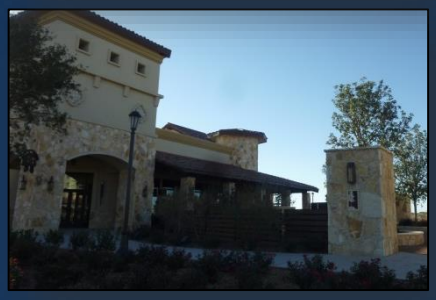
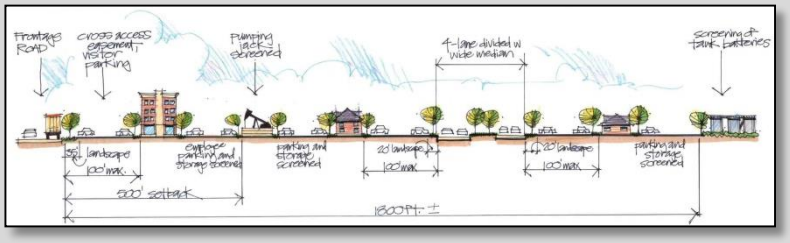
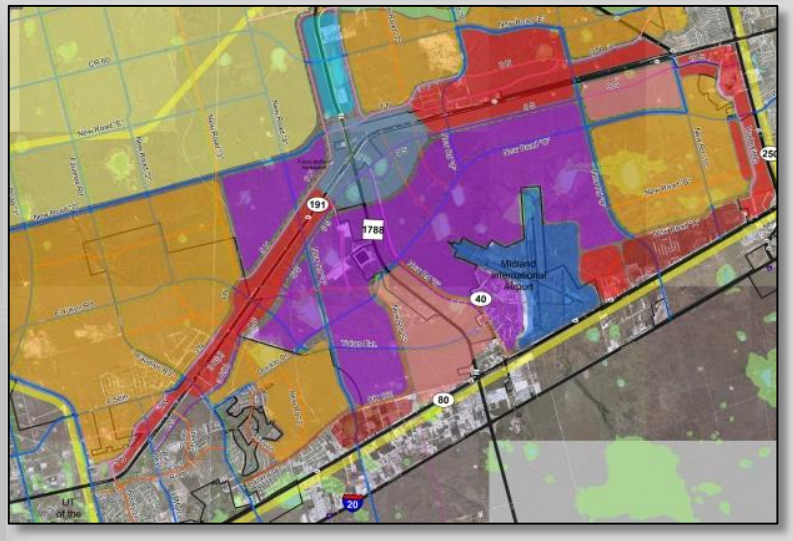
Midland Odessa Transportation Organization

Midessa Land Use Transportation Study

Final Report







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September 12, 2014

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Introduction

SH 191 Corridor Study/Management Plan Background

In 2011, the Midland Odessa Transportation Organization (MOTOR) initiated the formulation of the SH 191 Corridor Study/Management Plan to address rapid growth occurring along the SH 191 corridor. The purpose of the study was to examine existing development patterns and development expectations and derive high-level land use and transportation strategies for the area that would provide a framework for future infrastructure investment.

State Highway 191 serves as a vital connection between the cities of Midland and Odessa. This 14-mile corridor not only provides a linkage between these two employment centers, but also provides accessibility to vast areas of vacant land that is now bustling with activity due to the resurgence of the oil and gas industry in the region. MOTOR, as the MPO for the region, determined that a corridor planning approach for the SH 191 corridor was needed in order to help define, protect and coordinate development in the most opportunistic area for growth in the Midland-Odessa region.

The SH 191 Corridor Management Plan was built upon strategies and vision defined and established in the 2010-2035 Metropolitan Transportation Plan (MTP) and built upon the following tenets; two cities functioning as complementary urban centers, a diversified economy attracting regional investment, high quality communities supporting multi-generational neighborhoods with transportation and housing choices, and access to a range of recreational and cultural activities.

Strategies within the SH 191 Corridor Management Plan were focused on several different areas. The ultimate recommendations of the plan were to:

- Identify a set of strategies to maintain and enhance access, mobility, safety, aesthetics, economic development and environmental quality along the SH 191 corridor;
- Provide land use and zoning recommendations to local officials to manage growth and development in the corridor and minimize the overwhelming impacts of the oilfield operations;

- Foster intergovernmental cooperation between the cities and counties by addressing common planning and development issues;
- Identify existing historic and natural assets, including the corridor view sheds;
- Address transportation issues that may arise from changes in land use and design concepts for future development of the corridor;
- Build further consensus on a vision for land use and design concepts for future development;
- Identify specific issues and opportunities related to improving transit, access management and bicycle and pedestrian use as well as consider transportation options unique to West Texas, such as equestrian trails and linkages;
- Identify linkages/access to intercity transit and identify linkages/access to regional transit projects or other recreational or tourism-related resources;
- Identify areas where interagency and/or inter-municipal partnerships are necessary to implement the plan;
- Identify areas where aesthetics can help create a stronger sense of place, boost civic pride and promote neighborhood vitality.

Ultimately, a coordinated plan that seeks the above objectives helps to ensure that development along the corridor is coordinated and compatible and that the best interests of both the cities of Midland and Odessa are achieved. Having a plan for transportation and development will ultimately protect property rights, increase property values and create a safe and aesthetically pleasing corridor.

It is important to note that the SH 191 Corridor Study/Management Plan is not a mandate. This plan serves as a guide for decision makers in Midland and Odessa as future development occurs. The SH 191 Corridor Study/Management Plan is a flexible guide that depicts a potential ultimate scenario for development and contains transportation options that are coordinated with the ultimate land use scenario.

Midessa Update

Since the completion of the SH 191 Corridor Study/Management Plan, rapid growth has occurred. In addition to rapid growth, several new factors have been introduced. The initial plan provided extensive, high-level framework for land use and transportation decisions within the region. The initial SH 191 Plan also contained a wide array of development and aesthetic recommendations, access management standards, oil and gas setbacks and short and long-term strategies. Due to the continued rapid growth, and new factors, decision-makers believed an update to the SH 191 Plan should be performed.

The Midessa update is intended to serve as an update to the SH 191 Plan in light of recent developments. This study redefines the vision for the SH 191 area through public and stakeholder input, addresses new factors that did not exist at the time of the initial study and will adjust, where necessary, the land use and transportation strategies for the SH 191 corridor to reflect known changes.

Finally, the Midessa update will refine and adjust the short and long-range implementation action items contained within the SH 191 study. Ultimately, reexamining land use, transportation and implementation strategies will ensure the applicability, relevance and comprehensiveness of the plan

and will ensure that land use and transportation strategies are rooted in updated information, particularly important due to the rapidly changing development environment within the region.

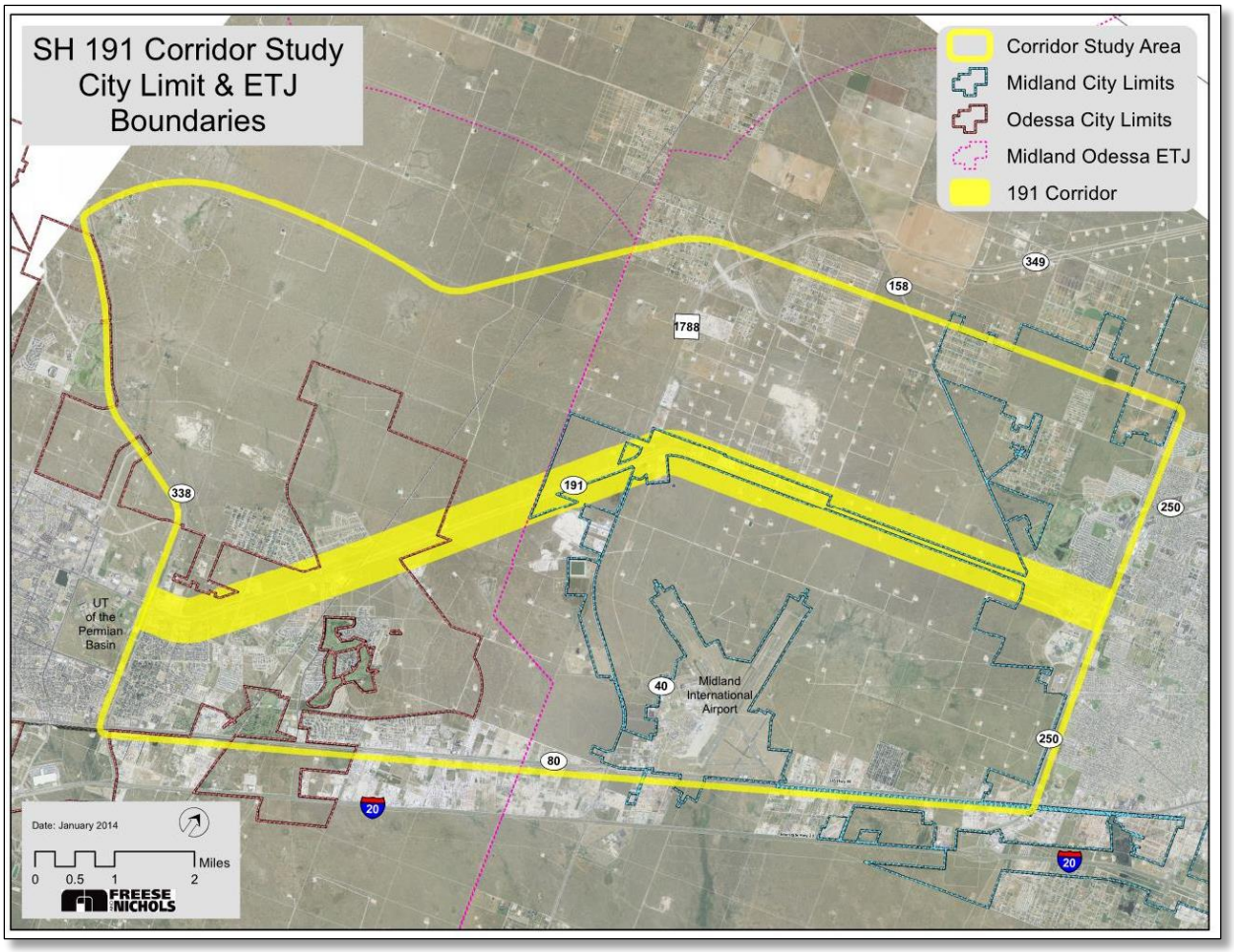
Study Area Boundary

The SH 191 study corridor is a 14-mile segment of highway bound by Loop 338 in Odessa and Loop 250 in Midland. SH 191 is an access controlled highway with frontage roads and currently contains seven grade separated interchanges. Project planning conducted as part of the initial study suggested the potential for three additional interchanges aimed at facilitating and supporting a larger sub-area transportation network.

The initial area of the corridor study encompassed 1,000 feet to either side of the frontage roads for evaluation of the corridor. After examining a range of issues including transportation connectivity and future road requirements, land use potential and associated development impacts, infrastructure needs, and timing of capital projects, it was determined that planning for a 14-mile corridor would require a larger area in order to properly consider area-wide transportation issues and needs.

The corridor sub-area encompasses 54,201 acres or slightly over 84.7 square miles. A break out of area within each jurisdiction is detailed in Figure 1.

Figure 1: SH 191 Study Area Boundary



Existing Conditions

A detailed assessment of the study area was conducted in the SH 191 Corridor Study/Management Plan to gain a full understanding of the issues and needs of the SH 191 corridor. Items evaluated included; factors affecting corridor development, existing land use, current zoning regulations, influences on future development, private development initiatives, current traffic conditions, current access management practices, best practices in corridor management and an assessment of current multi-modal transportation systems.

Existing Land Use

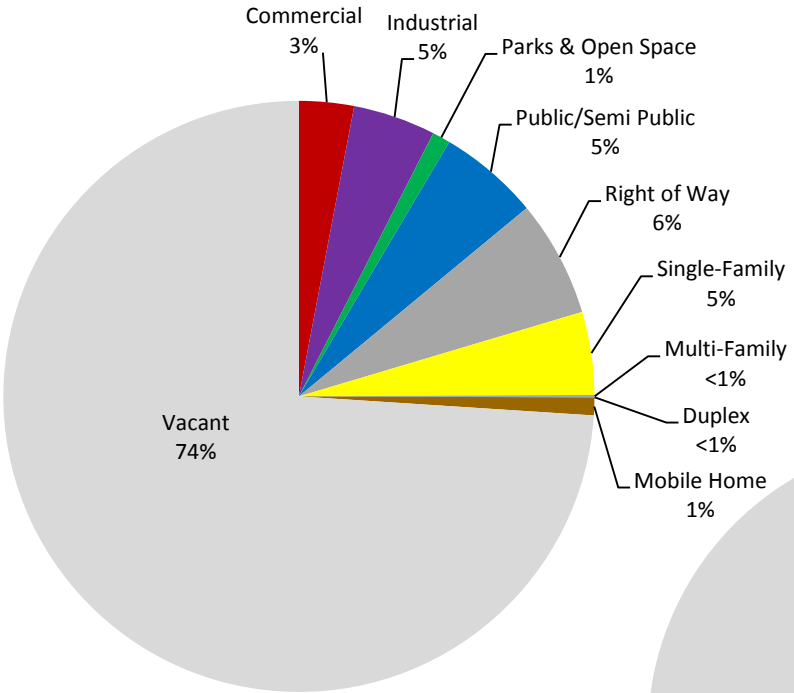
The study area is divided between the City of Midland and the City of Odessa. Both the cities of Midland and Odessa have approximately 7,500 acres within the study area. The extraterritorial jurisdiction (ETJ) of each community expands over a much larger area. When the ETJ is combined with the respective city limit boundary, the planning area for each community is established. When ETJ is considered, the cities of Midland and Odessa have approximately 28,900 acres and 22,500 acres respectively within the SH 191 planning area.

The vast majority of land within the SH 191 planning area is currently vacant. Of the total 51,377 acres, approximately 39,000 acres, or 76 percent, is vacant. The highest developed land use within the corridor is currently single-family land use comprising 2,544 acres, or 5 percent of the total land use acreage. The second highest developed land use within the corridor is industrial comprising 1,930 acres or 4 percent of the total land area.

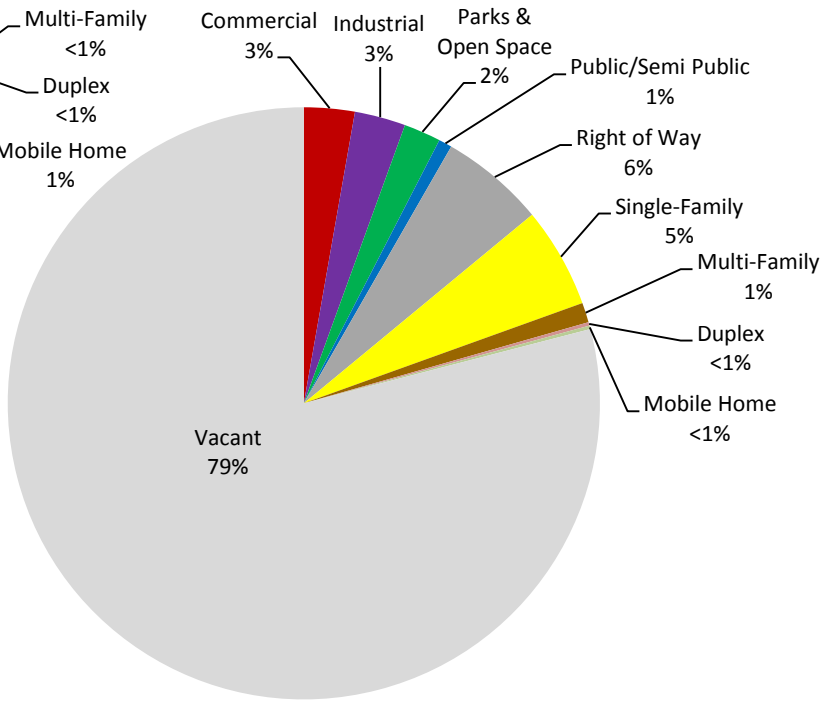
Table 1: Existing Land Use Acreage in Study Area

Land Use Type	Midland			Odessa		
	Midland	Midland ETJ	Total	Odessa	Odessa ETJ	Total
Commercial	611.3	254	865	235	387	623
Industrial	336.5	967	1,304	158	469	627
Parks & Open Space	284	0	284	70	385	455
Public/Semi Public	1,590	0	1,590	163	0.4	163
Right of Way	1,165	678	1,842	1201	86	1286
Single-Family	1062	246	1,308	720	516	1236
Multi-Family	25.3	14	39	243	0	243
Duplex	0	0	0	43.0	0	43
Mobile Home	0	280.8	281	0	43	43
Vacant	2,504	18,849	21,353	4,735	13,057	17792
Total	7,578	21,288	28,866	7,567	14,944	22,511

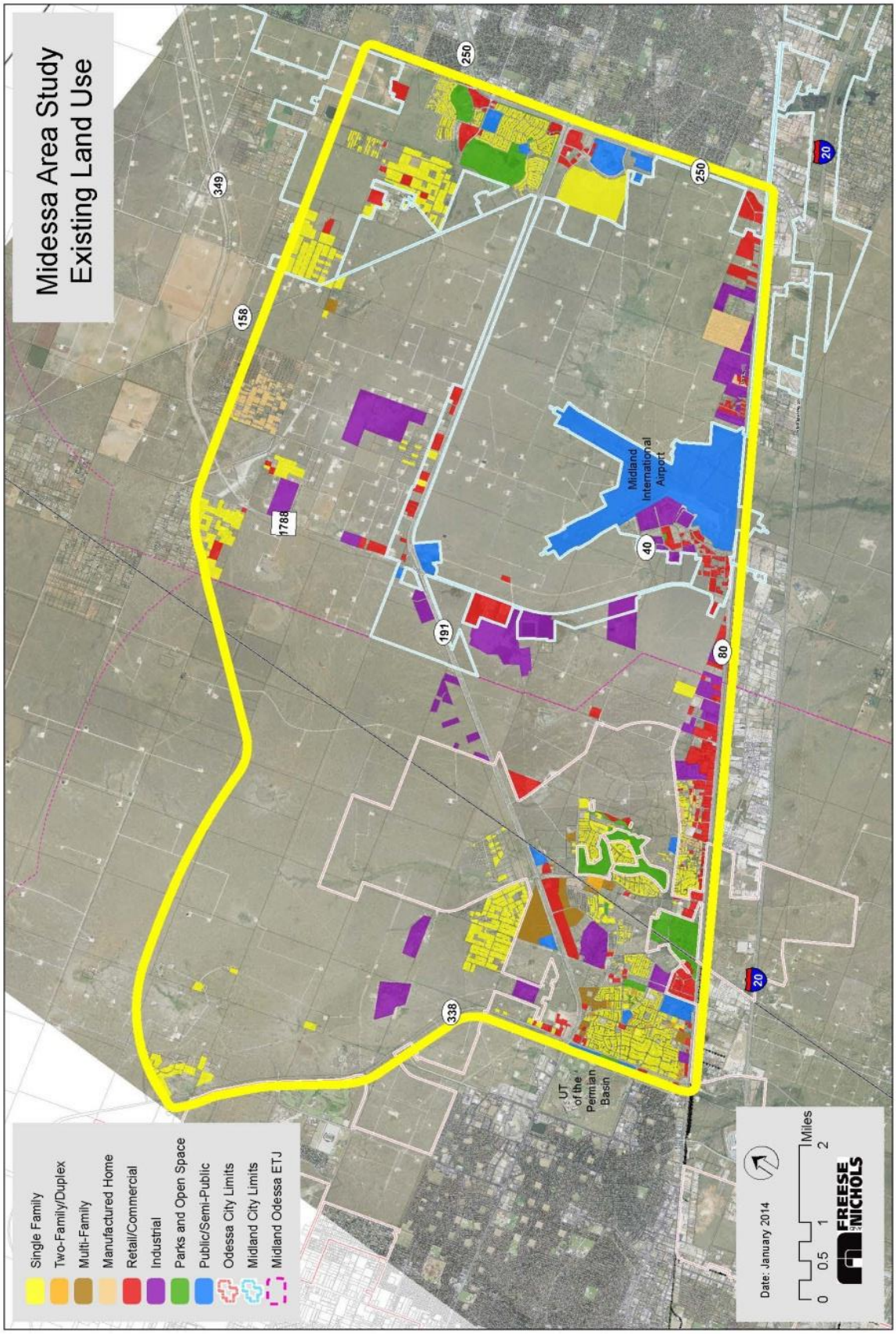
Study Area Land Use Breakdown in Midland



Study Area Land Use Breakdown in Odessa



Existing Land Use Map



Existing Land Use Changes

Since the SH 191 Corridor Study/Management Plan was adopted, several existing land use changes have occurred. On the eastern side of the corridor, the Tradewinds Boulevard area continues to develop. Additional residential construction is occurring within the Betenbough Homes development along with the D.R. Horton residential development. Both of these residential developments are occurring near the southwest intersection of Tradewinds Blvd. and Deauville Blvd. In addition to new residential, office construction along Tradewinds Blvd. is also occurring ranging in size from a larger scale between Tradewinds Blvd. and Loop 250 to smaller boutique office along Tradewinds Blvd. adjacent to Betenbough development.

