluation of noise mitigation measures, the sound walls recommended in **Section 4.7** will be implemented in accordance with the noise modeling evaluation. At a minimum, the contractor shall construct the sound walls to achieve the top of wall elevations provided in the procurement documents.

Provisions will be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls and proper maintenance of muffler systems.

6.2.5 Water Resources

6.2.5.1 Water Quality

The proposed project would disturb more than five acres of land; therefore, TxDOT is required to comply with the TPDES General Permit for Construction Storm Water Discharges. A SW3P would be in place prior to the start of construction and would be maintained until the site is stabilized. A NOI stating that a SW3P has been developed would be filed with the TCEQ prior to beginning of construction.

The proposed Build Alternative includes a drainage system that would be regulated under the MS4 permit held by TxDOT. The MS4 program regulates storm water discharges to local water bodies to protect the receiving streams. The City of Austin operates the MS4 within the city boundaries. TxDOT would provide a NOI for the change to the MS4 permit to the City of Austin and coordination would occur as necessary.

Measures would be taken to prevent and correct erosion that may develop during construction. Temporary erosion controls would be in compliance with TxDOT Standard Specifications and would be in place, according to the construction

plans, prior to commencement of construction. They would be inspected on a regular basis to ensure maximum effectiveness.

The following subsections discuss temporary and permanent water pollution control measures.

Temporary Water Pollution Control Measures: Water quality impacts would be minimized during construction of the proposed project through the implementation of a WPAP and a SW3P. These plans would include structural controls and practices that would be followed throughout the construction of the project to minimize water impacts. Guidance documents, such as TxDOT's Storm Water Management Guidelines for Construction Activities, provide a detailed discussion of construction BMPs and additional information on implementation of temporary storm water controls. The controls would include the following:

- Minimize the extent and the duration of disturbed areas. Plan the phases of construction to minimize exposure and use vegetation to stabilize disturbed areas as practicable.
- Apply erosion control practices to minimize the loss of sediment and keep the soil covered and in place as much as possible using temporary or permanent vegetation, erosion control blankets, or various mulch materials. Other practices include diversion structures to channel surface runoff from exposed soils and the use of slope drains where grades may be prone to erosion.
- Apply perimeter controls to minimize the discharge of sediment laden storm water. This objective relates to using practices that effectively remove sediment from the runoff water and prevent its transport from the site. These controls include silt fences, diversion structures, swales, dikes, sediment traps, rock berms, and vegetative filters.
- Stabilize disturbed areas as quickly as possible after final grade has been attained. Permanent structures, temporary or permanent vegetation, mulch, stabilizing emulsions, or a combination of these measures should be employed as quickly as possible after the land is disturbed.

Permanent Water Pollution Control Measures: Examples of storm water pollution mitigation measures include detention ponds, wet ponds, sand filters, and grassed swales. The primary mechanisms making these measures effective in removing pollutants from storm water are detention and filtration. The selection, design, and effectiveness of these measures are highly site dependent, but all have been shown to be effective in treating highway runoff. **Table 6.2-1** shows the effectiveness of these measures.

The type and location of appropriate permanent water pollution control measures would be determined during the final design of the proposed project. These measures would be designed for site-specific conditions and would meet the standards specified in the Edwards Aquifer Rules.

Table 6.2-1: Effectiveness of Permanent Water Pollution Control Measures

Control Measure	Removal Efficiency (%) of Target Constituent			
	Sediment	Phosphorous	Nitrogen	Heavy Metals
Extended Detention Pond	68-90	42-50	28-40	42-90
Wet Pond	90	65	48	*
Sand Filter	70-90	50-70	30-50	50-90
Grassed Swale	70	30	25	50-90

Source: FHWA.

Note: *Insufficient Data

6.2.5.2 Jurisdictional Waters of the U.S. (Section 404 Permitting)

Under Section 404 of the Clean Water Act, a permit is required from the USACE for any activity involving the discharge of dredged or fill material into waters of the U.S., including wetlands. Walnut Creek, Shoal Creek, Johnson Creek and some of their tributaries are assumed to be waters of the U.S. based on the field assessment performed for this report, as shown in **Table 4.8-1** and **Figure 4.8-1**. A Section 404 permit would be required for the placement of dredged or fill material within the channel (as defined by the OHWM) of these streams. The impacts to jurisdictional waters related to this project can be authorized under Section 404 of the Clean Water Act, using NWP 14 for linear transportation projects as long as the total area impacted per single and complete crossing does not exceed 0.50 acre. If more than 0.10 acre but less than 0.50 acre would be lost, a NWP 14 may be used but would require submittal of a pre-construction notification (PCN) and the USACE could require mitigation. If less than 0.10 acre would be lost, a NWP 14 may be used and, if no wetlands, special aquatic sites, or other special features are present, would not require a PCN and the USACE would probably not require mitigation.

