

Appendix I
Indirect Impacts Analysis Technical Report

INDIRECT IMPACTS ANALYSIS

LOOP 375 BORDER HIGHWAY WEST EXTENSION PROJECT

CSJ: 2552-04-027

EL PASO COUNTY, TEXAS

TEXAS DEPARTMENT OF TRANSPORTATION

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TECHNICAL REPORT OVERVIEW

Purpose

The purpose of this technical report is to assess the indirect impacts related to the proposed Loop 375 Border Highway West Extension Project. The Council on Environmental Quality (CEQ) defines indirect effects¹ as:

Effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. [40 Code of Federal Regulations (C.F.R.) § 1508.8]

All indirect effects would occur outside of the existing or proposed right-of-way (ROW). As to the cause and effect relationship between the proposed improvements and the indirect impact, CEQ states that indirect effects may include induced changes to land use resulting in resource impacts (40 C.F.R. § 1508.8). Indirect effects can be linked to direct effects in a causal chain [National Cooperative Highway Research Program's (NCHRP) *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*, Report 466, 2002 (NCHRP Report 466)]. The chain can be extended as indirect effects produce further consequences. Probability also helps distinguish indirect effects from direct effects; direct effects are often inevitable while indirect effects are merely probable.

Categories of Indirect Impacts

The NCHRP Report 466 defines three basic types of indirect impacts:

Encroachment-alteration effects – Alteration of the behavior and function of the affected environment caused by project encroachment can be characterized within two broad categories: ecological effects and socio-economic effects. These effects can be linked to impact-causing activities associated with a proposed project.

Understanding ecosystem interconnections can reveal a chain of events delayed in time or space from the original transportation project action on or within a particular level of ecological organization. Potential indirect ecological effects include, but are not limited to, habitat fragmentation from physical alteration of the environment; degradation of habitat from pollution; disruption of natural processes (i.e., hydrology, species competition, predator-prey relations); and disruption of ecosystem functioning (related to direct mortality impacts).

Regarding socio-economic effects, encroachment by transportation projects can directly affect the physical nature of a neighborhood in two major ways: (1) alteration of traffic patterns and access, and (2) relocation of homes and businesses, or relocation or alteration of public facilities. These direct effects can result in indirect effects that include alterations to the following: neighborhood cohesion, neighborhood stability, travel patterns of commuters and shoppers, recreation patterns at public facilities, pedestrian dependency and mobility, perceived quality of the natural environment, personal safety and privacy, and aesthetic and cultural values.

¹ The terms "effect" and "impact" are used synonymously in the CEQ regulations.

Induced growth effects – Transportation improvements often reduce the time-cost of travel, enhancing the attractiveness of surrounding land to developers and consumers. Development on vacant land, or conversion of the built environment to more intensive uses, is often a consequence of highway projects. Growth in population and employment attributable to a direct project impact (change in accessibility) is an indirect effect that, in turn, produces its own effects on the environment.

Effects related to induced growth – Project-influenced land development and growth can affect the environment in other ways. This category of indirect impacts can only be considered once induced growth has been identified and studied to some degree. If induced growth is anticipated, the effects of that growth must be analyzed. Effects related to induced growth are similar to encroachment-alteration effects, but occur as a result of induced growth.

Methodology

The indirect effects analysis was conducted in accordance with TxDOT’s *Revised Guidance on Preparing Indirect and Cumulative Impacts Analyses* (September 2010). The *Revised Guidance on Preparing Indirect and Cumulative Impact Analyses* specifies a seven-step process (**Table 1**) for determining indirect effects. This seven-step process is adapted from the method set forth in the *Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects*, Report 466, NCHRP, 2002 (NCHRP Report 466).