Along the far southwestern side of the Tradewinds corridor, multifamily and retail development is occurring. The most significant addition to the area is the Cinergy Cinema which opened October 2013 and is located at Liberty Drive and Starboard Drive. The Tradewinds Blvd. corridor continues to grow as a mixed-use area with the combination of retail, office and entertainment uses.

On the western side of the SH 191 study area, rapid growth continues to occur in Odessa, particularly in association with the Parks Legado development. Between Tres Hermanas Blvd. and SH 191, the retail component of Parks Legado continues to expand along with a new Marriot hotel, which opened October, 2013. Single-family and multi-family development continues to occur to the south and east of Tres Hermanas Blvd. Additional hotel and office uses are being developed at the intersection of Billy Hext Road and SH 191. In November 2012, a new Stripes convenience store opened and construction is being finalized at Mesquite Crossing, a large multifamily complex being constructed at the northwestern intersection of Faudree Road and SH 191.

Existing Transportation Facilities

The SH 191 Corridor Study/Management Plan conducted an assessment of existing traffic conditions to serve as a basis for the establishment of mobility strategies for long-term development within the corridor. As part of this task, an analysis of the physical characteristics, planned improvements, and development influences of the corridor was conducted. Minimal, if any, changes have occurred since that assessment was conducted.

Regional Connectivity

SH 191 serves as a critical linkage between Midland and Odessa. In addition to supporting east-west mobility demands of Interstate 20 and Business 20, SH 191 provides centralized access to each city center, connection to Loop 338 and Loop 250, FM 1788/SH 349, SH 158, and extended connectivity to US Highway 385 and Business State Highway 349-C.

Roadway Characteristics

SH 191 is an access controlled rural highway consisting of four main lanes and two-lane frontage roads. All major intersections within the study area of SH 191 are grade separated and include; Loop 338 (Headlee Street), Billy Hext Road, Faudree Road (Spur 588), FM1788/SH 349 (Tom Craddick Highway), CR 1275, SH 158 (Andrews Highway), and Loop 250.

Traffic control of intersecting streets with the SH 191 frontage roads are stop controlled with the exception of Loop 338, Loop 250, SH 349 and Faudree Road, which are signalized. Roadway configurations for most intersections contain separate channelized turn lanes, except for CR 1275 which contains only a two-lane cross-section. U-turns exist within the interior of most interchanges, with the exception of the east side of Faudree, CR 1275 and the west side of Loop 250. The design of bridge crossings contain additional area between supports and abutments that will enable the implementation of U-turns where they currently do not exist. At Loop 250, the SH 191 main lanes are depressed below the Loop 250 frontage roads (three level interchange) and would require a separate bridge structure. As demands warrant, long-term installation of a U-turn at this location would enhance peak hour operations of this box diamond interchange.

Access to/from SH 191 main lanes are configured in a "diamond" format to grade separated intersections. Approach distances from exit ramp gores to intersecting streets range from 600-1,400 feet, with the exception of FM 1788 which is 2,800 feet due to the curvature of the highway at that location. Departure distances from intersecting streets to entry ramps range from 800-1,800 feet. Minimum distances to/from site driveways from the painted ramp gores appear to meet minimum distances for posted speeds.

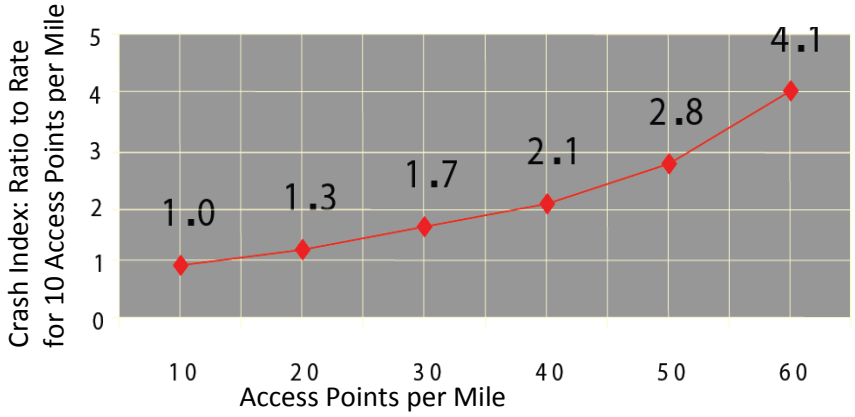
Driveways and Access

Currently, there are over 70 driveways providing access from the SH 191 frontage roads to businesses between Loop 338 and Loop 250, averaging over 2.9 driveways per mile each direction. While generally few for the expanse of corridor under evaluation, the rapid subdivision of property and development of parcels along SH 191 poses the potential for a significant number of access points along the frontage roads. Research by the National Cooperative Highway Research Program has shown a direct relationship between the number of driveways per mile and the propensity for crashes along the roadway.

Distances between site access drives along the frontage road appears, for the most part, in conformance with TxDOT standards. In areas where small parcels have recently developed near FM 1788, it appears minimum distances have not met due to the fact that individualized properties have/are being developed. This is also the situation in a few areas where a pre-existing condition was present. Site drive widths range from 24-35 feet and appear to be relatively uniform throughout the corridor. In some cases, because of the flat terrain and non-paved drive areas, very wide driveways have emerged as a result of truck traffic and their large turning radii.

The distances of intersecting streets with major roads that cross SH 191 range from 600-1000 feet, with the average being between 700-800 feet. These streets include Arroyo Road, 56th Street, Brownstone Road, Dr. Emmitt Headlee Road, CR 1275, Deauville Boulevard. In many cases, these existing streets formed the basis for the backage road system to be discussed later.

Figure 2: Relationship of Crash Rate to Driveway Density

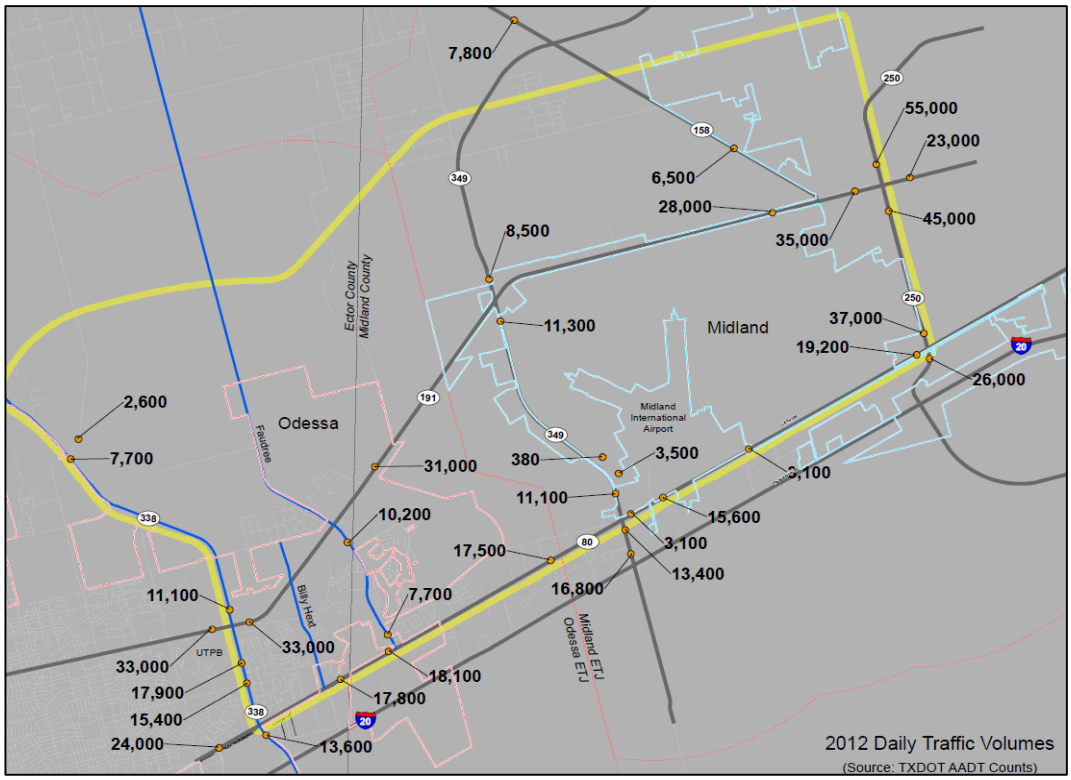


Both the Midland and Odessa Thoroughfare Plans identify SH 191 as a "highway" class facility within 300 foot right-of-way. Intersecting streets with SH 191 are identified on both city Thoroughfare Plans as arterial class facilities. In Midland, the "Major Arterial-Type A" is a six-lane roadway within 120' right-of-way. In Odessa, the "Major Thoroughfare – Type B-2" is a seven-lane (six-lanes with a two-way continuous left turn lane) within 130' right-of-way.

Travel Characteristics

TxDOT Average Annual Daily Traffic Volume Maps indicate the average annual daily traffic volumes along SH 191 to range between 28,000-35,000 in 2012. At Loop 338, Daily volumes at Loop 338 and Loop 250 are 33,000 and 35,000, respectively. Daily volumes at Loop 338 to the north and south of SH 191 are 11,100 and 17,900, respectively. At similar locations at Loop 250, volumes are 55,000 and 45,000 daily. At SH 349, daily volumes are between 28,000-31,000. To the north and south of SH 349 daily volumes are 8,500 and 11,300, respectively.

Figure 3: 2012 Daily Traffic Volumes



Travel forecasts for year 2035 were obtained to evaluate long-term corridor implications of SH 191. Forecasts prepared by TxDOT, and used by MOTOR in the preparation of the Metropolitan Transportation Plan, project daily volumes to double by 2035. Forecasted daily traffic ranges from 61,500 at Loop 338 to 60,400 at Loop 250. In the central portion of the corridor, traffic is forecasted to range between 56,000 and 48,000 vehicles. Directional volumes are forecasted to generally be evenly split, with a slightly higher inbound percentage of traffic moving away from the center of the corridor towards each respective city.

A link level analysis of projected 2035 volumes indicates that SH 191 will have sufficient capacity to accommodate daily traffic. No data was available for peak hour analyses, but it is anticipated that main lane capacity will accommodate projected traffic through this time frame.

In order to maximize the carrying capacity of the corridor, as well as the efficiency of the frontage roads, it will be important to coordinate driveway locations/spacing, cross-access, etc. between adjacent area properties. This challenge will fall on both the coordinating agency and development interests.

Corridor Accidents

The crash data for the three-year period from 2009 through 2011 for the study corridor was obtained from the Texas Department of Transportation (TxDOT). A total of 241 crashes were reported during the three year period. The locational distribution of the crashes, differentiated by non-injury, injury, multiple injury and death occurrence, varied within the corridor.

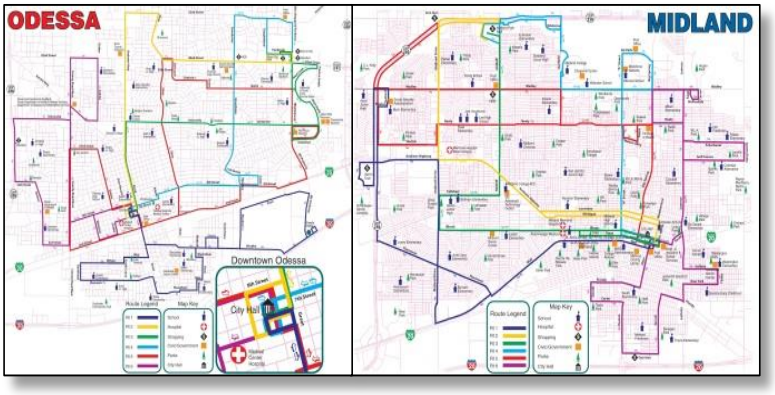
Based on the TxDOT crash data, the SH 191 study corridor average crash rate per year was calculated as 0.72 crashes per million vehicle miles of travel (MVMT). The statewide average for a similar roadway (State Highway roadways in an urban setting) according to TxDOT is 1.69 crashes per MVMT. The portion of the corridor west of SH 349 experiences higher than average crash rates for this type of facility, with an average of 0.98 crashes per MVMT. This portion of SH 349 experiences an average of 0.47 crashes per MVMT .

Public Cost of Motor Vehicle Crashes

National statistics maintained by the Federal Highway Administration indicate an approximate social value to the various types of crashes. In 2009 dollars, these factors were approximately $4 million per fatality, $200,000 for incapacitating injuries, $37,000 for non-incapacitating and possible injury values, and $7,400 for non-injury crashes. Applying these rates to the crashes identified as occurring on the study section of SH 191 and inclusive of the frontage roads, the 2009 social cost of the three years of accidents from 2009 through 2011 is estimated at approximately $10.0 million per year.

Transit

The Midland Odessa Urban Transit District provides oversight of the transit system operating in Midland and Odessa. Two lines of service are provided; EZ Rider and EZ Express. The EZ Rider provides scheduled service extending from the Downtown Transfer Plazas in each respective city. Within the study area, only the Midland Route 1 loops through the Westridge Park area via Tradewinds and Deauville Boulevards.



The EZ Express offers intercity service between Midland and Odessa and runs along SH 191 with dedicated Park & Ride locations in each city and drop points at the Downtown Transfer Plazas. Dedicated Park & Ride stations are located at UTPB, UTPB Bus Stop, Midland College, and the Citibank Ballpark. This new service, which is operated through a private vendor, operates during the weekday with three runs in the morning (6:15a/7:15a/8:15a) and afternoon (3:15p/4:15p/5:15p).

Service ridership data indicates an increasing trend in usage since operations began in October 2011. Overall average monthly ridership since service began in 2011 was 383 persons. However since January 2012, monthly ridership has increased to an average of 434 persons. In terms of boarding/alighting locations, the heaviest demands are at each of the Downtown Transfer Plazas. In May 2012, over 160 persons boarded at each of the downtown stations. The heaviest demand at Park & Ride lots was at Midland College in May 2012.

Currently, there are no plans for expansion of EZ Rider or EZ Express within the study area but will be determined on a future demand basis. The Center for Energy and Economic Diversification (CEED) is considering a shuttle program for service to the Engineering School and the Performing Arts Center but nothing has been finalized. Other long-term planning includes possible service to the Medical Center Hospital Center for Health and Wellness located at Faudree Road in Odessa.

In July, 2013, EZ Rider completed the construction of a multi-modal center west of the airport aimed at serving as a regional hub for transit providers and maintenance operations. Funding for the initial phase of the $4 million multi-modal facility came through federal transportation funds and a match by TxDOT. By 2015, the facility is envisioned to serve as a stop for several carriers, such as EZ Rider and Greyhound.

As discussed earlier, EZ Rider/EZ Express do not have plans for transit system expansion within the study area, other than the current service. Potential partnering to serve the CEED and/or MCH Center for Health and Wellness through others is an opportunity for further investigation. Additionally, it is envisioned that the Wagner Noël Performing Arts Center could possibly serve as Park & Ride location. The 2010-2035 MTP identifies "new intercity transit service" along the SH 919 corridor, which has been achieved through implementation of the EZ Express.

Figure 4: SH 191 Transit Ready Corridor

Stakeholder interviews conducted during the creation of the SH 191 Corridor Study/Management Plan revealed a need for long-term planning between the SH 191 corridor and the airport and the need for modal integration and connectivity. It was generally acknowledged by many that development of the SH 191/SH 349 area was the next likely area of development, evidenced by the significant investment that has occurred in the area to date. As such, there should be long-term consideration for connectivity between this development area and the airport. Additionally, by providing transportation options and choice, there is a better chance for integrated development opportunity resulting in better fiscal use of resources.