6.2.5.3 Groundwater

The Edwards Aquifer Rules (TCEQ, 1996) require that a WPAP be prepared for any construction-related activity over five acres within the recharge zone for the aquifer. The contents of the WPAP would include information on the project design, an assessment of the area geology, and plans for mitigating impacts to water quality.

6.2.6 Ecological Resources

6.2.6.1 Vegetation and Wildlife Habitat

Of the approximately 91.4 acres of vegetation that would be permanently lost through the laying of new pavement, expansion of existing overpasses, installation of sound walls, and from clearing of trees, approximately 77.1 acres consist of herbaceous vegetation typical of road ROW. Approximately 0.4 acres consist of riparian woodland, and approximately 16.2 acres consist of woody vegetation. Most woody vegetation consists of a combination of native and exotic trees, shrubs, and vines present on the edges of the residential and commercial lots that border the ROW.

Upon completion of earthwork operations, disturbed areas would be restored and seeded according to TxDOT's Vegetation Management Guidelines and in compliance with the intent of the FHWA *Executive Memorandum on Beneficial Landscapes* and the FHWA *Executive Order on Invasive Species*.

Construction staging would be scheduled to avoid impacts to active nests of migratory birds or migratory bird breeding seasons, and to avoid the potential to disturb any breeding cave myotis bats. Prior to any demolition activities, particular attention would be paid to the potential for birds and bats to be roosting in culverts and under bridges.

Appropriate measures including the following would be taken to avoid adverse impacts on migratory birds. Between October 1 and February 15, the contractor would remove all old migratory bird nests from any structures that would be affected by the proposed project, and complete any necessary demolition of bridges and/or vegetation clearing. In addition, the contractor would be prepared to prevent migratory birds from building nests between February 15 and October 1, per the Environmental Permits, Issues, and Commitments (EPIC) plan sheets. In the event that migratory birds are encountered on-site during project construction, adverse impacts to protected birds, active nests, eggs, and/or young would be avoided.

6.2.6.2 Threatened and Endangered Species

No direct effects to federally listed, proposed, or candidate species are anticipated. Small changes in local traffic patterns, with concomitant but inconsequential increases in local levels of pollutants in road runoff, may cause negligible indirect and cumulative effects on habitats occupied by Barton Springs, Austin blind, and Jollyville Plateau salamanders.

In the event that significant subsurface void space is encountered during the construction phase, work at that location would be halted immediately and the feature would be inspected promptly by a qualified karst biologist to determine the potential of that feature to provide habitat for the federally endangered Bone Cave harvestman. Work at that location would not resume until the feature is verified to not provide suitable habitat for endangered karst invertebrates or until authorization to disturb the feature has been obtained from the USFWS through a Section 7 consultation.

No terrestrial state-listed species or state species of concern are known to occur in the MIP area. No permanent loss of suitable habitat for any state-listed species or species of concern is expected as a result of the proposed project. Two species of concern, Texas garter snake and Leonora's dancer, may occur along creeks in the project area. In general, temporary disturbance of normal behavior patterns of local animals and birds would be caused by the noise and physical activities of work crews.

6.2.7 Archeological Resources

A TxDOT-certified archeologist evaluated the potential for the proposed undertaking to affect archeological historic properties or State Archeological Landmarks in the Area of Potential Effects. Section 106 review and consultation proceeded in accordance with the

First Amended Programmatic Agreement among FHWA, TxDOT, the Texas SHPO, and the Advisory Council on Historic Preservation Regarding the Implementation of Transportation Undertakings (PA-TU), as well as the MOU (43 TAC 2.24) between the THC and TxDOT. In the event that unanticipated archeological deposits are encountered during construction, work in the immediate area would cease and TxDOT archeological staff would be contacted to initiate post-review discovery procedures under the provisions of the PA-TU and MOU.

Once final design of the proposed project is complete, a survey along Great Northern Boulevard and the shared-use path near Shoal Creek and US 183 would be completed in accordance with the above-referenced guidance.