Table 1: Seven Step Approach to Estimate Indirect Impacts

Step 1 – Scoping: The basic approach, effort required and geographical boundaries of the study are determined.
Step 2 – Identify the Study Area’s Goals and Trends: Information regarding the study area is compiled with the goal of defining the context for assessment.
Step 3 – Inventory the Study Area’s Notable Features: Additional data on environmental features are gathered and synthesized with a goal of identifying specific environmental issues for project assessment.
Step 4 – Identify Impact-Causing Activities of Proposed Action and Alternatives: Fully describe the component activities of each project alternative
Step 5 – Identify Potentially Substantial Indirect Effects for Analysis: Indirect effects associated with project activities and alternatives are catalogued, and potentially substantial effects meriting further analysis are identified.
Step 6 – Analyze Indirect Effects and Evaluate Results: Qualitative and quantitative techniques are employed to estimate the magnitude of the potentially substantial effects identified in Step 5 and describe future conditions with and without the proposed transportation improvement. Any uncertainty of the indirect effects analysis results are evaluated for its ramification on the overall assessment.
Step 7 – Assess Consequences and Consider/Develop Mitigation (when appropriate): The consequences of indirect effects are evaluated in the context of the full range of project effects. Strategies to avoid or lessen any effects found to be unacceptable are developed. Effects are reevaluated in the context of those mitigation strategies.

Source: TxDOT 2010

STEP 1: SCOPING

Project Attributes and Context

The first objective of an indirect impacts analysis is to define the scope of the analysis by considering the types of potential indirect impacts and the possible range of those impacts. This is done by considering the attributes and context of the proposed project, and leads to a general assessment of the level of impacts anticipated. The assessment considers the distance necessary for the impacts to attenuate from the project footprint. This approach helps to determine the level of effort and approach needed to complete the indirect impacts analysis, and is also vital in achieving the second objective of delineating the geographic extent of the indirect impacts study area, or area of influence (AOI).

The anticipated impacts associated with the proposed alteration of traffic patterns and access that could result from the build alternatives, in conjunction with results of an interview held with a representative who prepared the El Paso Metropolitan Planning Organization's (MPO) *2011 Demographic Update Technical Memorandum*, narrow the focus of this indirect impacts analysis to encroachment alteration impacts. An interview with the preparer of the demographic technical memorandum held in February 2012 revealed that the proposed Loop 375 Border Highway West Extension Project is not expected to induce development.² A consensus building process, referred to as the Forward El Paso Delphi Method, was used to rely upon the expertise of (public and private) community leaders to identify patterns in the growth and development of the community. The exercises utilized through the Forward El Paso Delphi Method to explore and define existing and proposed development projects within the MPO's jurisdiction in the 2011 demographic update technical memorandum did not identify any existing or proposed development that are dependent on the proposed project.

For example, during the "Opportunities and Constraints Group Exercise," participants were asked to identify various constraints to future development. It was agreed by the exercise participants that some of the constraints could be overcome by the private and public sector (e.g. provision of transportation access). To the interviewee's knowledge, there were no existing or proposed projects discussed that are dependent on the proposed project. Because of this finding, the need to document potential induced growth effects and effects related to induced growth is unnecessary. This indirect impacts analysis is focused solely on encroachment-alteration effects.

Definition of Indirect Impacts Study Area

Because the anticipated direct impacts would result in encroachment-alteration effects, the geographic boundary of the proposed project's AOI is delineated by traffic analysis zones (TAZ) associated with the *Mission 2035 Metropolitan Transportation Plan* (MTP) that are traversed by the four reasonable alternatives. Defining the AOI in this manner is one of several acceptable methods identified in the NCHRP Report 466. Portions of the El Paso County, Texas and Dona Ana County, New Mexico are represented in the AOI. The AOI is comprised of 21 TAZs, encompassing approximately 3,272 acres, and is illustrated in the **Exhibit (Indirect Impacts Area of Influence)**.

² Interview held with Michael Bomba (representing Alliance Transportation Group) on March 1, 2012.

STEP 2: IDENTIFY STUDY AREA TRENDS AND GOALS

Study Area Trends

The AOI accounts for a small portion of the City of El Paso and El Paso County. Existing land uses within the AOI are a testament to the industrial, commercial, and residential development that evolved since the establishment of the military and transportation presences within the present El Paso region. El Paso County was established in March 1850, with San Elizario as the first county seat. The original location of the Fort Bliss Military base was established in 1854, and the Butterfield Overland Mail arrived in 1858, again taking advantage of the route through the Basin and Range mountains. The Butterfield Overland Mail was a semi-weekly mail and passenger stage service from St. Louis, Missouri to San Francisco, California, passing through Texas. This service was initiated through an act of Congress in 1857, which authorized a mail contract for conveying letter mail, as well as passengers, twice weekly, in both directions from Missouri to California. The contract was awarded to John Butterfield and associates and was operated by him from 1858 until 1861. A year later pioneer Anson Mills completed his plat of the town of El Paso.