The SH 191 Corridor Study/Management plan utilized the feedback received from stakeholders, combined with long-term development patterns and transit opportunities discussed above, to create a "transit ready" corridor. The transit ready corridor generally runs parallel to and along the south side of SH 191. The corridor would be contained within 120' of right-of-way and would be designed in a way where transit options could be included if and when such improvements were deemed necessary. Potential future transit options that could be accommodated or considered for the transit-ready corridor would include bus rapid transit (BRT) and potentially light rail. The transit ready corridor would connect Midland and Odessa with the various nodes of activity located along SH 191 and would provide transportation alternatives as the area continues to grow and as traffic congestion potentially becomes more of an impact on daily commuting patterns.

Bikepaths

Both Midland and Odessa have a bikepath project cited as part of the 2010-2035 MTP that extends into the SH 191 study sub area. In Midland, the West Midland Bikepath is an 8.4 mile path extending along Holiday Hill, League, Crowley, Hereford, SH 191 frontage road, Deauville, Tradewinds, and Thomason streets and connecting a series of parks, schools and the Scharbauer Sports Complex. This project is estimated to cost $1.5 million with the anticipated year of expenditure at 2015.

In Odessa, the East Odessa Greenway/Bikepath is a 4.8 mile pathway extending from Loop 338 along 42nd Street, John Ben Sheppard Parkway, traversing an easement to Grandview to Loop 338. This path connects UTPB, Memorial Garden Park and Ratliff Stadium. This $1.0 million project is slated for completion in 2017. The Odessa Parks Plan identified the development of a 90 acre Metropolitan Park located on the southeast quadrant of Billy Hext and SH 191. This $3.5 million unfunded project includes development of trails, nature facilities, picnic and pavilion facilities and possible small bodies of water.

Stakeholder input from the SH 191 study identified a desire to promote and invest in more bicycle/pedestrian facilities within the communities. Comprehensive Plans from each of the cities identified parks and open space as key amenities for community livability. The 2010-2035 MTP identified many key corridors serving the study area to contain adjacent bikeway paths for area-wide connectivity. Bikeway and pedestrian connections will were also included in development phase of the plan.

Biking Accidents

The SH 191 frontage road between Midland and Odessa is a popular course for avid cyclists. The flat terrain, a 25-mile loop with options for a shorter circuit (via underpasses), and relatively low adjacent traffic volume is attractive to cyclists from both cities. Unfortunately, sparse development has created opportunity for increased speeds and driver inattentiveness and has resulted in several bicyclist fatalities since 1985. The most recent accident, in 2009, was located east of FM 1788.

TxDOT has erected motorist signage advising of bicyclists with placards reading “Share the Road” within the corridor. As development continues within the corridor, additional care will be needed to observe other users of the roadway.

Freight Rail/Goods Movement

Input from the stakeholder interviews revealed a desire for; freight rail/goods movement as a tool to support land planning considerations for La Entrada type development, the potential to reduce truck traffic from SH 349, an investment to spur industrial growth in the southern sector (FM 1788, Interstate 20, and Business Interstate 20 area) of the study area, and enhancement of the regional competitiveness of the Midland-Odessa area. The 2010-2035 MTP identified a north-south railroad and inland port located along the eastern side of the airport to facilitate and leverage this economic potential.

Planned Improvements

The MOTOR 2010-2035 Metropolitan Transportation Plan has identified a range of projects within the planning area. Project prioritization was categorized in the following categories:

- Previously Committed Funding Priorities - short range projects stemming from the 2008-2011 TIP;
- Funded Priorities – once previously committed projects priorities are addressed, these projects are next in line and reflect the MPO's long-term priorities;
- Unfunded Priorities – high priority projects but without an identified funding source. If funding is found these projects can be developed and advanced;
- Other Unfunded Needs – other worthwhile projects outside the financial constraint of the MTP.

The following summarizes the projects listed as part of the 2010-2035 MTP.

Table 2: 2010-2035 MTP Projects within the Study Area

Project ID	Name	Limits	Improvement
CSJ 0380-18-006	SH 349/SH 158	Interchange	Construct interchange
CSJ 1718-07-035	SH 349	FM 1788 to CR 60	Construct new location non-freeway
RC-06	Loop 338	87th St (east jct) to Yukon Rd (east jct)	Upgrade to freeway
RC-07	IH-20 at Loop 250	Interchange	Reconstruct and upgrade interchange
RC-08	SH 349 at FM 1788/ CR 60	Interchange	Construct interchange
RC-10	Loop 338	Yukon Rd (east jct) to 52nd St	Upgrade to freeway, including interchanges at Yukon Rd and JBS Pkwy
RC-13	Loop 338	52nd St to SH 191 (east jct)	Upgrade to freeway, including interchanges at 52nd St
RC-14	Loop 250 at BI 20 (west junction)	Interchange	Reconstruct and upgrade interchange
RC-18	Loop 338	SH 191 (east jct) to IH 20 (east jct)	Upgrade to freeway, including SH 191 interchange & interchange at University Blvd
RE-03	BI 20	8th St to 0.5 mi east of Faudree Rd	Improve intersections and other capacity enhancements

Factors Influencing Development

The SH 191 Corridor Study/Management plan identified a number of external factors that could potentially influence development along the SH 191 corridor. While many of these factors are outside the immediate confines of the corridor, they impact the way development can occur within the area, and because of potential connection with SH 191, have an impact on the type development desired for corridor itself. Some of these influences/issues included in the initial report are:

- Height limitations/noise constraints of the Midland International Airport.
- Environmental stewardship in dealing with adjacent playas/open space, and drainage ways.
- Oil drilling/ operations and their impact on land use planning.
- Utility and pipeline easements both public and oilfield related; land not used for oil wells is still impacted by collection lines, tank batteries and injection wells, all of which impact development.
- Developments that preclude the extension of existing or alignment of proposed thoroughfares including; the airport, SH 349/CR 60 interchange, private property holdings, floodplains, playas, and quarry operations.
- Water storage facilities to the west of 1788 and other municipal facilities in the area.
- Future plans for the widening of FM 1788/ SH 349 and potential grade separated interchanges.
- The rapidly changing ability to implement the current adopted thoroughfare plans for both the SH 191 Corridor and the subarea (ETJ) as a whole. This is due to the desire of the cities to guide and control rapid development occurring in the area.

In addition to these originally identified factors that will potentially impact development within the study area, a number of additional factors that will directly impact development decisions were examined as part of the update and include the following.

Regional Growth

The continued growth and activity of the oil and gas industry in the Permian Basin has led to robust growth both in terms of economic activity and population growth. While it is uncertain as to exactly how long the rapid growth will continue, many estimates indicate that growth within the region will continue for the foreseeable future, particularly due to the expansion and reuse of existing oil fields due to fracking. As the economy becomes more diversified, utilizing the resources generated by the oil and gas resurgence, additional growth may continue and be eventually supported by industries not directly tied to the oil and gas industry.

As a result of this regional growth, the need to provide housing, employment, education and health care as well as shopping and recreational options for current and future residents increases. Long-term planning on how future development should be accommodated will ultimately help to ensure coordinated land use decisions, an efficient circulation network, and will help to minimalize land use conflicts.

The challenge created by rapid growth within the SH 191 study area is how to best accommodate oil and gas operations with growing development pressures. Residential, employment and retail growth is occurring at a rapid pace on both ends of the SH 191 corridor and continued regional growth would seem to indicate that pressures for growth within the SH 191 study area will likely continue as well.

Oil & Gas Operations

The SH 191 study area contains many oil and gas drilling facilities, particularly on the northeastern side of the study area. The drilling facilities require supporting infrastructure and generate trucking traffic. These facilities are an integral part of the local economy and drilling site spacing has been decreased to 20 acres in recent years to permit greater access to minerals. In many cases, surface rights are being purchased in conjunction with mineral rights in order to preserve areas from development pressures. In other areas, however, residential, industrial and commercial activity may occur in and around drilling facilities. The challenge related to oil & gas operations is identifying the appropriate types of development should development occur.

The SH 191 Corridor Study/Management Plan provided a number of strategies related to the positioning of drilling facilities, particularly when in close proximity to SH 191. It will be important for the cities of Midland and Odessa to continue to work with land owners and mineral right owners to balance community development objectives with drilling needs through setbacks, access roads, traffic management and appropriate land use selection.

Residential Growth

Rapid residential development is occurring within the SH 191 study area. The primary growth area for Odessa has been on the eastern side of the City and has been focused along SH 191, between Loop 338 and Faudree Road. Likewise, significant growth is occurring in Midland along the western side of the City, primarily focused along Tradewinds Boulevard. In Midland, Betenbough Homes and D.R. Horton are constructing new residential subdivisions. In Odessa, residential construction is occurring or planned in conjunction with the Parks Legado, Ponderosa and Parks Bell developments.

Odessa, in particular, has optimal areas for residential development due to the reduced number of drilling sites in the immediate area. The Parks Bell development will continue to expand residential and retail development and the city's boundaries, eastward. The continued residential growth within the SH 191 study area will also add a demand for neighborhood services, retail, parks, and other supporting community uses. Residential areas, and their supportive uses, will be required to accommodate oil and gas drilling operations and therefore strategies to enable both to occur will be critical.

Office Growth

A significant development since the previous SH 191 Corridor Study/Management Plan is the planned construction of the Chevron office campus along SH 191 near the Sports Complex in Midland. The Chevron office campus is a large office complex totaling nearly 400,000 square feet in size. The facility will serve as Chevron's regional operations center within the Permian Basin and will employ more than 500 personnel.

In addition to Chevron's office campus, there are plans for an office complex adjacent to Chevron. These plans currently reflect four 100,000 square foot buildings for a total complex square footage of around 400,000 square feet. When combined with the adjacent Chevron campus, over 800,000 square feet of office space may exist in relatively close proximity to the SH 191/Deauville Road area. The size of these office developments along the corridor necessitates their inclusion as a development factor within the study area.

Office uses, especially professional office uses, have a different impact than industrial uses in that they generally have more employees per square foot than industrial, especially industrial uses with equipment storage. Therefore, different considerations for office uses must be considered, such as traffic generation and services to support a significant daytime workforce.

Industrial Growth

The primary activity associated with oil and gas operations is industrial operations. Industrial encompasses a wide spectrum of uses. Currently, many industrial operations within the SH 191 study area include pipe yards, storage yards and equipment sales. Many industrial uses also require a certain degree of outside or open storage. These services are a necessity and are expected to continue in the future at appropriate locations.

While industrial growth is a key component of the land use plan, this use is typically the least compatible land use with low-density residential development. Additionally, industrial land uses may generate different traffic types and patterns than residential or retail areas. The primary land use within the central area of the study is, and most likely will continue to be, industrial. Therefore, strategies to transition and/or buffer from industrial uses to residential and retail uses on the eastern, western and northern areas will be important. Additionally, truck routes will become key in ensuring that trucking traffic supporting industrial development has access to key trucking routes without causing safety issues in primarily residential and retail areas.

Midland International Airport

Midland International Airport (MAF) is arguably the largest factor influencing land use decisions within the study area. MAF is the 9th busiest airport in Texas with 497,193 passengers passing through the airport in 2012. Airport traffic has increased significantly in conjunction with the reemergence of the oil and gas industry in the area. Southwest Airlines, American Eagle and United Express operate out of MAF and provide services to Dallas Love Field, DFW Airport, Houston-Hobby, Las Vegas and Denver. In addition to passenger services, MAF also is utilized for commercial freight transport among others.

The airport significantly impacts land uses in a number of different ways. Runway clear zones must meet FAA standards and therefore development, or incompatible development, within certain areas of the clear zone may negatively impact future commercial or passenger operations at the airport. Additionally, industrial uses such as storage and warehouse facilities are generally desirable as ancillary uses near airports. Finally, noise levels must also be considered when weighing the appropriate types of development within close proximity of the airport. Residential development, in particular, is generally not advisable within close proximity to MAF due to noise issues and clear zone requirements.

Aerospace Activity

A significant addition to the SH 191 study area since the preparation of the SH 191 Corridor Study/Management Plan is XCOR Aerospace operations. In July 2012, the City of Midland announced that it had been selected, through a competitive process, for the establishment of XCOR's commercial spaceflight research & development center to be located at Midland International Airport.

XCOR is developing rocket powered vehicles, propulsion systems and other techniques that will aid in commercial space flight. This is particularly significant with NASA's indication that they will rely more heavily on privatized space flight in the future. XCOR will be operating out of a remodeled and expanded 60,000 square foot hangar on the southwestern side of Midland International Airport.

While XCOR facilities will be located within the airport boundaries, the land use implications pertain primarily to the associated clear zones that are required for operations. At the current time, approvals and permitting have been submitted to the Federal Aviation Administration to make the airport a designated Commercial Space Launch Site. The exact clear zone boundaries have yet to be officially defined as only preliminary information is available. While the clear zone specifics remain to be seen, the reality is that residential construction near the terminus of each airport runway and within the immediate clear zone areas may significantly impact XCOR and airport operations. Designation of Midland International Airport as a Commercial Space Launch Site has the potential to be a significant economic driver as additional aerospace research and development may follow with such a designation. Therefore, the land use implications of aerospace activity and air operations in general, are significant considerations.

Emerging Markets

The designation of Midland International Airport as a Commercial Space Launch Site in conjunction with the XCOR operations may have implications beyond XCOR itself. In recent years, research and development related to the aerospace industry has received pressures for privatization. In particular, the discontinuation of the Space Shuttle program by NASA has increased the pressure for innovations in private space flight including the development of new engine technology and other privatized aerospace research activities. The research and development related to aerospace activity has the potential to provide highly skilled jobs in Midland/Odessa and the pending approval of Midland International Airport as a Commercial Space Launch Site would make the region very attractive for the aerospace industry, particularly because so few designations currently exist.

The land use implications of this would largely be in areas adjacent to the airport. Research and development facilities would be the primary facilities associated with the aerospace industry. Additionally, outside testing of engines and aircraft would also be considerations. These types of activities would be associated and compatible with industrial land uses. The SH 191 Corridor Study/Management Plan currently reflects industrial development surrounding the Midland International Airport. The significance of the airport clear zones is once again apparent if aerospace activities occur or are desired.

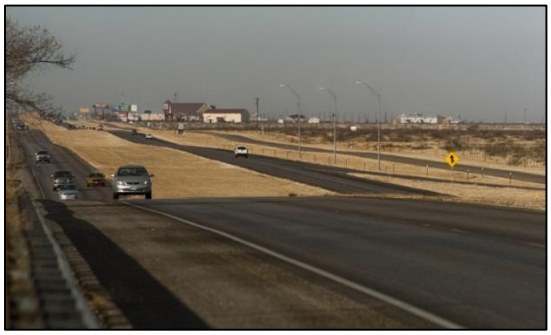
La Entrada Trade Corridor

La Entrada al Pacifico, also designated as Trade Corridor 56 by the Intermodal Surface Transportation Efficiency Act (ISTEA), is a cooperative agreement between the United States and Mexico that would provide a designated trucking route for trade between the two countries. La Entrada begins at the Port of Tobolobampo near Los Mochis, Sinaloa, Mexico and ends just north of Midland-Odessa at Lamesa.

The significance of the trade corridor stems from the connection to the pacific coast and the opportunities for international trade within the study area. Land uses aimed at supporting trading, distribution and warehousing would help to bolster positive economic impacts to the area.

SH 191 Corridor

The SH 191 Corridor is one of three primary connections between the cities of Midland and Odessa, the other two being Business 20 and Interstate 20. Business 20 and Interstate 20 are primarily commercial and industrial in nature. SH 191, on the other hand, has a significant amount of retail, residential and office development on the far eastern and far western portions of the corridor. Additionally, the construction of the Wagner Noël Performing Arts Center along SH 191 at SH 349 presents the possibility for a future node of activity between Midland and Odessa. The future UTPB engineering school at this location will only aid in development of an activity node at this location.



The character of the SH 191 corridor has developed differently to that of Business 20 and Interstate 20. The corridor is primarily utilized by vehicular traffic rather than commercial trucking traffic, which primarily utilizes other corridors. SH 191 has the potential to continue to develop as a more retail, office and commercial corridor, particularly on the far eastern and western sides. Pressures between residential, retail and office uses and more intense industrial uses will likely take place in the future and therefore high-level planning which assesses potential land uses and supporting transportation facilities is critical. Finally, the visual integrity of the SH 191 corridor will likely receive greater attention than Business 20 and Interstate 20 due to the corridor being more attractive to residential and retail uses.

Unregulated County Growth

A threat to the SH 191 corridor is unregulated county development. Texas law enables communities to control land use and design standards only within their city limit boundaries. Subdivision ordinances, however, may be enforced within a community's extraterritorial jurisdiction. Growth is rapidly occurring along the SH 191 corridor and within the overall study area in general. Much of the land is currently within the ETJ of either Midland or Odessa but is not currently within either cities city limits. This limits the ability for either community to regulate and control land use and design.

Much of the development currently occurring outside of the city limits of Midland and Odessa is industrial in nature. While industrial activity would likely continue to be a predominant land use within the area, if development were occurring within city limits it would likely be required to adhere to a higher design standard likely including masonry, access management and a certain degree of landscaping. Unregulated development within the county is primarily small-lot development and is developed on a parcel-by-parcel basis rather than a larger master planned industrial development.

Stakeholders identified the need to protect the visual integrity of the SH 191 corridor in order to ensure a cohesive look and feel, particularly as rapid and higher quality growth occurs on the eastern and western areas.

Vision Refinement

A major element of the update was to re-examine the vision for the SH 191 corridor. The need to redefine and reconfirm the overall SH 191 vision stems from the continued rapid growth within the region and, in particular, the SH 191 study area. In order to assess the whether or not the high-level land use and transportation visions have changed, stakeholder interviews and two public input meetings were conducted.

SH 191 Urban Design Charrette

As part of the SH 191 Corridor Study/Management Plan, a four-day charrette was conducted to review the site, interview stakeholders and explore alternative development patterns and issues. It was an iterative process in which each day included a Staff technical review and an Advisory Committee review. Day One, the Charrette Team drove around the site in both Midland and Odessa to better understand development patterns and issues. Day Two, three concepts were explored and presented to the Advisory Committee, where they were discussed and direction was given for refinements on Day Three. On Day Four, a recommended scenario was prepared and presented along with the "business as usual" scenario to Staff, the Advisory Committee and, in the evening, to the general public.

Land Use Scenario Creation

Three initial land use scenarios were developed as part of the charrette process:

1. Business as Usual, where existing policies and standards are continued without change.
2. Mixed Use Walkable Transit Centers, where Village and Neighborhood type centers would be created to provide identity and image for the area without relying on individual projects to create a positive impact.
3. Fiscally Responsible/Energy Efficient, where development would take advantage of special accessible locations in the corridor and minimize travel distance between home and retail/restaurant activities and where water and energy resources are minimized.