6.2.8 Hazardous Materials

If hazardous constituents are unexpectedly encountered in the soil and/or shallow groundwater during construction operations, appropriate measures for the proper assessment, remediation and management of the contamination would be initiated in accordance with applicable federal, state, and local regulations. Appropriate soils and/or groundwater management plans for activities within these areas would be developed. Special provisions or contingency language would be included in the project's plans, specifications, and estimates (PS&E) to handle hazardous materials and/or petroleum contamination according to applicable state, federal, and local regulations per TxDOT Standard Specifications. Hazardous items that require special handling would be removed only by certified and licensed abatement contractors having documentation of prior acceptable work.

The contractor would take appropriate measures to prevent, minimize, and control the spill of fuels, lubricants, and hazardous materials in the construction staging areas. All spills, including those of less than 25 gallons shall be cleaned immediately and any contaminated soil shall be immediately removed from the site and be disposed of properly. Designated areas shall be identified for spoils disposal and materials storage. The areas shall be protected from inflow and runoff. Materials resulting from the destruction of existing roads and structures shall be stored in these designated areas. All materials being removed and/or disposed of by the contractor would be done so in accordance with state and federal laws and by the approval of the TxDOT Project Engineer.

The proposed project includes the widening of bridge class structures and construction of retaining walls. The project's PS&E would disclose areas of asbestos and lead-based paint which could be disturbed. Special provisions would be developed in the PS&E for asbestos-related activities, notifications, required licenses, and monitoring in accordance with Texas Asbestos Health Protection (TAHPA) and national Emissions Standards for Hazardous Air Pollutants (NESHAPS) regulations. Should asbestos-containing materials or lead-based paint be unexpectedly encountered, then appropriate sampling, abatement and disposal activities would be performed in accordance with the TAHPA, NESHAPS, TCEQ and EPA regulations.

6.2.9 Visual and Aesthetic Resources

The MoPac 1 Aesthetics Advisory Committee (AAC) was established to provide an opportunity for public stakeholders to interact with and provide community feedback to the MIP team. The AAC met over the course of six months during the spring and

summer of 2007 to review the aesthetic aspects of various elements of the Loop 1 project such as sound walls, retaining walls, landscaping, specialty lighting, and sign structures (see **Appendix Q**).

The committee was comprised of members of the community and representatives from the Texas Historical Commission (THC), City of Austin and TxDOT. Each committee member served their community or agency by providing input for aesthetic enhancements to the project corridor as part of any mobility improvements made as a result of the MIP. The efforts of the AAC gave the community a voice in the aesthetics decision-making process in an attempt to make the improvements reflect the distinct character of the community.

Building on this earlier work, the MoPac Improvement Project team is using a Context Sensitive Design (CSD) process to assist in development of design components that reflect the community's vision for the project. The CSD Advisory Committee includes members from the original 2007 committee, as well as additional representatives from neighborhoods along the corridor. With input from the committee, major project design components were conceptualized, including bridges, retaining walls and sound walls, along with landscape treatments, hardscapes and possibly signature design elements to unify the look and feel of the corridor. Subject to available funding, at certain locations, existing wooden fences may be replaced with neighborhood walls. To ensure a consistent visual experience along the corridor, the neighborhood walls, where provided, would match the aesthetics of the proposed sound walls. An open house meeting was held on May 26, 2011 to share information with the public about the CSD analysis and to present preliminary design concepts.

The Mobility Authority will require the final design and construction of the Project to adhere to "Aesthetic and Landscaping Guidelines" that are being prepared by the Mobility Authority based on input received from the CSD Advisory Committee and the general public. These guidelines will require a corridor-wide aesthetic and landscaping plan to be developed during the design phase. This plan will include the planting of trees within MoPac ROW and adjacent to the Austin Memorial Park cemetery. The type of trees, spacing, and planting requirements will be coordinated with the Texas Historical Commission, the City of Austin and TxDOT during final design. This commitment will be included in the contract documents as well as presented to the Austin City Council for consideration in early 2012.

TxDOT will consider input from the CSD Advisory Committee when deciding what action or recommendation to implement. If funding is not available for the full range of desired aesthetic features, the TxDOT will determine which features are implemented based on the priorities identified by the CSD Advisory Committee.

6.3 Recommendation for Alternative Selection and Finding of No Significant Impact

The evaluation of the data and findings presented in this Environmental Assessment indicate that the proposed MoPac improvements from Parmer Lane to Cesar Chavez Street in Austin include measures to avoid, minimize, or compensate for adverse environmental impacts, as well as, when practicable, measures to enhance the

environment. The FHWA approved the environmental assessment for the MoPac Improvement Project as “satisfactory for further processing” on April 12, 2012.

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