The railroads, following the well-established route through the region, arrived in 1881 and 1882 and significantly increased the population of the community of El Paso from 3,845 in 1880 to 15,678 in 1890. After 1900, El Paso began to develop as a modern municipality with significant agricultural, industrial, and transportation resources. The city grew from 15,906 in 1900 to 39,279 in 1910 and 77,560 in 1925. Refugees fleeing Mexico during the Mexican Revolution contributed to the city's population growth from the period dating from 1910 until approximately 1920.

Industrial development flourished in the area due to El Paso's strategic location in the Basin and Range region, proximity to important natural resources, including ore and agriculture, and bi-national labor force. The Kansas City Smelting and Refining Company constructed a large smelter at El Paso in 1887 and merged with several smaller companies in 1899 to become the American Smelting and Refining Company (ASARCO), which continued to be a major local employer into the 1980s. The completion of Elephant Butte Dam in 1916 in New Mexico ensured a steady water supply for agricultural development and helped cotton to become the predominant regional crop. Standard Oil Company of Texas (now Chevron USA), Texaco and Phelps Dodge located major refineries in El Paso in 1928 and 1929. Prohibition provided a boost to the local economy by stimulating a growing tourist trade with the drinking and gambling establishments across the border in Ciudad Juárez (W. H. Timmons 2012).

The rapid growth that characterized El Paso during the first quarter of the twentieth century slowed somewhat during the 1930s. After reaching 102,421 in the 1930 census, the population declined to 96,810 in the 1940 census. For more than 130 years, Fort Bliss has played a role in local, national and international affairs, and the relationship between the City and Fort Bliss has always been close. The military establishment was responsible for much of El Paso's growth during the 1940s and 1950s, when El Paso absorbed the town of Ysleta and greatly increased its municipal area. Postwar development brought the number of residents up to 130,003 in 1950. Fueled by a rapid military and commercial expansion, El Paso's population more than doubled during the next 10 years, reaching 276,687 in 1960. Slower but steady growth continued throughout the 1960s, with the population reaching 339,615 in 1970. Despite a period of slow growth from 1971 to 1974, El Paso's population grew by 32 percent (%) during the 1970s, to 425,259 in 1980 (W. H. Timmons 2012). The population has always been predominantly Hispanic. In 1980 the population was 62.5 percent Spanish-surnamed, and the interaction between the Spanish-Mexican and the Anglo-American cultures continues as a

dominant feature in El Paso's identity. According to the U.S. Census Bureau, the City of El Paso's population increased approximately 15 percent between 2000 and 2010, from 567,246 to 649,121 persons. Currently, much of the future development demands within in the City of El Paso (including the AOI) is residential and commercial in nature. Fort Bliss is still a driving force of the economy as well as the Maquiladora factories, the University of Texas at El Paso (UTEP) and the Texas Tech University Health Science Center.

Study Area Goals

Several regional and local planning initiatives are focused on areas partially or wholly contained by the AOI. Below are summaries of various local government, neighborhood, and transportation plans that are relevant to the indirect impacts analysis.

The Plan for El Paso: City of El Paso Comprehensive Plan (2012)

The Plan for El Paso: City of El Paso Comprehensive (Plan El Paso) provides the basis for El Paso's regulations and policies that guide its physical and economic development. *Plan El Paso* was approved by the El Paso City Council in March 2012. *Plan El Paso* establishes priorities for public action and direction for complimentary private development decisions. *Plan El Paso* contains illustrative plans, diagrams, maps and pictures to make its concepts clear and accessible to City officials, residents, developers, community groups, and other stakeholders. Additionally, the comprehensive plan provides a flexible framework that can be updated, revised and improved upon over time. Each element of the plan concludes with goals and polices that set broad policy directions and identify specific actions that would enhance the City's quality of life, respect its natural environments and support complimentary economic growth and development. Over the past decade, the City of El Paso has developed special study area plans that deal with unique community and neighborhood issues. The creation of these study area plans was called for by the City's 1999 Plan for El Paso and they have been developed in closed coordination with local residents. The new comprehensive plan does not supersede these earlier plans. They would remain in effect except for any provisions that may conflict with the new plan, until such time as the plans are amended or repealed by the City Council (City of El Paso 2012).