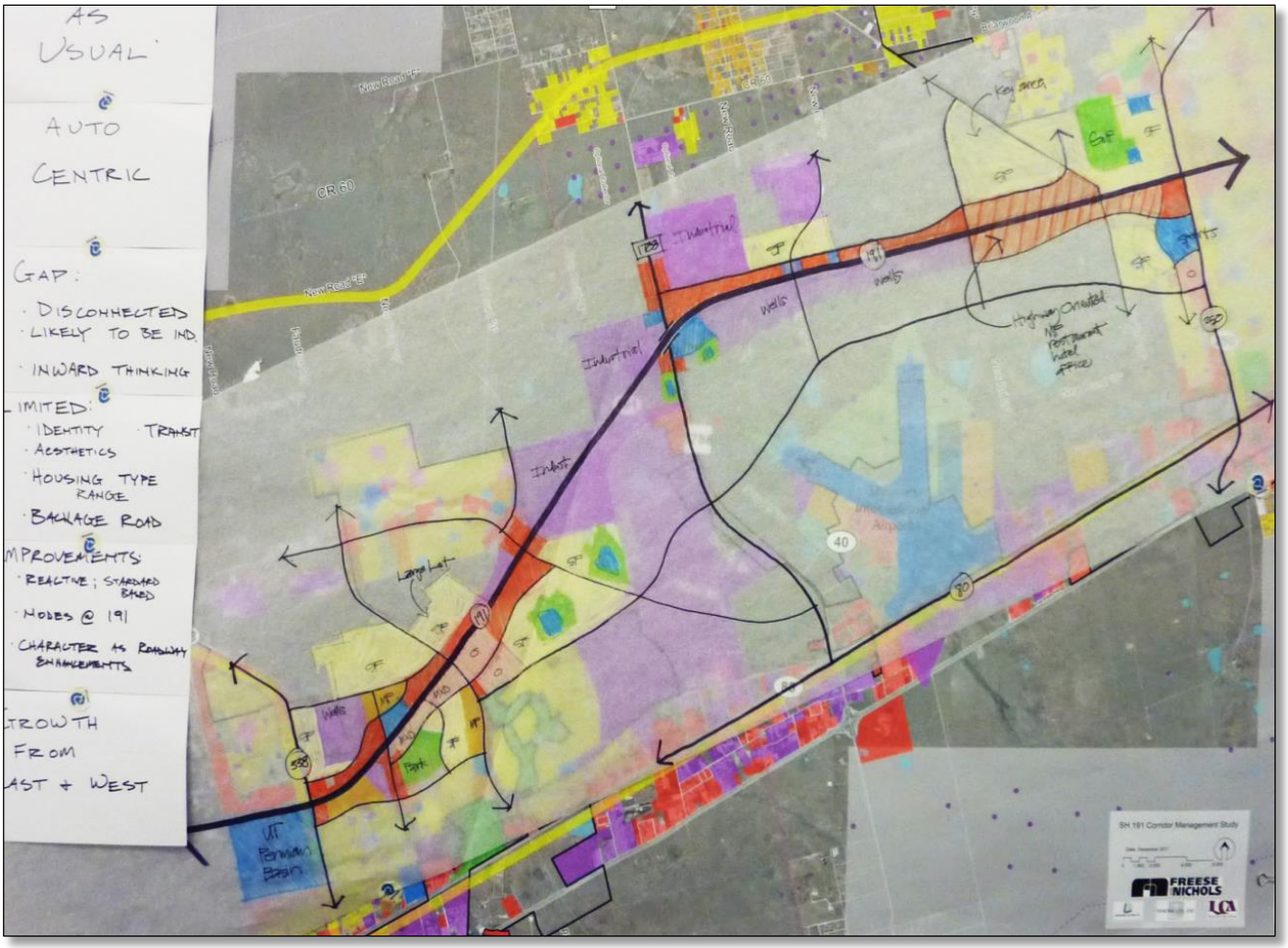
The Mixed Use/Walkable and the Fiscally Responsible concepts were refined and merged to yield the Preferred Development Concept that was presented to the public for comment on the evening of Day Four.

Business as Usual Scenario

The Business as Usual concept reflects the continuation of several current practices that will have a long term impact of the region as both a place to do business as well as a place to live. It is characterized by:

- Stripping out development of industrial and retail uses. This includes pad site development with no shared access.
- The inability to provide good circulation access to land not fronting directly on the highway by precluding the creation of "backage" roads that allow reverse circulation for properties facing the one-way service roads.
- The continuation of minimal development standards including unpaved streets and a lack of building and sign standards in portions of the western half of the corridor.
- The lack of ability to preserve a transportation corridor right-of-way for future transit use.
- Lack of a strategy to work with the needs of pump jacks and services to accommodate long term development.
- Lack of a strategy to deal with storm water drainage in a way that creates amenity for development.

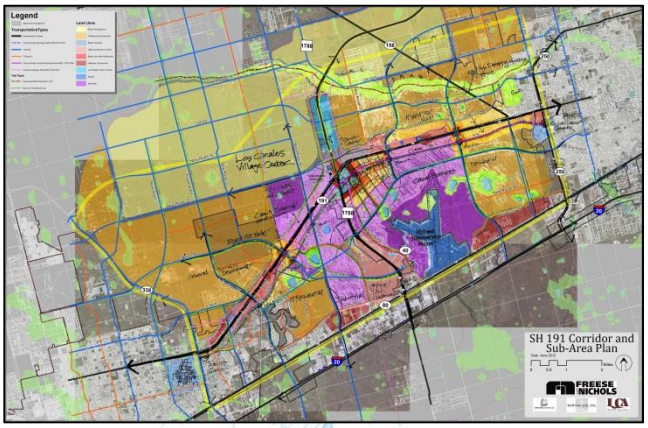
Figure 5: Land Use Development at the Urban Design Charrette



Preferred Development Scenario

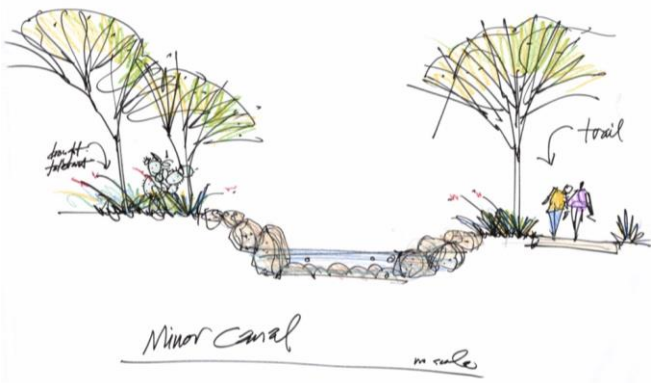
The Preferred Development scenario considered the development patterns and standards for their implications over a long-rage, 100-year period. The scenario aimed to connect both Midland and Odessa with the airport and discussed potential opportunities to provide quality growth for decades. While the area is currently rapidly being subdivided into 40-acre drilling leases and serviced by collection pipes and battery tanks that limit its ability to accommodate surface development, there are excellent examples in the region where long term extraction and residential and commercial development can coincide. The following are the key components of the preferred development scenario:

- Mixed Use Village Centers: The preferred development scenario utilized higher density, pedestrian-oriented mixed use centers that would be linked by backage roads and could eventually be linked by transit. They would offer residential, working, dining and shopping and would be pedestrian and bicycle friendly. The main village would be the Los Canales Village Center which would include the Wagner Noël Performing Arts Center and the UTPB Engineering School. The drainage utility that runs through the area could be used as a water and open space feature.

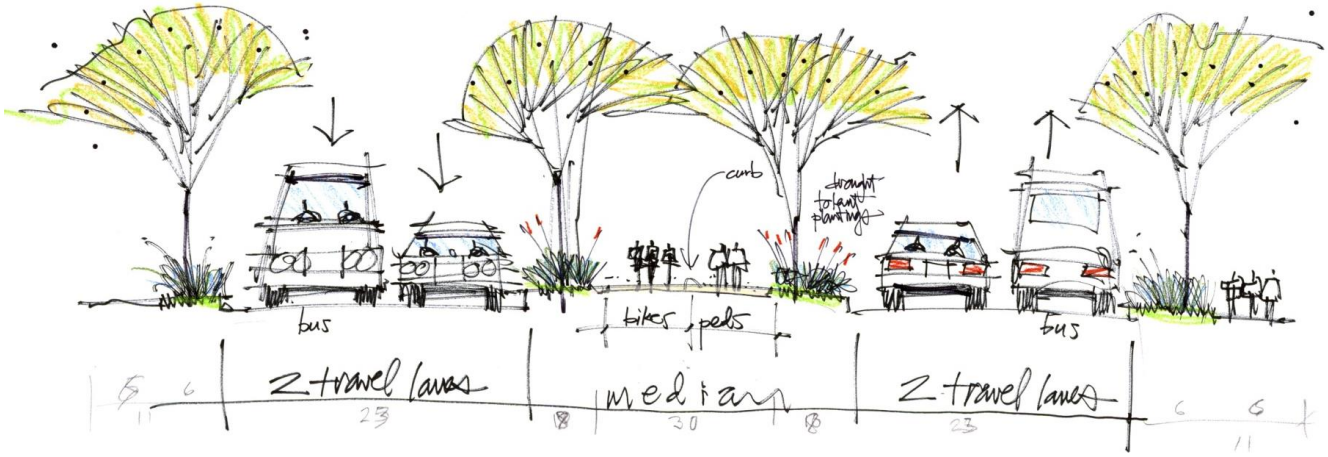


- Land Use Types: The preferred land use scenario concentrated on four general land use types. Industrial would be one of the largest uses within the area and should be located within the noise contours of the airport and surrounding the airport. Office/Technical Conference would be immediately west of the airport and would potentially attract research and technical land uses that would benefit from university accessibility. Retail would be located within the various village centers. The big-box type development would likely be located along SH 191 between Billy Hext and Yukon and on the north side of SH 191 east of SH 349. Finally, a mixture of residential types should be provided including large-lot single-family, traditional single-family, multifamily, townhomes and other housing types that meet the needs of a variety of future residents.

- Landscape, Open Space, and Drainage: consideration was given to the landscape and arid nature of Midland/Odessa. The area is prone to flash flooding and therefore drainage amenities, while serving an essential flood control function, could also be integrated as an open space and aesthetic amenity within the study area.



- Transit: Since the preferred scenario considered the long-term vision for the area, the potential for future transit options was considered. The area was deemed to be "transit-ready" due to the higher density residential and commercial uses organized in a nodal fashion. A "transit-ready" corridor would connect the various nodes as well as the cities of Midland and Odessa. The "transit-ready" corridor could potentially serve a bus rapid transit system or another transit system deemed necessary in the future.



Stakeholder Interviews

On September 30, 2013, stakeholder interviews were conducted at the Midland Odessa Transportation Organization offices. Stakeholder interviews were designed to obtain input on the land use and transportation network developed as part of the SH 191 Corridor Study/Management plan from those who have the most knowledge and experience with the area, including public officials from Midland, Odessa, Midland County, Midland Development Corporation, Ector County, MOTRAN, TxDOT and MOTOR, among others.

Stakeholders were asked a series of questions to solicit feedback. The questions included potential opportunities within the study area, concerns or issues that may impact development with the study area, transportation network issues, mobility safety concerns, multimodal considerations, planned developments and planned transportation improvements. A total of 13 stakeholder interviews were conducted.

Backage Roads

An issue that received significant attention during the stakeholder interviews was the positive feedback of the backage road system along SH 191 and the need to ensure its implementation. The purpose of the backage roads, as previously discussed, is to facilitate circulation and promote retail and commercial development along SH 191. Stakeholders expressed that backage roads were crucial to support the intended and desired types of development highlighted in the corridor vision and would greatly enhance circulation and alleviate many of the existing problematic and dangerous traffic patterns along the SH 191 frontage roads. The need for backage roads was seen as particularly important in east Odessa as significant retail and residential development continues to occur. Tres Hermanas Blvd. has been constructed between Billy Hext Road and Faudree Road to support retail and residential development occurring near the Parks Legado development. To date, the backage road system identified in the SH 191 Plan is generally being implemented with positive success.

Mixed-Use Center

Many stakeholders indicated that the mixed-use node at SH 191 and SH 349, described as Los Canales in the SH 191 Corridor Study/Management Plan, should be preserved. Both Midland and Odessa have significant interest in the success of the Wagner Noël Performing Arts Center. Additionally, UTPB's future engineering school is planned to be located within the area. Additional investments have occurred and are planned within the area. Therefore, many stakeholders expressed a desire to continue the vision of creating a shopping and entertainment node at this intersection, capitalizing and leveraging the existing and planned facilities within the area.

Truck Traffic

The SH 191 study area has a significant amount of truck traffic that supports the oil and gas industry within the area. SH 191 itself does not currently contain a significant amount of truck traffic as the most heavily utilized trucking corridors remain to be Business 20 and SH 349. As development continues to increase within the SH 191 study area, truck routes will become even more imperative to ensure motorist safety, particularly as residential development continues to occur in eastern Odessa and western Midland. Stakeholders expressed that truck routes must be identified and they must be enforced. The continued use of Business 20 and SH 349 were seen as appropriate use as designated trucking routes.

Aesthetics

Many stakeholders expressed the need for enhanced aesthetics and design standards along the SH 191 corridor, particularly in regards to metal building design and overall landscaping. SH 191, unlike Business 20, has less trucking traffic and therefore retail and commercial development may be attractive. Additionally, both eastern Odessa and western Midland continue to develop in a more traditional manner along SH 191 with housing subdivisions, multifamily residential and retail establishments being constructed. This pattern of growth may continue and therefore, the visual integrity of the corridor as a whole was believed to be important in helping preserve the long-term value of the corridor. Stakeholders indicated that masonry should be used on metal buildings and higher design standards utilized in the Parks Legado and Scharbauer Sports Complex area developments should be maintained and continued with new retail development.

Clear Zones

Stakeholders indicated that preservation of the airport clear zones should also be an important consideration. Midland International Airport is a significant economic driver in the region. The addition of XCOR to the Midland International Airport exemplifies the economic potential that exists at the airport. Operations for both air and space activities will be heavily dependent upon the types of development that occur within the airport clear zones. Air and spaceport operations should be protected, but concern over clear zones and its impacts on area development in designated areas was identified. Most notably, how would funding of land purchases within clear zones and what development tools such as zoning could be used to discourage incompatible and potentially threatening uses.

Tradewinds Corridor

Tradewinds Blvd. is a rapidly developing area along the far eastern side of the SH 191 study area. In addition to the Scharbauer Sports Complex, numerous restaurants, hotels and retail venues have developed in recent years. Residential development is rapidly occurring on the western side of Tradewinds Blvd. in conjunction with the Betenbough and DR Horton residential subdivisions. On the far southern side of Tradewinds Blvd., near Business 20, a new movie theater and several multifamily developments have been constructed.

The corridor serves as a backage road along the western side of Loop 250 and therefore development between Loop 250 and Tradewinds Blvd. will likely continue to be a mix of retail, office, multifamily and entertainment uses.

Executive Airport Hotel

Visioning discussions indicated the possibility for a future development along the southeastern portion of the Midland International Airport. An executive hotel/extended stay facility was described as a future development possibility. The purpose of the executive hotel would be to provide an option for business lodging within close proximity of the airport. A potential adjustment that was identified to support the potential development would be a slight reconfiguration of "New Road E" by extending the roadway westward.

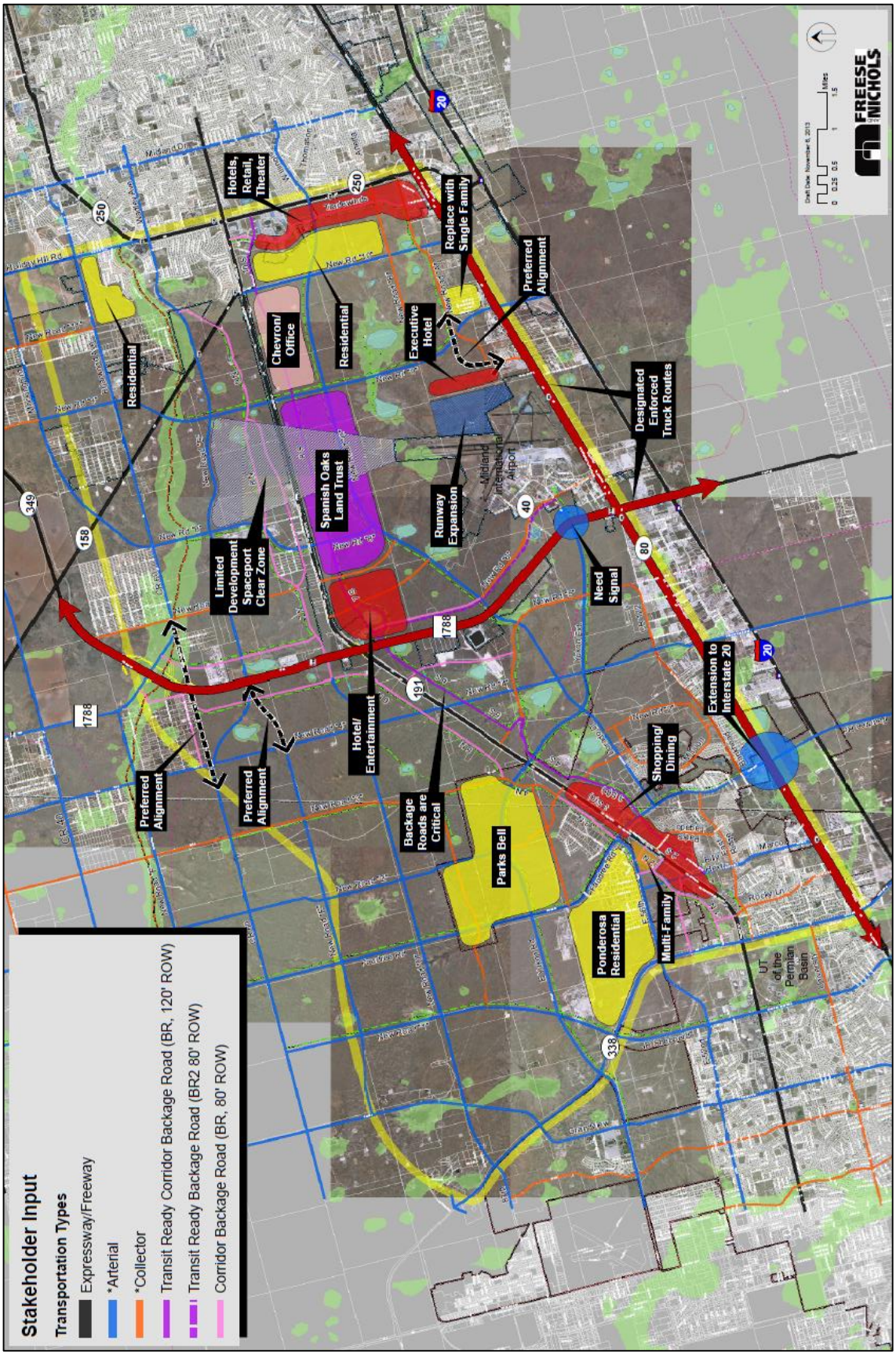
Parks Legado

The Parks Legado development has transformed the eastern side of Odessa. The development, located south of SH 191 between Billy Hext and Faudree Road, is a mixed-use development containing retail, hotel, office, multifamily and single-family uses. One of the significant additions to the development has been the construction of a Tres Hermanas Blvd. which serves as a backage road to support circulation and access to retail located along the SH 191 frontage road.

Interstate 20 Connections

At the current time, only Loop 338, SH 349 and Loop 250 provide connections and access to Interstate 20. During the input process, stakeholders identified additional connections to Interstate 20 as a future need. There are opportunities for potentially two additional connections to Interstate 20—one between Loop 338 and SH 349 and an additional connection between SH 349 and Loop 250. The challenge with adding additional connections to Interstate 20 is the potential impact of trucking traffic along such roadways. Currently, SH 349 accommodates most of the north-south trucking traffic within the study area. The provision of other north-south connections, such as Faudree Road, may adversely affect residential areas. To prevent this, enforcement of designated truck routes may be necessary.

Stakeholder Input Map



Public Input

In addition to stakeholder interviews, two opportunities for public input were provided as part of the process. The purpose of the public input meetings was to obtain general feedback from stakeholders, business owners, land owners and the general public on the SH 191 corridor vision refinement and to re-solidify the land use and transportation vision for the area.

Public Input Forum

The first public input forum was conducted on September 30, 2013 at the MOTOR offices. The purpose of the first public input forum was to obtain initial feedback from the public on needed changes to the SH 191 Corridor Study/Management Plan, particularly due to new developments within the study area.

Overall, input received indicated that the proposed transportation system provided a functional circulation system for the area and provided a framework for roadway connections between Midland and Odessa. Additionally, no significant land use changes were proposed. The significance of backage roads along the corridor was a prime concern as was seeking appropriate strategies to address the airport and spaceport clear zones—namely how development may be impacted by airport and spaceport operations. There was also some concern over mixing the areas largely industrial nature, due to the prevalence of oil and gas wells and facilities with future residential and retail development.

Planning Workshop

After the stakeholder interviews and initial public input meeting were conducted, information and feedback received was used to update the land use and transportation scenarios where necessary. These draft land use and transportation scenarios were then presented to the public on November 6, 2013. The planning workshop was held at the Community Room at the Atmos Energy Building near the Midland International Airport.

The planning workshop was well attended by many key decision-makers including Midland and Odessa officials, Midland and Ector County officials, Midland Development Corporation, TxDOT, MOTOR, elected officials and development interest representatives. The crowd of 28 was divided into two working groups in order to better facilitate input on the draft land use and transportation scenarios. At the conclusion of the two group input sessions, the input received was provided to the group as a whole.

Generally, no significant changes to the land use and transportation scenarios were proposed by those in attendance. Issues related to development, transportation safety, truck routes, backage roads, aesthetics and roadway flexibility due to oil and gas drilling operations were expressed. Additionally, some concerns related to the airport and spaceport clear zones were expressed, particularly balancing air and space operation needs with desired community development objectives.

Summary

Generally discussions with stakeholders and participants at the public meetings indicated an affirmation of recommendations contained within the SH 191 Corridor Study/Management Plan. Very little changes were recommended or were deemed necessary to the land use and transportation scenarios contained within the study area.

Summary of Top Issues Defined by Stakeholders

- Backage roads should continue to be implemented and are crucial to the overall development of the corridor;
- Truck Traffic is an issue and as residential and retail development continues to occur it will become even more critical that truck routes be enforced to protect motorist safety;
- Parks Legado and the Tradewinds Boulevard areas will continue to anchor rapidly expanding retail, residential and entertainment uses. These will continue to shape the character of SH 191;
- Additional connections to Interstate 20 are needed. Connections, however, should be carefully chosen so as not to bring trucking traffic into residential and retail areas. This could potentially occur along Faudree Road if a connection to Interstate 20 is made at this location. The area is rapidly developing with residential and retail activity and the use of Faudree Road for trucking would negatively affect this developing areas;
- Aesthetics and design standards are important considerations. The SH 191 Corridor is different from Business 20 and Interstate 20 and therefore it's integrity should be preserved through a continuation of higher development standards;
- The mixed-use center at SH 191 and SH 349 should continue to be preserved for future development. It has the potential to serve as a center for entertainment, shopping, office and higher density residential uses;
- Implications of aerospace activity must be considered, particularly how to address development within clear zone areas.

Land Use Strategies

Land use planning provides an overall policy and high-level framework from which future development decisions can be rationally based. Land use planning not only helps to set the framework for growth and development, but in doing so helps to protect the interests of stakeholders, property owners, residents and businesses.

The SH 191 Corridor Study/Management Plan proposed a number of different land use categories that reflect various land use types, intensities and characteristics. The land use categories were developed to guide growth and development within the study area. It is important to note that the land use framework is intended to be a high-level guide that allows staff and decision-makers from Midland, Odessa, Midland County, Ector County and MOTOR to make coordinated and efficient transportation decisions. Well-planned and coordinated long-term decision making helps to better utilize limited public resources and helps to ensure the efficient provision of infrastructure.

Land Use Types

The following land use types are those that are reflected in the Midessa Land Use Concept. These categories are intended to provide a general description of the types of land use characteristics that may be contained within each respective district.

Rural Development

Rural development is reflective of large-lot and low-density single-family neighborhoods. Lots within these areas will be over one acre in size and are generally areas where the provision of city water and wastewater infrastructure is not currently feasible and therefore will be reliant upon private water and sewer systems, such as wells and septic tanks. Agricultural and similar uses will be likely within these areas.

Traditional Development

Traditional development reflects the existing patterns of development throughout the cities of Midland and Odessa. Traditional development will be established subdivisions, supporting neighborhood retail nodes and varying densities of additional residential development, including multifamily development at appropriate locations. Traditional development will be a continuation of the types of development currently occurring at a rapid pace in east Odessa and western Midland. Traditional development will be served by city water, sewer and storm drainage infrastructure.

Mixed Use

The mixed use category is intended to reflect primarily retail development. Most establishments within this district would provide a good or service for purchase and establishments would contribute to the sales tax base. Retail development is often over accounted for and therefore, in order to allow flexibility, additional uses will likely take place within mixed use areas. Ideal uses in addition to retail would include office space and service functions, such as banks and hotels.

Mixed Use/Arts District

The mixed-use category is centered on the intersection SH 191 and SH 349. This category is reflective of a potential activity node focused around existing and planned developments within the area, including the Wagner Noël Performing Arts Center and the UTPB Engineering School, among others. This area is envisioned to be denser in nature containing a mix of retail, entertainment and residential uses. The SH 191 Corridor Study/Management Plan refers to the area as Los Canales and input as part of the Midessa Study indicates a desired continuation of the urban/town center district at this location.

Office

The office use category is envisioned to be a master-planned corporate business park and regional employment center. An example is the area centered around the Chevron Office Complex that is currently under construction and located along SH 191 between New Road 9 and New Road 10. This vision is a continuation of existing development either occurring or planned to take place within the general area.

Highway Commercial

Highway Commercial is concentrated along Business 20 along the southern border of the SH 191 Study Area. The highway commercial area is largely reflective of existing land uses along Business 20, but it also takes into account the higher levels of traffic along Business 20 that are conducive for a continuation of commercial sales activities. Highway commercial would provide services for sale, such as RV and equipment sales, and would likely contain outside storage or outside sales areas.

Trade Corridor

The trade corridor is focused to the north of SH 191 along SH 349. This area is envisioned to be a focal point for regional trade facilities due to its location along the La Entrada Corridor. The area will likely be a continuation of industrial warehouse/distribution and storage facilities that could support regional trade.

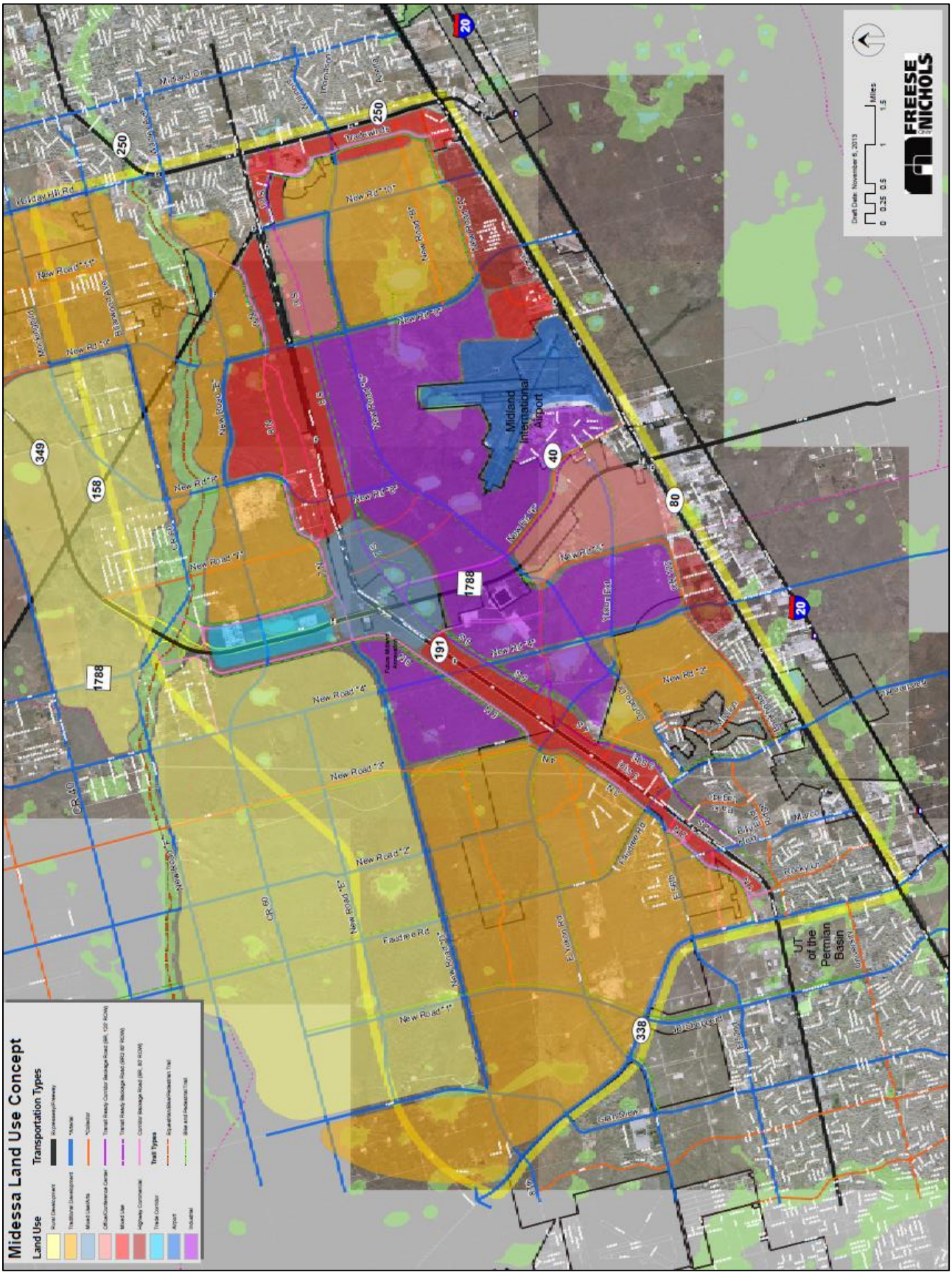
Airport

The central focal point and major land use influencer within the SH 191 district is the Midland International Airport. This city-owned facility provides passenger and freight services. The Airport category is also reflective of the XCOR Spaceport which will be using existing runways for its privatized spaceflight operations. The category is only reflective of the existing and planned airport boundaries and is not reflective of needed clear zones associated with commercial aircraft and spaceport operations.

Industrial

Industrial land uses are both a continuation of existing development patterns within the study area but also take into account planned future industrial activity. These areas will typically be uses that support the oil & gas industry; however, may also contain other light industrial or high tech uses.

Land Use Strategy Map



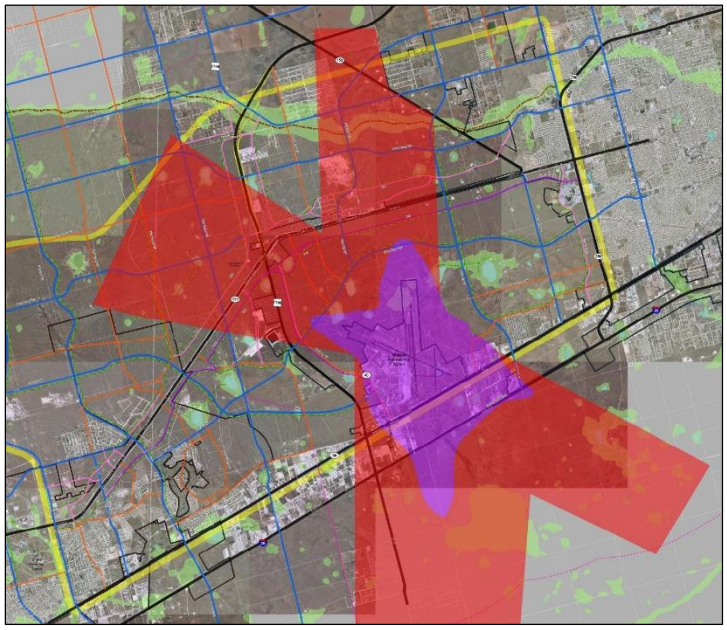
Land Use Issues

The revised sub area plan is generally similar to the Preferred Scenario from the SH 191 Corridor Study/Management Plan. The stakeholder interviews and input process generally resulted in very few land use changes to the originally proposed Preferred Scenario. Some minor changes, however, were made to reflect feedback received and recent developments since the time of the SH 191 Corridor Study/Management Plan. The following outlines some of the issues and changes that led to the revised sub area land use plan.

Spaceport Operations

The primary land use issue evolved around the addition of the XCOR Spaceport operations at the Midland International Airport. With the addition of a spaceport, there are additional requirements related to clear zones that are crucial to such operations. At the time of the study, XCOR and the City of Midland have submitted a preliminary analysis to the Office of Commercial Space Transportation, an office under the Federal Aviation Administration (FAA). The FAA is currently in the process of reviewing and evaluating the submission which will guide future flight path and clear zone regulations.

While the specific flight path and clear zone regulations remain to be specified, it is known that the areas directly to the north of the Midland International Airport will be integral in overall airport and spaceport operations. Areas directly to the north of the northeast runway are desired to remain completely free of development. This is especially true of any and all residential development which has the potential to significantly impact commercial and spaceport activity due to FAA regulations. Areas to the south of the Midland International Airport, while not within the defined study area boundaries, will have the same considerations.



The adoption of an Airport Height Hazard and Compatible Land Use Zoning ordinance by the City of Midland in July 2014, establishes controls as to the type of land uses allowable as well as, standards for noise attenuation (Noise Level Reductions) in construction materials used for development. Compatible land uses permitted within this airport overlay include; public uses, commercial, manufacturing, warehousing and recreational. Under the ordinance, residential uses appear restricted unless by approval of the community and certain noise attenuation is achieved.

Office Activity

Since the creation of the SH 191 Corridor Study/Management Plan, several office-related announcements have occurred. The first, as previously discussed, is the addition of the Chevron office facility along SH 191 in Midland. The Chevron office campus will include approximately 340,000 square feet of office space and a parking structure. The office campus is intended to serve Chevron's west Texas operations.

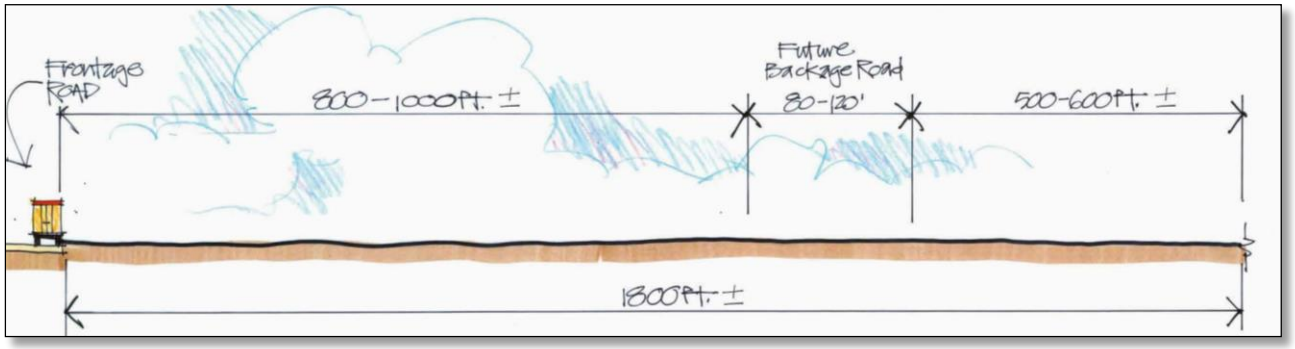
Adjacent to the Chevron office campus currently under construction, an additional office park containing four 100,000 square foot buildings has been announced. The inclusions of these two significant office uses within close proximity to each other create an opportunity for a business/office park development. The business park would likely be campus-style in nature, similar to what is being proposed and would likely contain a significant employment base.

Land Use Corridor Management Strategies

Short Term Strategies

The cities of Midland and Odessa have and should continue to annex 1,800 feet back from the access road on both sides of SH 191 so that the entire length is under the authority of a municipality. As shown, the 1,800 feet not only provides control of the land fronting on the access road, but also the development on both sides of the backage road. The city may want to consider the use of a developer agreement on properties that have significant objection to annexation. The goal is to manage the development process, provide for the backage roads and control haphazard and illegal access to the roadway system. If a property owner and their successors contract to abide by the development rules of a city, then it is an acceptable alternative. Terms of the agreement should be a "voluntary" request for annexation, however, if terms are violated, the respective city should implement the annexation.