The Plan for El Paso: Connecting El Paso (2010)

The Plan for El Paso: Connecting El Paso developed a vision for an updated transportation system for the City of El Paso including the regulatory groundwork for transit-oriented development. In the next five years the City would complete a bus rapid transit plan and street improvements at three transit centers, including the Oregon corridor within the study area, and compact, mixed-use, transit-oriented development is expected to follow in time. The plan also proposes redevelopment at the former ASARCO site, which includes over 450 acres of potentially developable land near the center of the City. At the ASARCO site connected networks of pedestrian-friendly streets, protected open spaces, office and commercial uses, and regional landmark destinations are planned. The plan was the result of a year-long initiative involving a multi-disciplinary consultant team and hundreds of El Paso residents with close support of local governments, the trustee for the ASARCO site, and the Texas Department of Transportation (TxDOT). The plan was approved by the City Council in January 2012.

El Paso Downtown 2015 Plan (2006)

The goal of the *Downtown 2015 Plan* is to create revitalization by providing opportunities to live, work, shop and play in the downtown region, while fostering a productive and energetic economy for all citizens of El Paso (City of El Paso 2006).

The *Downtown 2015 Plan* sets a vision through which the public and the private sector work together to increase the value and attractiveness of the downtown area. The *Downtown 2015 Plan* was adopted by the El Paso City Council on October 31, 2006. The redevelopment districts and “Incentive Districts” have been set up for the area; these boundaries have been carefully drawn to include those areas which would best benefit from redevelopment actions. The “Incentive Districts” would allow property owners to take advantage of publicly supported programs for the renovation and upgrading of existing buildings. These are the areas that are in most need of reinvestment; where lots are vacant, tenancy is low and where commercial spaces are underutilized. These are the areas with the most potential for aggregation of parcels for significant new investment. These “Incentive Districts” also includes areas of Segundo Barrio where selective infill of new mixed-use projects can integrate with the existing historic fabric (City of El Paso 2006). Many of these areas are located within the study area.

Chihuahuita Neighborhood Plan (2004)

The Chihuahuita Neighborhood Plan was adopted by the City Council March 2, 2004. The goal of the Chihuahuita Neighborhood Plan is to preserve, protect and improve the quality of residential life for the current and future residents of the neighborhood (City of El Paso 2004). The Chihuahuita Plan is guided by the *Downtown 2015 Plan*. The Chihuahuita Plan outlines objectives and actions to reach this goal. The community of Chihuahuita is located entirely within the AOI.

SmartCode (2008)

The City of El Paso adopted a SmartCode in July 2008. The purpose of the SmartCode is to provide a form-based, unified land development ordinance that is an alternative to conventional zoning and subdivision codes. The SmartCode places an emphasis on scale, form and context rather than land use and is intended to replicate the benefits of early twentieth century neighborhoods by promoting more walkable, sustainable development that strives to merge the amenities in the public realm with the activity of the private realm (City of El Paso 2008).

Mission 2035 Metropolitan Transportation Plan (MTP)

The MPO has been charged with coordinating transportation planning for the region. The MPO program is an \$8.99 billion, 26-year multi-modal plan with roadway improvements, transit improvements, safety improvements and environmental and economic vitality improvements. The MPO’s Metropolitan Transportation Plan (MTP) incorporates policies, goals and objectives, projected transportation demand, regional forecast of land use, housing and employment patterns/trends. The *Mission 2035 MTP* was adopted by the MPO in August 2010 and was approved for conformity by the Environmental Protection Agency (EPA) in January 2011. The *Mission 2035 MTP* covers the years 2010 through 2035.

A portion of the proposed project is an important element of the *Mission 2035 MTP*. The *Mission 2035* covers Park Street to United States Highway (US) 85/Yandell Drive. Amendments to the MTP would be required to reflect the current limits of the proposed project (Racetrack Drive to US 54). The *Horizon 2040 MTP*, which is currently under development, will cover the entire project limits.

STEPS 3 and 4: INVENTORY NOTABLE FEATURES and IDENTIFY IMPACT-CAUSING ACTIVITIES

Notable Features Inventory

The baseline conditions for environmental resources that exist before project construction are included in **Chapter 3** of the Loop 375 Border Highway West Extension Project DEIS. The AOI is generally developed with industrial, commercial, single and multi-family residential, public roadways and railroad track land uses. Notable features that could be indirectly impacted within the AOI are listed in **Table 2** and illustrated in the **Exhibit: Indirect Impacts Area of Influence**. These notable features are composed of valued environmental components from community and economic perspectives, as well as vulnerable elements of the population (e.g. minority and/or low-income populations). As generally documented throughout the DEIS, each of these notable features plays a unique role in the social, historic, or economic contexts within the AOI.