Figure 6: Short Term Corridor Strategy

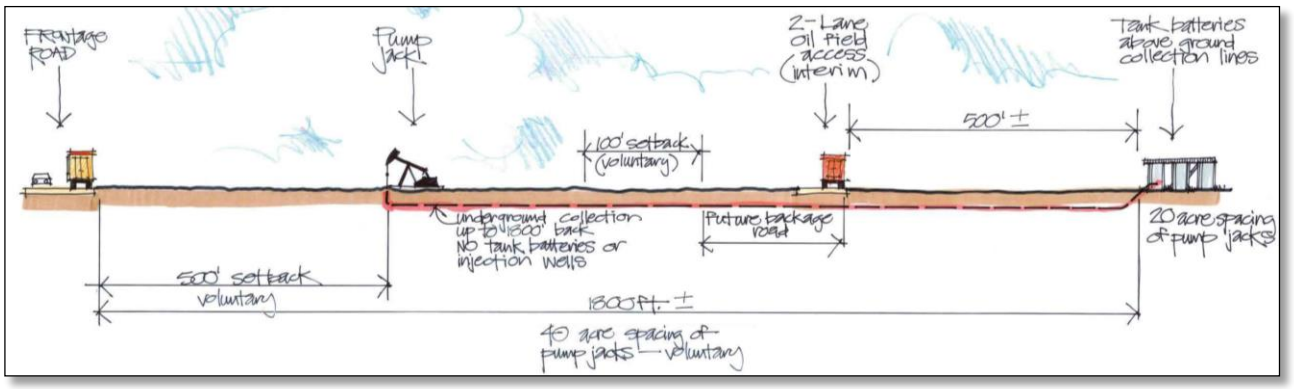


Mid-Term Strategies

While drilling and pump jacks may not be prohibited, negotiations with property owners, mineral interest holders and operators should be encouraged/incentivized to not have them within 500 feet of the access road and 100 feet of the backage roads. A 40-acre spacing should also be maintained. In addition, tank batteries or injection wells should be kept out of the 1,800 foot area and all collection lines should ultimately be placed underground. This will protect the view corridor of SH 191 and reserve viable areas for the future development that both Cities, Counties and citizens have indicated they want.

The right-of-way for the backage roads should also be negotiated for or required of developers as quickly as possible to protect corridors in the future. There may be some segments that should be constructed immediately to provide access and encourage development. In the interim, a separate road system should use the ROW to provide access to the oil facilities to reduce the access and deterioration issues of the frontage road.

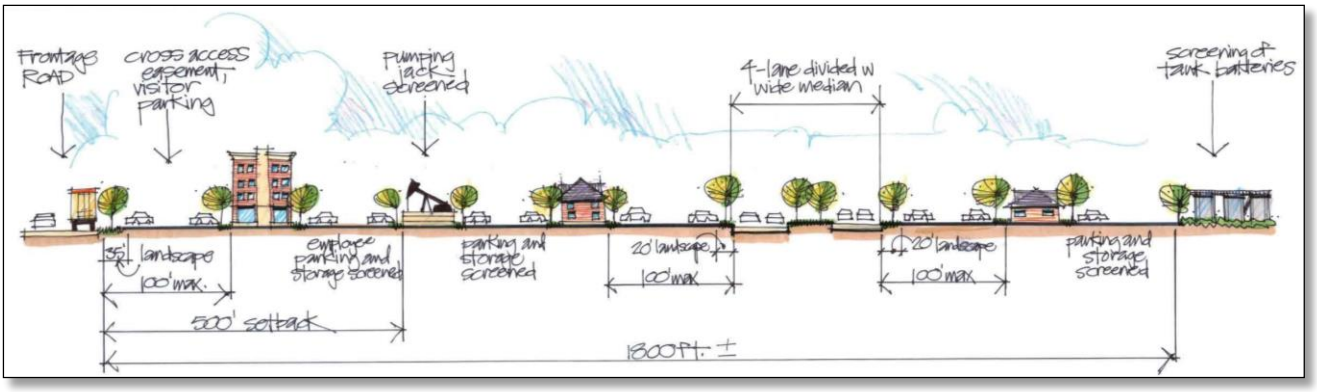
Figure 7: Mid-Term Corridor Strategy



Long-Term Strategies

The long term strategy illustration depicts the reasoning behind the short and mid-term strategies, ultimately leading to a functional development area along SH 191 that promotes quality development opportunities and value while also facilitating oil and gas operations.

Figure 8: Long-Term Corridor Strategy



- Create a special intergovernmental corridor zone to apply uniform and consistent standards for development including subdivision, thoroughfare, drainage and flood control, landscape and zoning standards.
  - All agencies adopt a thoroughfare plan for this area that ensures accommodation of autos, pedestrians and bicycles with street cross-sections and streetscaping that is appropriate for the adjacent development type. Narrow travel lanes, allow on-street parking and provide streetscaping to achieve desired drive speeds.
- Adopt a strategy, including standards, to improve playas and drainage corridors as an amenity for development and the community at large.
- Adopt a strategy to encourage joint development with pump jacks.
- Create a form based code for village centers to ensure that every development that is constructed contributes to creating a “great place” to the benefit of all.
- Encourage development that uses less water, provides xeriscape and shade.
- Establish a region-wide interconnecting hike/bike trail Master Plan.

Revised Land Use Plan

Land Use Changes

Taking the Land Use Issues described in the previous section into consideration, there are two primary land use changes to the Sub Area Map.

- The SH 191 Corridor Study/Management Plan did not contain an office land use category. The Chevron office campus and the proposed 400,000 square foot office complex adjacent to the Chevron office campus will have a combined square footage of nearly 800,000 square feet. This is a significant amount of office space and, therefore, an office land use category was created as a part of this study. The office category was created to reflect the opportunity for an office/business park along the SH 191 corridor that would serve a relatively significant professional and regional employment base.

  The previous land use area along SH 191 was industrial. Industrial and office land uses generally have different employment densities. Industrial development within the area is primarily associated with the oil & gas industry. This type of industrial development generally has a low employment density due to most facilities functioning as storage and supply facilities. Office space, on the other hand, has a higher employment density. The office developments within the area will likely employ more than 1,000 people. The difference in employment densities translates to higher traffic generation and potentially the need for supporting services. For this reason, it is beneficial to call out the developing office area on the land use plan as a potentially different type of land use than the previously used industrial.

- The second significant change on the land use plan is the expansion of the mixed-use non-residential category just to the north of SH 191 between New Road 8 and New Road 9. As previously discussed, the Midland International Airport clear zones are very important considerations, particularly as they apply to XCOR's spaceport operations. While the exact clear zone areas are currently under review by the FAA, development within close proximity of each runway terminus should be strongly discouraged. As the distance from the runway terminus increases, development becomes more acceptable, as long as development is not residential in nature.

  Residential development is one of the most significant factors considered during FAA approval of flight and space operations. This is due to the potential number of people affected by a crash impact on a residential area in contrast with non-residential areas. The SH 191 Corridor Study/Management Plan began traditional residential development north of the proposed corridor backage road on the north side of SH 191. In order to take into consideration future spaceport clear zone needs, traditional development has been pushed farther north now beginning at New Road E, between New Road 8 and New Road 9. The area previously reflected as traditional development has been replaced with mixed use non-residential, indicative of a variety of retail and service type uses with no residential component.

- The SH 191 Corridor Study/Management Plan contained a La Entrada Trade Corridor land use category. The purpose of this category was to reflect the impact of La Entrada through the SH 191 study area. It has been adjusted to allow both regional trade as well as other industrial type uses already prevalent in the area.

Land Use Actions

What	Short Term	Long Term	On Going	Who	How
# 1: Develop "pedestrian oriented" village centers/nodes at major interchanges and backage roads as shown, especially around UTPB "Los Canales" Center.		■		Cities of Midland and Odessa, property owners	Work with property owners to develop more detailed plans, concepts, etc.
# 2: Develop standards for and provide generous landscaping (desert tolerant) and trees behind curbs, around buildings, and along drainage ways and open space/trails.	■		■	Midland, Odessa, TXDOT, Counties of Midland, Ector, property owners	Develop common tree , landscaping requirements and standards for various roads, centers
# 3: Utilize street trees to shade sidewalks and paving to make walking/biking more comfortable.			■	Midland, Odessa, TXDOT, Counties of Midland, Ector, property owners	Develop common tree requirements and standards for various roads, centers
# 4: Connect the system to the greater region with hike/bike/equestrian trails to encourage recreation and enhance value creation. (also see Multi-Modal).		■		Midland, Odessa, TXDOT, Counties of Midland, Ector, property owners	Develop hike/bike/equestrian trail plan, amend subdivision ordinance, design standards to require
# 5: Require a mix of uses including different types of residential, office, retail and flex space, especially at the nodes with density/intensity supportive of transit stops.		■		Cities of Midland and Odessa	Adopt Overlay Zoning District with Form Based Provisions
# 6: Encourage buildings to be close to streets with extra wide sidewalks and with parking centrally located in village centers to give a pedestrian oriented "urban" feel.	■		■	Cities of Midland and Odessa	Adopt Overlay Zoning District with Form Based Provisions
# 7: Preserve playas as open space and drainage system, and use the storm drainage system as an amenity to development, especially within the village centers.	■		■	Midland, Odessa, TXDOT, Counties of Midland, Ector	Revise subdivision ordinance and drainage manuals
# 8: Provide key open spaces/plazas associated with retail, office, residential centers.		■		Midland, Odessa, Counties of Midland, Ector,	Work with property owners to "incentivize" qualified development

What	Short Term	Long Term	On Going	Who	How
# 9: Identify locations for "landmark" buildings, encourage design and construction, especially in the village centers, visible from SH 191 and/or the backage roads.				Midland, Odessa, Counties of Midland, Ector, property owners	Work with property owners to "incentivize" qualified development
# 10: Establish rules to require entryway and gateway features, regulate on-site and off-site signage (number, size, location, height).				Cities of Midland and Odessa	Adopt Overlay Zoning District
# 11: Annex 1,800 feet on both sides of SH 191 along entire 14 mile length of corridor.				Cities of Midland and Odessa	Initiate annexation, especially prior to development
# 12: Maintain 40 acre spacing in 1,800 foot corridor and keep pump jacks 500 feet back from frontage road, 100 feet from backage road.				Cities of Midland and Odessa, mineral interests, operators	Negotiate with operators, mineral interests
# 13: Protect backage roads from oil and development encroachment by immediately acquiring right of way for entire 14 mile length of corridor, especially at nodes or developing areas.				Midland, Odessa, TXDOT, Counties of Midland, Ector,	Negotiate with property owners, set aside funds, use eminent domain
# 14: In annexed areas, place requirements that tank batteries and injection wells must be at least 1,800 feet back from frontage road.				Cities of Midland and Odessa	Adopt Overlay Zoning District
# 15: In annexed areas, require collection lines to ultimately be placed underground within 1,800 feet of the SH 191 frontage road.				Cities of Midland and Odessa	Adopt Overlay Zoning District
# 16: Require outside storage to be behind main buildings and screened from major roadways. Wood, metal, chain link fencing to be avoided unless screened with solid vegetation.				Cities of Midland and Odessa	Adopt Overlay Zoning District
# 17: Require all roads within 1,800 feet of frontage road/development nodes to be paved with fire protection and sidewalks close to buildings to encourage pedestrian connectivity.				Cities of Midland and Odessa	Revise subdivision ordinance

What	Short Term	Long Term	On Going	Who	How
# 18: On properties disputing annexation within 1,800 feet, negotiate developer agreement with same requirements as annexed areas.				Cities of Midland and Odessa	If disputed, negotiate developer agreement
# 19: Require main buildings to be closer to roadway, with maximum setback of 100 feet with no more than one parking bay with landscaping. Additional parking behind buildings in center of block.				Cities of Midland and Odessa	Adopt Overlay Zoning District
# 20: Metal building facades visible from freeway, backage road and other ROW shall be prohibited.				Cities of Midland and Odessa	Adopt Overlay Zoning District

Transportation Strategies

Transportation Issues

The following were identified by stakeholders as factors that may impact transportation decisions within the study area.

Executive Hotel

During stakeholder interviews, the potential for a future executive hotel and residences was identified along the southeastern side of the airport, as previously discussed. The transportation implications of this potential development would be the extension of New Road A, a collector roadway on the southern side of the study area, farther to the west before turning south to Business 20. This will provide access to the area where a hotel could potentially be built. This would also help to facilitate other service type uses which may be located in the area in association with the executive hotel.

SH 349 at CR 60 Interchange

Due to the construction of SH 349, CR 60 is depicted to traverse northward and connect with FM 1788 rather than continue due west. The stakeholder interviews indicated that it would be preferable for the interchange at SH 349 and CR 60 to be located farther to the south in order to continue the east-west configuration of CR 60 rather than reconfigure the roadway to continue the east-west grid farther to the north.

Transit Ready Corridor

The backage road for the SH 191 corridor employs two basic schemes. A "transit ready" corridor situated within a 120' right-of-way enables consideration of potential long-term transit opportunity. Implemented initially as a divided roadway, the central median can be used initially for bike/pedestrian or landscaped amenities. As the corridor develops and transit is warranted, the center median would be converted for use by bus or fixed service. To provide connectivity between SH 191 and the airport, a transit ready backage road is also envisioned along the eastern side of SH 349. This connection could also provide linkage with the new EZ Rider Multi-Modal Center on Younger Road at the airport.

Tradewinds Boulevard

Tradewinds Boulevard is located directly to the east of Loop 250 in eastern Midland. The area is currently experiencing rapid growth as office, residential and retail uses are being constructed. Tradewinds Boulevard currently ends at Thomason Drive. Development along the southern side of Tradewinds Boulevard, near Business 20, is also occurring. Tradewinds Boulevard not only serves as an entertainment and retail corridor, but it also functions as a backage road along the western side of Loop 250. The continuation of Tradewinds Boulevard should be emphasized to enhance connectivity between development occurring at SH 191 and at Business 20.

Connections to Interstate 20

Currently there are only three connections to Interstate 20 within the SH 191 study area—Loop 338, SH 349, and Loop 250. Additional connections to Interstate 20 were identified as a means to help facilitate better circulation within the area. One potential issue with adding additional connections to Interstate 20 is the use of those additional connections by trucking traffic. These new connections may traverse new retail and residential areas also in the area.

This plan recommends two additional connections to Interstate 20. One connection is recommended at Road 9. The future land use to the west of New Road 9 is industrial in nature and therefore the construction of the roadway would help to provide access to Interstate 20 from industrial areas.

Additionally, the connection to Interstate 20 would help to provide an additional access point for office development that may occur to the east of New Road 9 at SH 191. A large number of employees may work in the area with the Chevron office campus development and other expected office uses and therefore connecting New Road 9 to Interstate 20 may help to alleviate some of the potential congestion along SH 191 by providing an alternate access route.

On the western side of the study area, Faudree Road is proposed to be extended to Interstate 20. The area at Faudree Road and SH 191 is rapidly developing as retail, office and residential development is occurring. On the north side of SH 191, future residential subdivisions are anticipated as infrastructure improvements occur. Extending Faudree Road to Interstate 20 will help to facilitate traffic movements within the area as growth occurs. Due to the residential, retail and office nature of development within east Odessa, trucking traffic along the Faudree Road corridor must be carefully managed and trucking routes should be enforced.

Key Thoroughfare Plan Themes

- A backage road system paralleling SH 191. This is recommended to support and enhance economic benefit opportunity to the corridor, provide additional access/circulation to adjacent area properties and offer added corridor carrying capacity. Where possible, the backage roads take advantage of existing streets and/or approved proposed connections per City Thoroughfare Plans. The backage road also aligns at varying distances from SH 191 based upon critical distances needed for intersecting roadways with SH 191. Two types of backage roads are proposed: a varying lane type road within 80' of right-of-way on the north, and a "transit ready corridor" within 120' of right-of-way on the south. The potential for transit would support development of nodal centers of activity envisioned along the corridor.

- A backage road system paralleling FM 1788/SH 349. This would support long-term expansion of the corridor (anticipated with frontage roads) and maximize development opportunity of the La Entrada Trade Corridor. Conceptual planning for reconstruction of the SH 191/SH 349 interchange depresses the main lanes of SH 349 (under SH 191) creating intersecting frontage roads in a manner similar to the box-diamond currently at Loop 250/SH 191. The close proximity of the backage road to SH 191 may only allow for a grade separated crossing with direct access provided at further up or downstream locations to SH 349.

- Supporting east-west capacity and connectivity to developing areas within the SH 191 sub-area via a network of arterial roads including: Yukon Road (extending to the Midland International Airport), New Road "C" (connecting Thomason Drive/Loop 250 to Dorado Drive), New Road "E" (connecting Wadley Avenue across SH 349 with CR 60 to SH 338), New Road "D" (connecting SH 349 and 87th Street), and other supporting linkages (56th Street, Briarwood, and New Road "F").

- Supporting north-south arterial facilities to provide area-wide network support and accessibility including: Grandview/FM 554, Road "1"/JBS Parkway, Faudree Road, Roads "2", "4", "8", "9" and "10"/SH 158.

- Grade separated crossings with SH 191 at: SH 338, Billy Hext Road, Faudree Road, Yukon Road extension, Road "4", SH 349, Road "8"/CR 1275, Road "9", SH 158 and Loop 250.

- A collector street network supporting the recommended arterial grid system and providing accessibility to developing areas of the study area.

- Retention of Yukon Road Extension as key entry point to the Midland International Airport from Odessa. A realignment of Yukon Road Extension further to the west along SH 191 is recommended to take advantage or roadway dedications through the Parks Bell development. The previous location for Yukon Road Extension (at SH 191) is inhibited due to development activity that has occurred outside Odessa and could be costly from a right-of-way acquisition perspective.

- The definition of a key north-south arterial (Road "4"), which parallels FM 1788 one mile to the west, providing key area support with: connectivity throughout the study area and at Business 20, connection point at SH 191, and offering an alternative for local traffic to heavy travel demands anticipated in the SH 349 corridor. Its central location within the SH 191 corridor is key as it will be one of few corridors (within seven miles between Faudree and New Road "9") offering true direct local north-south accessibility within the study area. This arterial road is envisioned to follow the negotiated extraterritorial jurisdiction between the two cities and offer access to SH 191 between FM 1788 and the proposed Yukon interchange.