Table 2: Notable Features Inventory

Notable Feature	Type
Downtown El Paso	Valued Environmental Component (Community and Vulnerable Population)
Chihuahuita	Valued Environmental Component (Community and Vulnerable Population)
Buena Vista	Valued Environmental Component (Community and Vulnerable Population)
La Calavera Canyon	Valued Environmental Component (Community and Vulnerable Population)
Old Fort Bliss/Hart's Mill	Valued Environmental Component (Community and Vulnerable Population)
Anapra	Valued Environmental Component (Community and Vulnerable Population)
CEMEX Plant	Valued Environmental Component (Economic)
ASARCO	Valued Environmental Component (Economic)

Impact-Causing Activities

Transportation projects such as the proposed Loop 375 Border Highway West Extension Project could involve a variety of impact-causing activities. General types of project impact-causing activities include the following (NCHRP 2002):

- Modification of regime effects
- Land transformation and construction
- Processing of materials during construction
- Land alteration as a result of construction
- Resource renewal
- Changes in traffic
- Waste emplacement and treatment
- Chemical treatment

- Access alteration

Based on the assessments provided in **Chapter 4** of the Loop 375 Border Highway West Extension Project DEIS, the activities listed above that are primarily applicable to the remaining steps of the indirect impacts analysis includes:

Land transformation/construction and alteration – Industrial land use would experience the largest impacts from land use conversion ranging from 91.3 acres (Reasonable Alternative 3) to 80.6 acres (Reasonable Alternative 1).

Changes in traffic – The proposed project is expected to improve mobility and the new controlled-access facility would provide a “connecting link” for the continuation of Loop 375, in addition to providing an alternative route to Interstate Highway 10 (I-10) for congestion relief and incident management.

Access alteration – The reasonable alternatives offer improvements to travel patterns and accessibility within the study area to a large extent. Consolidating access through downtown El Paso would be complimentary to the pedestrian and transit friendly plans proposed by the City of El Paso’s comprehensive plan (*The Plan for El Paso, 2012*) and associated *El Paso Downtown 2015 Plan*. This would be accomplished by rerouting some of the through traffic from local neighborhood streets as projected by the proposed project’s traffic models. The proposed project could accommodate sidewalks along the non-tolled portion of the reasonable alternatives. However, the reasonable alternatives would not include sidewalks on the limited-access toll facility.

All of the reasonable alternatives would positively impact mass transit routing and access through downtown El Paso. TxDOT, the City of El Paso, and SunMetro are coordinating the proposed project’s implementation with SunMetro’s existing bus system and planned Rapid Transit System improvements. These agencies agree that the proposed Coles Street-Paisano Drive interchange would provide better access to the existing Loop 375 compared to the existing facility conditions along Santa Fe Street. The proposed closure of Santa Fe Street at Loop 375 would also allow for safer bus and associated pedestrian flow in and out of the SunMetro Downtown Transfer Facility. As a result of the proposed improvements, the high volume of traffic currently entering downtown from Loop 375 using Santa Fe Street would enter from either the proposed Coles Street -Paisano Drive interchange or Campbell Street.

Because there is no continuous free-flow route (other than I-10) that allows movement from one side of downtown El Paso to the other, the proposed project would provide a continuous route across downtown to address this issue. Additionally, as an alternate route to I-10, the proposed project would provide incident management opportunities for the I-10 facility, therefore reducing congestion on I-10 after a traffic accident. Each Reasonable Alternative would cause changes in access, and details regarding these changes in access are provided in **Section 4.2.5.2** of the Loop 375 Border Highway West Extension Project DEIS.

STEPS 5 and 6: IDENTIFY AND ANALYZE POTENTIALLY SUBSTANTIAL INDIRECT IMPACTS

The objectives of Steps 5 and 6 are to identify the probability for encroachment-alteration effects potentially associated with the proposed project and compare project impact-causing actions with the AOI's goals and notable features in order to explore potential cause-effect relationships.

Ecological Effects

The land within the AOI totals approximately 3,272 acres and is generally urbanized with fragmented development. Potential loss of habitat would occur along the boundaries of habitat already fragmented by the original construction of existing roadway facilities; and construction of surrounding industrial, commercial and residential properties. Waters of the U.S. and wetlands in the AOI are not anticipated to be indirectly impacted because the proposed project is not likely to result in indirect land use changes beyond conversion to transportation use.

No rare vegetation series (S1, S2 and S3) communities would be directly impacted by the build alternatives; indirect impacts to these vegetation communities are not anticipated. No known habitat for federal candidate species (S1 or S2 vegetation communities) occurs within the AOI.

Conversion of land use from industrial to transportation ROW would restrict industrial capabilities west of downtown El Paso; however, the trend of industrial land use within the AOI is transitioning to a less intensive use exemplified by the recent closing of the ASARCO smelter plant and adjacent industrial properties. Because of this trend, indirect impacts associated with conversion of land use are not expected to be adverse.

As stated in **Section 4.6.3.2** of the Loop 375 Border Highway West Extension Project DEIS, the only alternative considered during the course of project development that would avoid encroachment on the floodplains altogether was the No-Build Alternative, which was determined to be not practicable and would not meet the Need and Purpose of the project. The reasonable alternatives were quantitatively examined for encroachments on the study area's floodplains. The proposed project would conform to state floodplain protection standards. Impacts to the Federal Emergency Management Agency (FEMA) 100-year floodplain would vary from approximately 6.0 acres as a result of Reasonable Alternative 3 (roadway and drainage pond proposed ROW combined) to approximately 28.0 acres as a result of Reasonable Alternative 1 (roadway and drainage pond proposed ROW combined). The proposed project is not anticipated to create a significant encroachment on any area floodplains as defined in 23 C.F.R. 650. The insignificant impacts on floodplains would be mitigated by the construction of drainage ponds. In addition, the City of El Paso and TxDOT have a Stormwater Management Program (SWMP) in place to address water quality concerns and other issues related to stormwater runoff. Indirect effects to floodplains as a result of the proposed project are anticipated to be minimal.

Encroachment-alteration indirect impacts were considered in relation to air quality. The AOI includes the portion of El Paso County which is in moderate non-attainment for particulate matter-10 microns (PM₁₀) and the area that is in maintenance for carbon monoxide. The project is currently not in the 2011-2014 Statewide Transportation Improvement Program (STIP); however, it will be added during the next revision of the STIP. Please refer to **Section 4.4** of the Loop 375 Border Highway West Extension Project DEIS for the air quality assessment for the proposed project.

Based on the results of Steps 1 through 4 that evaluated the possible project-related actions that can indirectly impact air, the proposed project would not be anticipated to cause indirect air quality impacts in the AOI. No change in attainment status is anticipated within the study area as a result of emissions associated with the proposed project. In order for the region to achieve PM₁₀ attainment, a variety of point, non-point and mobile source emission reduction strategies must be implemented for the entire El Paso area as outlined in the State Implementation Plan (SIP). Emissions would likely be lower than present levels in future years as a result of the EPA's national control regulations (i.e., new light-duty and heavy-duty on-road fuel and vehicle rules and the use of low sulfur diesel fuel). Even with an increase in vehicle miles traveled (vmt) and possible temporary emission increases related to construction activities, the U.S. Environmental Protection Agency (EPA)'s vehicle and fuel regulations, coupled with fleet turnover, will cause substantial reductions of on-road emissions over time. As the proposed project is not anticipated to result in indirect air quality impacts, further discussion is not necessary.

Socioeconomic Effects

Encroachment-alteration effects to socio-economic resources are potentially substantial due to the improved access and mobility that would occur as a direct result of the reconfiguration of access to existing facilities to accommodate the proposed facility, as well as construction of new access points. Two broad forms of socio-economic impacts include: 1) changes in travel patterns and access, and 2) direct relocation of homes and businesses. These direct impacts may lead to indirect effects on neighborhood cohesion, neighborhood stability (maintained residential and commercial ownership ratios, safety, etc.), travel patterns, changes in the local economy, changes in access to specific services, recreation patterns at public facilities (public use of facilities such as parks and school yards), pedestrian dependency and mobility, and perceived quality of the natural environment, among others. Changes in access can include driveway changes, relocations of ramps, introduction of raised medians, alterations of intersections that restrict access to local streets, or the introduction of bicycle and pedestrian facilities. These may result in changes in travel patterns throughout an area. For example, enhancing mobility and adding capacity to an existing facility through a built-out urban environment such as downtown El Paso may alter travel patterns and the economics of travel patterns and corresponding land uses by increasing both travel demand and supply to the proposed facility away from existing roadway facilities.