- Realignment of Briarwood and Mockingbird Streets to leverage system connectivity east of SH 349. Briarwood Avenue would be realigned to connect with (current) FM 1788 and Road "F" to not only reflect the new FM 1788/SH 249 interchange, but provide continuation of the arterial grid network west of FM 1788. Mockingbird Street would be realigned to the south to connect with Road "8" (extension of CR 1275) at SH 158 and in essence, providing a parallel arterial street to the east of SH 349.

- Arterial connectivity with existing major thoroughfares at Loop 338 and Loop 250.

- Preservation playas and other environmentally sensitive areas such as watersheds and floodplain areas. Realignment of New Road "8" (CR 1275) to avoid existing quarrying operations.

- An interconnected series of trails for bike and pedestrian facilities adjacent/along the key roadways and connecting to potential open space areas associated with existing playas. An equestrian trail situated along the Jal Draw and extending from Holiday Hill Road in Midland to the west along northern sector of the study area.

Roadway Classifications

The following are the roadway classifications depicted on the Transportation Plan.

Expressway/Freeway

These roadways are anticipated to be controlled access, divided roadways that accommodate high traffic volumes and promote regional-level circulation and mobility. Expressways/Freeways within the study area include SH 191, SH 349, Loop 338 and Loop 250.

Arterial

Arterial roadways are those providing regional circulation and connectivity but are not limited-access in nature. They are generally spaced approximately one-mile apart and provide access to the expressway/freeway network.

Collector

Collector roadways are those providing internal connectivity and generally do not serve a regional function. Collector roadways generally help move and distribute traffic to the arterial roadway network.

Transit Ready Corridor

Transit ready corridors are those intentionally designed to accommodate future transit options, such as bus rapid transit. As transit ready corridor roadways are constructed, consideration should be given to the future incorporation of transit possibilities in order to make their incorporation streamlined if and when such decisions are deemed necessary.

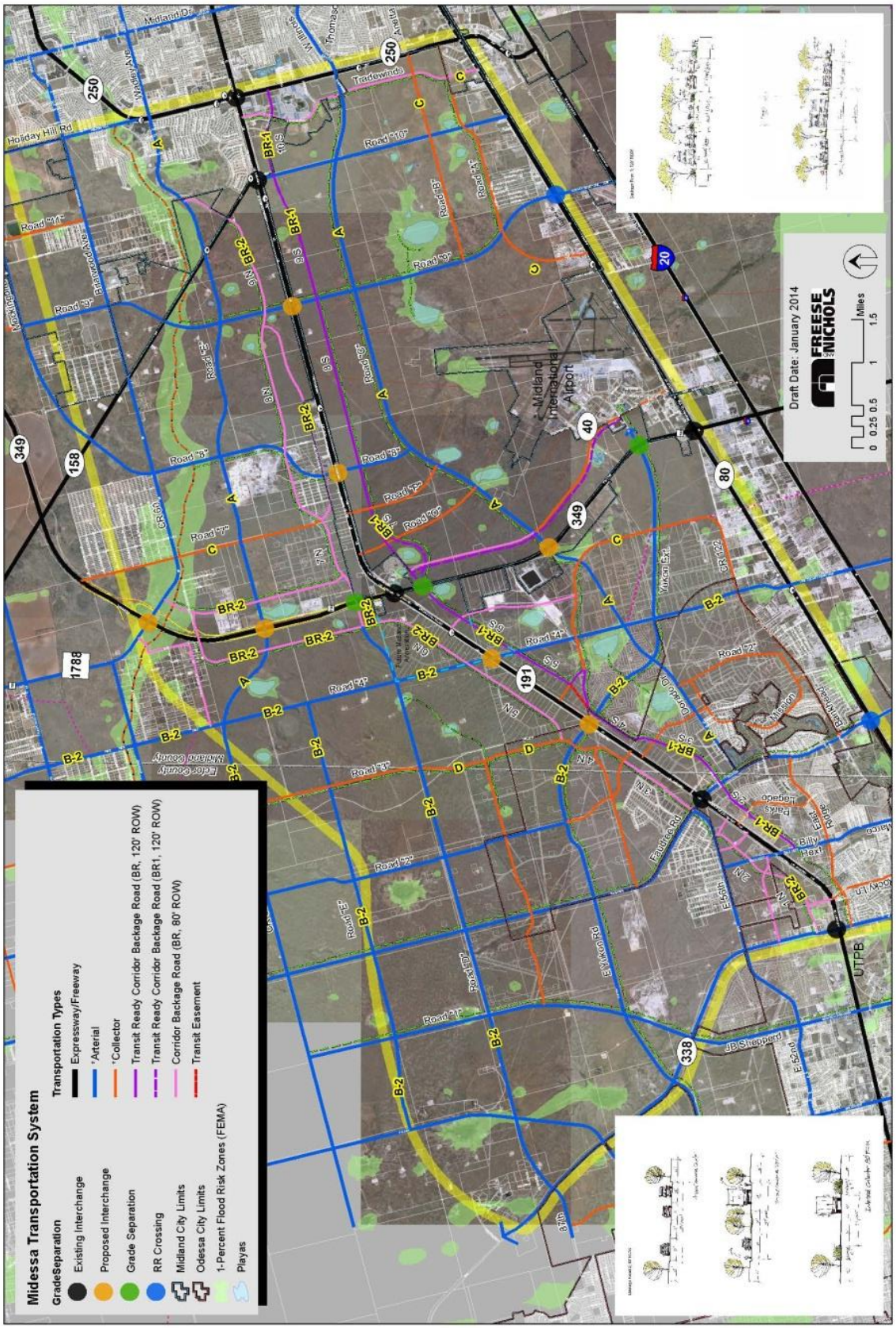
Transit Easement

The transit easement reflects an area where, as development occurs, a consideration for future transit should be considered. It is intended to provide a contiguous linear transit route along BR-1 by connecting two segments which, due to roadway configuration, are not linked.

Corridor Backage Road

Corridor backage roads are those running parallel to freeways and expressways. They support traffic movements to development located along one-way frontage roads.

Revised Transportation Plan Map



Corridor Management

Corridor management refers to the coordination of land development and transportation facilities within an existing corridor to promote orderly development circulation. Corridor management promotes long-range planning for future growth and development. Corridor management involves long-range transportation planning and involvement/coordination of both local and regional agencies in order to maximize investment in transportation facilities. The following are some of the best practices related to corridor management.

Table 4: Types of Corridor Management and Improvement Strategies

Strategy Type	Examples
Minor Roadway and Operational Improvements	• Improved signage and markings • Signals and other intersection controls • Bulb-outs and pedestrian signals • Off-road safety improvements (e.g., guardrails, vegetation clearance) • Drainage systems and maintenance practices to reduce environmental impacts, improve water quality, etc. • On-street parking restrictions • Designated truck routes • Intelligent transportation systems (ITS) strategies such as traveler information and incident response • Seasonal and special event controls (e.g., traffic officer)
Major Roadway Improvements	• Lane additions at intersections • Roundabouts • Medians and channelization • Shoulder widening • Horizontal and vertical curve realignment • Climbing lanes • Passing lanes • New general-purpose lanes
Zoning and Land Use	• Land use and zoning provisions to encourage concentrated development • Designation of specific planning areas within town plans with guidelines for development, resource protection, and access management • Designation of scenic view corridor • Site plan review requirements for developments along the corridor • Subdivision regulations that encourage pedestrian connectivity and internal street connections to reduce traffic volumes on main roads • Provisions to allow for shared parking among adjacent uses • Growth management tools, such as development phasing and infrastructure concurrency requirements • Overlay districts to protect critical resources • Performance standards for new developments
Access Management	• Driveway consolidation • Turn restrictions and medians • Intersection spacing • Local street infrastructure
Alternative Mode Improvements and Travel Demand Management	• Signs and markings (pedestrian crossings, bicycle lanes) • Sidewalk improvements • Off-road bicycle/pedestrian paths • Transit service improvements • Travel demand management programs, such as rideshare programs and employer transit subsidies • Rail capacity and service improvements • Intermodal facility and access improvements (passenger, freight)
Modal Connectivity Improvements	• Park-and-ride lots • Bike racks on buses • Shuttle services

Access Coordination

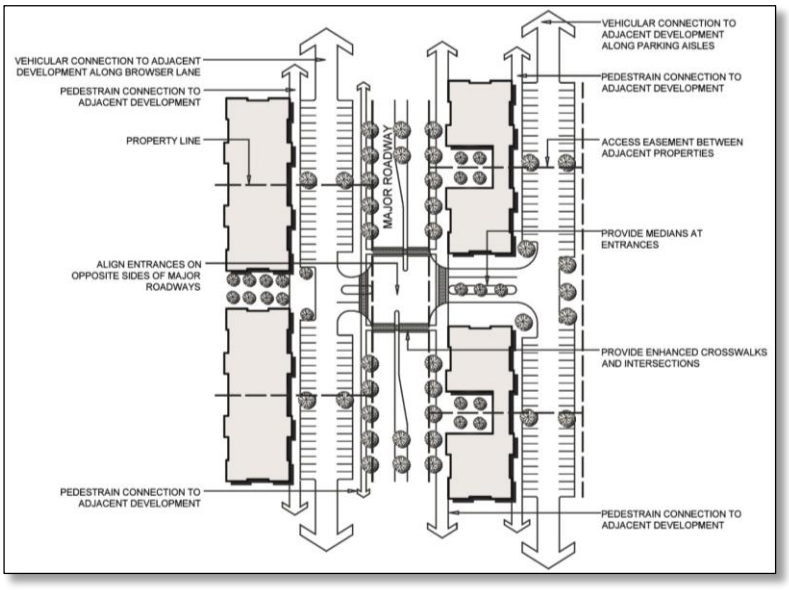
Flow of traffic is typically a major concern for most communities. The ability to move traffic efficiently along a corridor with minimal interference from traffic turning off and onto intersecting driveways/streets is a major benefit to motorists. Ideally, drivers should be able to avoid unnecessary "stop-and-go" traffic due to the abundance of intersecting driveways/streets. While the implementation of deceleration lanes for streets and driveways on major and minor thoroughfares enhances capacity and accessibility, coordination of access offers added benefits for the following reasons:

- Reduces the number of ingress and egress points improving vehicular flow and reducing collisions;
- Permits more landscaping frontage thereby enhancing roadway aesthetics; and
- Enhances the pedestrian experience by reducing pedestrian contact with turning traffic.

Along key corridors, the concept of access coordination can be extended from individual sites to address corridor-wide segments. Shared access between properties will enable:

- Allows for flexible and special area consideration to adjacent site development, special access and utilities coordination, and limits unnecessary connection points;
- Aesthetics and amenity considerations;
- Promotes activity-based development centers, not strip retail; and,
- Coordination of transportation and land use planning/decision making.

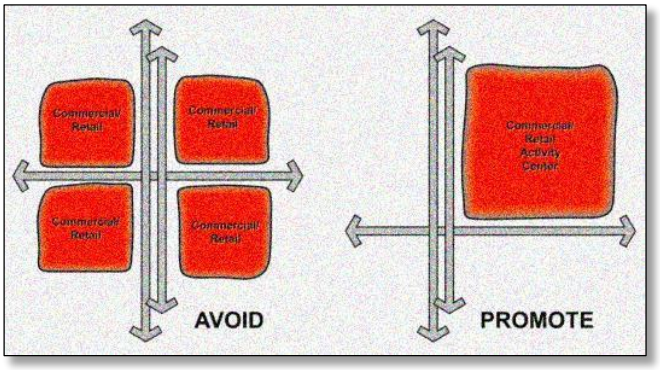
Shared Access and Cross Access

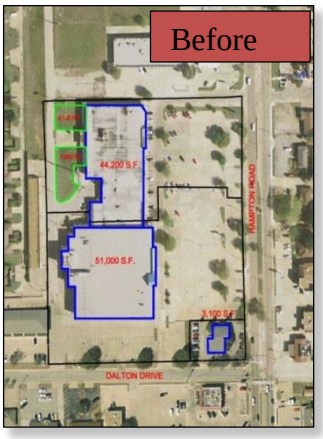


Reducing the number of driveways enhances corridor landscaping and aesthetics

Development Policies

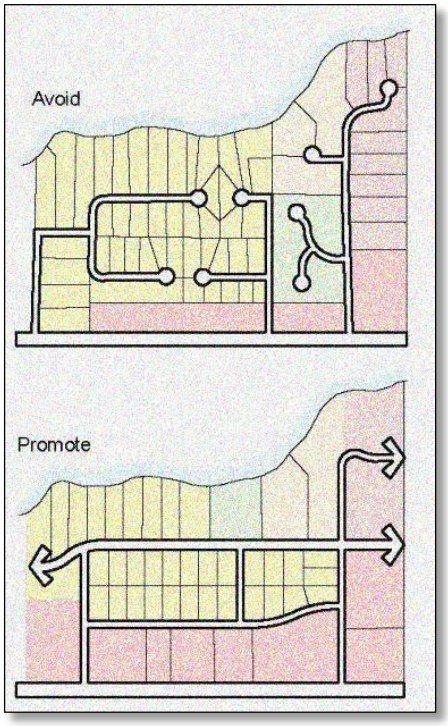
A high priority in development policies is to encourage activity centers instead of strip development. Activity centers allow for internal circulation among businesses and increase the available capacity of the corridor, while strip development needs more access points along the roadway, decreasing safety and capacity. Activity centers can be promoted by requiring greater lot depths and frontage amounts for commercial zones. Also, improving site circulation reduces the likelihood of strip development and "parceled" access points. Supporting roads, such as backage roads or internal circulator streets also help promote activity centers. The image at right depicts traditional development across lots. By promoting internal circulation and creative land use patterns, a range of mixed-uses can evolve utilizing shared drives/parking.





Neighborhood connectivity is important to creating easily navigable, successful areas. By connecting neighborhoods which emphasize internal and connectivity with local streets, a supporting road network can be formed. Select streets should then be planned for connections to key corridors to avoid excessive intersection locations. As short local trips are removed from the corridor, corridor demands are also reduced.

Planning within a community's extraterritorial jurisdiction (ETJ) also plays a vital role in the growth and expansion of the corridor. The timing and extension of infrastructure should be carefully considered in order to avoid land use patterns or intensities that may not be in accordance with the development policies of the city. These include transportation, water and drainage plans, subdivision requirements, access regulations, and development agreements.



Driveway Spacing

By placing a minimum separation requirement on the distance between driveways, the total number of driveways is limited and the likelihood of shared or cross access in developments is increased. Limiting the number of driveways increases motorist safety by reducing potential collision points. TxDOT standards for driveway spacing on state highway and frontage roads are detailed below. Consideration should be given to extending drive spacing on the frontage road to 400-500' as part of the corridor management plan for SH 191.

Table 5: TxDOT Driveway Spacing Standards

Posted Speed (mph)	Minimum Distance (feet)		
	Existing State Highways (excluding freeways and frontage roads)	Frontage Roads	
		1-way	2-way
≤ 30	200	200	200
35	250	250	300
40	305	305	360
45	360	360	435
≥ 50	425	425	510

Recommendations commercial for driveway spacing for supporting roadways/backage roads to SH 191 is listed below.

Table 6: Driveway Spacing Strategies for SH 191 Corridor

Characteristic	Arterial	Collector	Local
Drive Spacing	200-400'	100-300'	-
Min. Distance to Intersection	75-100'	50'	-
Divided Street Median opening*	500-600'	500	-
*Nose to nose length			

Corner Clearance

Near the functional area of intersections, driveways and other conflicts should be minimized in order to improve safety and capacity of the intersection. This can be accomplished through local provisions, such as requiring shared/cross access easements for all corners, no full movement driveways in functional areas, minimum lot size for corners, and outparcels obtain access from within.

Signalized Intersection Location and Spacing

When signalized intersections are used, long uniform spacing is needed between the intersections. This must be considered in local street planning, driveway permitting, and when locating median openings. Adopting a corridor management plan ensures proper signal spacing. It is difficult to uphold signal spacing guidelines without a corridor management plan since new signal locations are determined by development. Intersection spacing for arterial streets should be at least one mile and for collector streets about one mile.

Non-Traversable Medians

Since improving safety and progression are key factors in the development of a corridor, the consideration of medians are essential. “Roadways with a non-traversable (raised) median have an average crash rate about 30 percent less than roadways with a [two way left turn lane or] TWLTL.” These medians should be included in local arterial design standards and installed ahead of development. Limited access medians should be used in lieu of full openings since there are fewer conflict points.

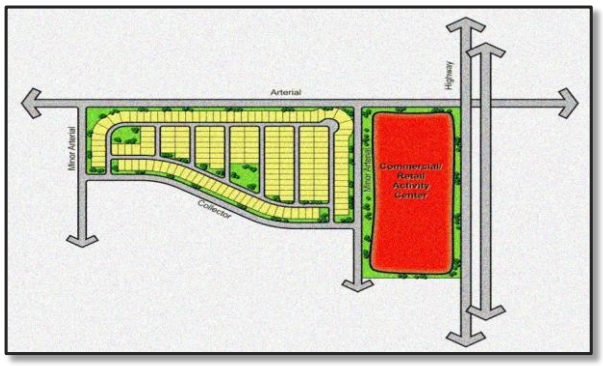
Arterial Frontage and Backage Roads

Arterial frontage and backage roads prevent driveways and direct access to the corridor, while still providing good visibility for the businesses. By consolidating access, signal spacing and access criteria can be met. Adequate separation between backage roads and arterials at connector intersections is crucial as well.

Zoning and Site Considerations

Corridor zoning overlay districts are supplemental regulations to the base zoning districts. Existing requirements of the base zoning district of each parcel is retained, but additional measures can be put in place. This allows for a ‘corridor-wide’ approach instead of by site. Key items that can be used in overlays include:

- Access plan, future access points
- Increased driveway throats
- Internal connections between parcels
- No direct access to outparcels
- Increased setbacks
- Land use prohibitions, intensity regulations
- Utility placement
- Aesthetics



Platting Considerations

Future ROW designation on a plat prevents development and improvements in this area. ROW reservation does not transfer ownership of property, but conveys that ROW may be purchased in the future. Reservation may be negotiated or a compromise option to dedication. This method helps reduce cost for future ROW acquisition.