Changes in Travel Patterns and Access

In terms of traffic operations, the improvements associated with the Loop 375 Border Highway West Extension Project are expected to address existing issues related to system capacity, system linkage and safety. The improvements are anticipated to improve mobility by providing additional infrastructure to accommodate traffic demands and aid congestion relief for the region and incident management, provide a connecting link for the continuation of Loop 375 by improving connectivity, and improve crash rates and provide an incident management route for I-10. Populations representing notable features associated with local communities (Downtown El Paso, Chihuahuita, Buena Vista, and La Calavera Canyon) would experience some degree of adverse impact due to changes in or loss of access, and increased noise and visual intrusion. However, populations within these communities (including the Old Fort Bliss/Hart's Mill and Anapra communities) could also benefit from the indirect effects of improved east-west mobility, improved local and regional access, improved safety, reduction of incident delay along I-10, inclusion of context sensitive solutions related to aesthetics as well as a design that coexists with border security.

As stated in **Section 4.2.5.2** of the DEIS, all of the reasonable alternatives would require changes in access to each of the eight notable features within the AOI. Overall the access changes associated with the proposed facility can be expected to have minor negative impacts on the local communities.

Regarding Downtown El Paso, the change of Santa Fe, Kansas and Park Streets to cul-de-sacs or turnarounds as well as the closing of Oregon Street at 9th Avenue may also have some impacts to business in that area; however, to compensate for these reduced access points, the Coles Street-Paisano Drive interchange is proposed. It is not anticipated that these downtown business would be negatively impacted in the long term by these changes in access as the proposed Coles Street-Paisano Drive interchange would provide more convenient access to most of the downtown area via Paisano Drive.

Regarding the Chihuahuita community, the proposed project compliments the *Chihuahuita Neighborhood Plan* such as the neighborhood boundaries, residential core area, park and open space area, and neighborhood commercial areas would generally remain intact as a result of the proposed build alternatives. Residents of this community would retain pedestrian access to the adjacent downtown El Paso, but could endure different and longer travel routes to the east side of El Paso due to the access changes proposed by Reasonable Alternatives 1, 2, 3 and 4.

The residents of the Buena Vista community would be some of the least affected in the project vicinity as their access would remain similar to existing conditions; however, routing may be different depending on the final Recommended Preferred Alternative. Residents of La Calavera Canyon would be impacted under all the proposed reasonable alternatives because trips to eastbound Paisano Drive would be approximately 1.1 miles longer than the existing condition due to the need to travel west then make a U-turn. Trips to I-10 would be approximately 850 feet longer compared to the existing condition.

The community of Old Fort Bliss/Hart's Mill would not be impacted by access changes associated with the proposed project. The community of Anapra would experience positive impacts in the form of increased access to Paisano Drive and the proposed project.

Employees and visitors of the CEMEX plant could experience a change in accessing the plant's entrance depending on the reasonable alternative. Reasonable Alternatives 2 and 3 would enhance the safety of the existing entrance to the plant by means of adding a signal and gate arms at the existing at-grade rail crossing at Paisano Drive.

The former ASARCO site would be accessed generally as it is today.

Other Socioeconomic Indirect Impacts

With respect to relocations and displacements, indirect impacts would be driven by the relocation of the residential and commercial properties potentially displaced by the proposed Loop 375 Border Highway West Extension Project. Examples of indirect impacts due to relocations and displacements include a minor reduction in the supply of affordable housing for the potentially displaced households, changes in residential and commercial property values due to the proposed improvements, changes in local tax base due to the anticipated displacements, and impacts to the employees (such as increased commuting time) who could be displaced by the proposed improvements. However, the majority of the traveling public, adjacent residential populations and commercial workforce would indirectly benefit from the proposed improvements due to improved east-west mobility.

In terms of residential indirect impacts, the proposed project's impact on affordable housing associated with any of the build alternatives may slightly decrease the stock of affordable housing supply in the immediate area. However, as discussed in **Section 4.2.2.1** in the DEIS, current online real estate data indicates sufficient vacancies exist to accommodate the anticipated residential displacements throughout the same ZIP codes. In addition, planning efforts within the AOI are focused on increasing housing choices for residents of all income levels. Residential properties located near the proposed facility which are not physically impacted by the proposed improvements may experience a change in market value, either positive or negative. Changes to community/neighborhood cohesion, neighborhood stability, changes in access to specific services, or recreation patterns at public facilities are not expected to occur.

With respect to encroachment-alteration effects to socio-economic resources, indirect impacts would be driven by changes in travel patterns and access associated with the proposed Loop 375 Border Highway West Extension Project. The potential indirect impacts resulting from the implementation of the proposed improvements would include improved vehicular access to employment opportunities, markets, goods or services, residential uses and public facilities due to increased vehicular mobility. Other factors, such as real estate market conditions, local government development codes and plans, city financing opportunities (for various public facility improvements), anticipated growth, public facility and amenities siting (schools, health care facilities, open space, etc.), changes in energy costs and other local and regional roadway improvements play a role in nearby land development investment decisions. However, real estate investment decisions are typically made with regard to factors such as transportation access and mobility. Although not a factor for the demand of these development projects, the proposed project is expected to complement these land development trends.

STEP 7: ASSESS CONSEQUENCES AND CONSIDER/DEVELOP MITIGATION

(when appropriate)

In summary, the proposed improvements would result in beneficial impacts on the overall socio-economic conditions within the AOI, with some notable features bearing minor adverse impacts related to access depending on the build alternative. The potential for all eight notable features to be adversely impacted is unlikely as a result of the proposed project. Improved access, mobility, linkage and safety are anticipated to benefit and support the planned transition within the AOI to a more pedestrian and transit friendly environment as suggested by the City of El Paso's *SmartCode* (2008), *The Plan for El Paso* (2012 comprehensive plan), *Plan El Paso 2010: Connecting El Paso* and the *El Paso Downtown 2015 Plan*.

Land use planning practices currently implemented by the City of El Paso would help manage any indirect impacts on regional and community growth within the AOI including impacts related to future development or redevelopment within the AOI, potential increased population density and localized economic growth. Examples of regulatory growth and development management techniques include subdivision regulations, zoning ordinances, land development regulations and tree preservation ordinances. The responsibility of transportation providers such as TxDOT, local and regional transit agencies and local governments would be to implement a transportation system to complement land use or development management techniques currently in place. Policy guides and implementation tools are already in place within the City of El Paso to ensure certain types of development or redevelopment occur within the AOI.

It is anticipated that the proposed project would have a minor adverse effect on a few of the community notable features within the indirect impacts AOI due to changes in access, and a beneficial effect on a majority of the community and commercial notable features due to improvements associated with east-west mobility and safety. Indirect impacts related to Downtown El Paso with respect to access modifications are anticipated to occur amicably with the City of El Paso's goals to enhance redevelopment of the area as a pedestrian and transit friendly environment. The proposed Coles Street-Paisano Drive interchange would mitigate reduced access to Downtown El Paso by providing more convenient access to most of the downtown area by way of Paisano Drive for travelers from the east, and travelers from the west would have access to Paisano Drive and east of the downtown area by way of Coles Street.

REFERENCES

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http://planelpaso.org/2011/01/final-connect-el-paso-report-for-asarco-and-tod-areas-online-now/connecting-el-paso-report_120910_lores-1/. Approved January 18, 2011.
- City of El Paso. 2012. *The Plan for El Paso* (2012 comprehensive plan),
<http://planelpaso.org/comprehensive-plan-elements/>. Approved March 2012.
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Exhibit
Indirect Impacts Area of Influence

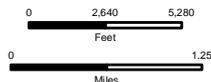
Path: \\Aus000\jobs\42085 Border Hwy West\Techprod\GIS\MX\DEX\HT\PL_010\DEIS\2nd_Submittal\Chapter_5\Appx_J_Indirect_Impacts.mxd Date Saved: 8/29/2012



- | | |
|------------------------|-------------------|
| Alternative | Notable Features |
| Interstate | Area of Influence |
| US Highway | Rio Grande |
| State Highway | |
| State Loop | |
| International Boundary | |



1:79,200
1" = 6,600'



Sources

Communities: HNTB, 2011
Area of Influence: El Paso MPO
CEMEX, ASARCO: City of El Paso parcel data



Loop 375 Border Highway West Extension Project

From Racetrack Drive to US 54

Indirect Impacts Area of Influence

El Paso County, Texas

CSJ: 2552-04-027

August, 2012