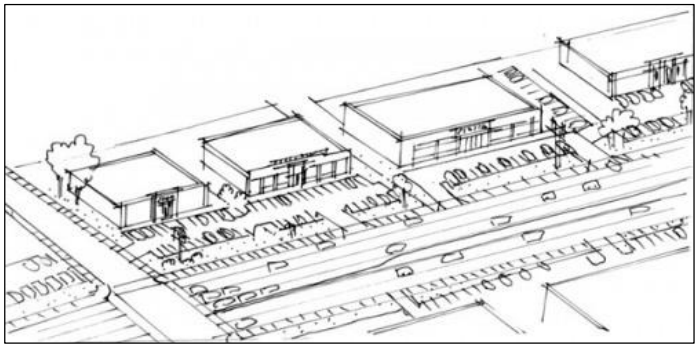
Access easements on plats are the most important tool to ensure driveway spacing criteria. Property being subdivided into frontage amounts that cannot meet spacing requirements can benefit from the use of shared, cross, or blanket easements during the platting process.

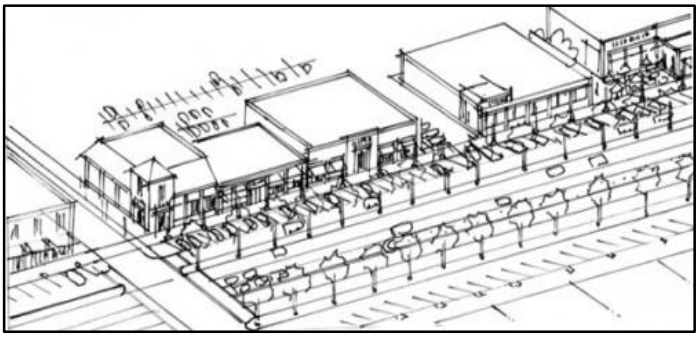
Acquisition of access rights should be considered early and is commonly done during ROW acquisition. This is acquired, purchased or condemned and prevents future takings claims. Acquisition of access rights allows for permanent access control. It is used primarily for new highways via ‘access control lines’, but can also be used to control access and sight distance at intersections, preclude future access in the area of ramps and intersections, or a case-by-case basis for safety and design considerations.

Multi-Way Boulevards

Customary strip retail on major roadways is situated in the following format: adjacent street with sidewalks on the right-of-way edge, parking lot, smaller sidewalk, and then the storefront. While parking may be connected between the stores, the sidewalks at the storefronts are usually disjointed. This method of development leads to an unfriendly environment for pedestrians, since there is little protection between the roadway and sidewalk and there is no connection at the storefront level.

An alternative development pattern would be the multi-way boulevard. This method maintains the main lanes for adjacent street traffic, but is then divided from a parking access lane by a landscaped median. This parking lane acts like a one way street and stretches from one block to the next, eliminating unnecessary driveways along the street. Along this access lane, parallel or angled parking is provided, with additional parking located behind the stores. For pedestrians, a wide continuous sidewalk is provided along the length of the block, with the protection of parking and landscaping from the high speed traffic.





Multi-Modal Considerations

With a majority of the study corridor and sub-area relatively undeveloped, the predominant mode of travel is vehicular oriented. New development, area biking activity, recent transit improvements, and continued planning for multi-modal components illustrate the possibilities for integrated transportation systems in the area. The following is an overview of transportation systems and planning affecting the study area.

Vehicular

A range of planning initiatives have been prioritized and involve Loop 338, SH 349, Loop 250 and Business 20. TxDOT has also conducted cursory planning on identifying needs for SH 349 through the study area. Items envisioned include upgrade to freeway, frontage roads, and a three-level interchange at SH 191 (SH 349 depressed under SH 191). Upgrade of this corridor will enhance opportunities associated with the La Entrada Trade Corridor as well as, create a measurable increase in truck traffic safety that is currently an issue.

Transit

The implementation of the EZ Express and supporting Park & Ride locations has begun to satisfy a mobility need between Odessa and Midland. Potential partnership with the UTPB CEED for a shuttle/park-and-ride lot is beginning to formalize the SH 191/FM 1788 area as a key node of development in the future. As the SH 191/FM 1788 node continues to develop, it will be important to program transit connectivity throughout the SH 191 corridor.

The construction of the intermodal facility west of the airport provides hub opportunity for both local and regional transit. Locally, this hub could be used to link bus transit routes from both Odessa and Midland. Likewise, as a regional transit hub, other private operating systems could provide connecting service. Finally, its proximity to the airport and the SH 191 corridor enhances transit opportunity and connectivity for future sub-area development.

Bike/Pedestrian Systems

The increasing popularity of the SH 191 frontage roads as a cycling loop between Odessa and Midland illustrates the need to incorporate a bike path system as part of the sub-area plan. The 8.4 mile West Midland Bikepath and the 3.4 mile East Odessa Greenway/Bikepath could serve as connection points between the sub-area and the communities. Inherent as part of this bikeway is pedestrian connectivity for linking parks, schools, retail, and entertainment areas. The sub-area transportation plan identifies a bicycle and pedestrian system running parallel to major roadways.

Air Transportation

The Midland International Airport provides key connectivity with the state and nation. Vehicular and transit connectivity to the airport from both Midland and Odessa is critical to ensure the continued economic success of the region. The Airport Land Use Plan identifies aviation, non-aviation and industrial uses to support the airport as well as from a possible intermodal/logistics hub perspective. Potential freight rail connection in the vicinity of the airport could further solidify the development of an inland port in the southern sector of the sub-area.

Transportation Priorities

What	Short Term	Long Term	On Going	Who	How
# 1: Sub-area Thoroughfare Plan - Adopt.	■			Midland, Odessa, TXDOT, MOTOR, Midland & Ector Counties	Amend thoroughfare plans, use revised cross sections in SH 191 Corridor
# 2: Backage roads for SH 191, SH 349 and FM 1788 - Protect.	■		■	Midland, Odessa, TXDOT, MOTOR, Midland & Ector Counties	Plan and obtain ROW by negotiating with property owners
# 3: Yukon, north/south of SH 191, and related grade separated interchange - Construct.		■	■	Odessa, TXDOT, MOTOR, Midland & Ector Counties	Plan and obtain ROW for entire road, design/obtain financing for interchange
# 4: Road 4 - a north-south arterial one mile west of and paralleling FM 1788.		■	■	Midland, Odessa, TXDOT, MOTOR, Midland & Ector Counties	Plan and obtain ROW, work with property owners to construct
# 5: SH 191/SH 349/FM1788 Interchange - Construct.		■		TXDOT, MOTOR	Plan, design and construct the 3 levels
# 6: Metropolitan Transportation Plan (MTP) - Revise.	■			MOTOR	Incorporate adopted thoroughfare plan revisions into 2035 MTP
# 7: Los Canales Village Center (UTPB) - Road Support System (Roads "C", "P", "O" and related Backage Roads) – Construct.	■			Midland, TXDOT, MOTOR, Midland County	Plan and obtain ROW, work with property owners to construct
# 8: CR 1275 north of SH 191 - Construct.	■			Midland, TXDOT, MOTOR, Midland County	Plan, realign and obtain ROW around the mining operation,
# 9: SH 349/FM 1788 Interchange, Realignment of CR 60, Briarwood, Wadley (Road E) – Construct.		■	■	Midland, TXDOT, MOTOR, Midland County	Plan, design and construct the grade separated interchange
# 10: Road 4 interchange with SH 191 – Construct.		■		TXDOT, MOTOR	Plan, design and construct the grade separated interchange
# 11: Implement "transit ready corridor backage road" for transit service opportunity within SH 191 corridor. Additional ROW within center of roadway allows for short and long-term transit between mixed use node areas.	■	■		Midland and Odessa, Transit Agencies, MOTOR	Include corridor on Transit System Plans and Metropolitan Transportation Plan

What	Short Term	Long Term	On Going	Who	How
# 12: Develop a detailed system wide bike plan, including connections with SH 191 corridor/Mixed Use Centers (includes north/south facilities across SH 191).	■			Midland and Odessa, TXDOT	Work with the bicycle interests and other experts to develop a bike system SH 191 Sub-area Plan.
# 13: Designate multi-modal transit hubs at key location areas within the corridor, at UT Permian Basin located at Loop 338, Scharbauer Sports Complex at Loop 250, at "Los Canales Village Center" at SH 349, key arterial crossings.	■			Midland and Odessa, Transit Agencies, MPO	Transit Systems Plan and Metropolitan Transportation Plan
# 14: Coordinate equestrian trail connectivity and system phasing with other bike/pedestrian linkages.		■		Midland and Odessa	Equestrian trail programming and CIP
# 15: Identify short and long-term transit options for "transit ready corridor" and system phasing/implementation; develop phasing of transit corridor improvements.	■			Midland and Odessa, Transit Agencies,	Transit programming and CIP
# 16: Identify long-term transit connection from "Los Canales Village Center" with Midland International Airport, other regional significant connection points.	■			Midland and Odessa, Transit Agencies, MOTOR	Transit Systems Plan and Metropolitan Transportation Plan
# 17: Investigate funding mechanisms for transit system development and implementation including public-private partnerships.	■		■	Midland and Odessa, Transit Agencies, MOTOR	Utilize various funding mechanisms and strategies
# 18: Coordinate and implement trail linkages with transit station programming.	■			Midland and Odessa, Transit Agencies,	Bike/Pedestrian System integration and programming
# 19: Identify general station area design features, amenities and requirements/needs.	■	■		Midland and Odessa, Transit Agencies,	Station area planning

Environmental Implications

Activity associated with the airport and spaceport will have certain implications on land use, particularly in regards to airport clear zones and noise. The following outlines some of the considerations that should be made in order to mitigate airport operations and land use conflicts.

Spaceport Needs

The addition of XCOR to the Midland International Airport brings many new opportunities to Midland and Odessa. Upon FAA approval, the airport would be cleared for commercial space operations. The following are the primary needs and implications of the spaceport and other aerospace activities.

Clear Zones

The primary implications of the Midland International Airport and XCOR operations are the associated clear zones. Discussed previously, the Midland International Airport has submitted its initial request to the Office of Commercial Space Transportation, a department within the Federal Aviation Administration (FAA). Approval by the FAA would enable Midland International Airport to operate as a commercial space transportation facility and would ultimately allow XCOR to operate at the location. The FAA is currently in the process of evaluating the submittal and, at the time of the study, no formal clear zone decisions had been finalized.

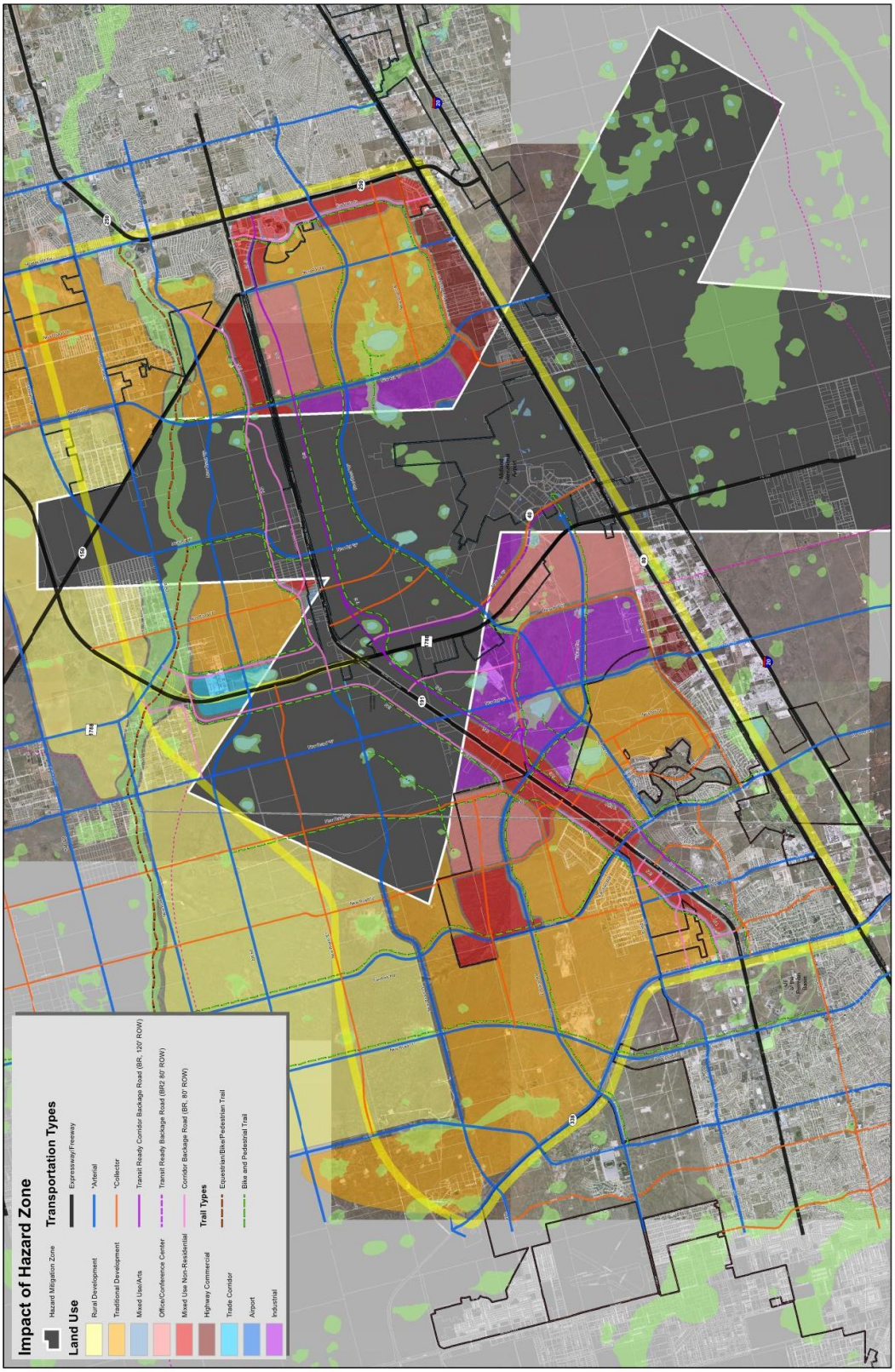
While no specifics regarding the required clear zone have been formalized, areas near the terminus of airport runways will be critical to future air and space operations at Midland International Airport. The reasoning for keeping clear zone areas free of development is due to the potential impacts that a crash may have within the immediate area after takeoff and during descent. An assessment is made as to the number of persons who could potentially be impacted if a crash were to occur. For this reason, areas located within close proximity of airport runways should ideally be kept clear of all development. As distance from runways increases, low-density uses may become appropriate. The most ideal types of development would be industrial uses with low employee densities. Examples would include industrial warehouse and similar storage-type facilities. It is critical that residential development not be located within the immediate clear zone areas. The presence of residential uses may critically impact air and space operations.

Land Use Implications

The land use implications of the airport and aerospace activities have yet to be fully understood. Once the FAA submittal is reviewed and finalized, more detailed land use implications will be known. Regardless, the following are some of the general land use implications that must be considered around the Midland International Airport:

- No development should be located at the terminus of the airport runways. Any development that may occur within the immediate vicinity of the airport runway terminus may have significant impacts upon air and space operations at Midland International Airport;
- Residential development should be very carefully considered. Any residential development, particularly multifamily or higher density residential, would have significant negative impacts on the air and space operations. Residential land uses within the immediate clear zone areas are heavily weighted by the FAA in approving air and space operations;
- Office development within the immediate clear zone areas should be discouraged. Office uses typically have higher employees per square foot than industrial uses and therefore there would be a higher number of people located within the clear zone during working business hours. This could impact FAA approval;

Impact of Airport Hazard Map



- Retail development within the immediate clear zone area should also be discouraged. Retail uses attract customers and therefore have a higher number of people than industrial uses;
- If development is to occur in the immediate clear zone areas, it should be industrial in nature. Industrial uses generally have a lower number of persons per square foot than office, retail and residential uses. Additionally, many of the industrial uses within the area rely upon outside storage which also has a minimal number of employees per square feet. The low number of persons at any given time in industrial land uses would have minimal impacts on air and space operations; and
- Work with the airport to identify options to continue development at the Los Canales development node located at SH 349 and SH 191. The cities of Midland and Odessa have made significant investments within the area and stakeholders have indicated a strong desire to continue to create a node of activity at this location. Decision-makers should work with the airport on creating a strategy that would accommodate development at Los Canales while still allowing airport operations. A potential scenario would be the use of the southwest-northeast runway for aerospace operations, thereby mitigating the impacts of the clear zone on the Los Canales area.

Ancillary Uses

Industrial activity is typically located within close proximity of airports. The reasoning for this is two-fold. First, airports generally support distribution activities, in addition to passenger transportation. Industrial storage and distribution facilities are therefore typically needed. Secondly, due to FAA regulations and the nature of airports, industrial activity is typically the most compatible land use. Clear zone regulations necessitate a low number of persons to reduce the potential life-threatening impacts of a crash within the clear zone areas. Industrial activity usually has a low number of employees per square feet. Airports also generate certain nuisances, such as noise. This also makes industrial activity compatible within close proximity of airports.

An influencing land use factor unique to the Midland International Airport is the additional aerospace activity that may occur. The announcement of XCOR locating its testing and launching facilities to the Midland International Airport may generate additional aerospace research activity. NASA's emphasis on private sector solutions to space transportation and research may inevitably lead to an increase in aerospace research activity. The aerospace industry will require testing of transport vehicles and other technologies associated with space exploration. These technologies will require testing and only a few airports in the United States have been designated as launching facilities by the Federal Aviation Administration Office of Commercial Space Transportation. Upon approval, Midland International Airport would be positioned competitively to attract aerospace activity and research.

Potential Land Use Types

Aerospace and related research activities are typically considered industrial uses. These uses, however, would have significant differences and needs than the general industrial activity that is occurring within the study area. At this point, the vast majority of industrial activity is related to the oil and gas industry. These types of industrial uses generally have low employee densities and contain outside storage for supplies and machinery.

Aerospace and research uses are much different in their nature. They will generally not require outside storage and have higher employee densities. They are typically located in a business-park setting with more of an emphasis on aesthetics. Due to the differences between the two types of industrial uses, it is not likely that the two will be located within the same areas.

Optimal Locations

The most opportunistic location for potential aerospace activity and other research-type facilities would be the southwestern side of the Midland International Airport. The area currently contains a mixture of industrial uses with vacant land available for new construction. The southwestern area of the airport currently has a well-established roadway network and is quickly accessible from Business 20 and Interstate 20 via SH 349. This area is also not within the airport clear zones. This is important to note because aerospace and other research type uses would likely have greater employee densities than general industrial uses with outside storage. They therefore should not be located within the immediate airport clear zones.

Summary

The primary environmental implications of activity occurring at the airport are related to the clear zones. It will be critically important to consider development decisions made within immediate clear zone areas in order to ensure continued FAA approval for airport operations. It is much more difficult to regulate land use decisions outside of the city limits and therefore annexation of strategic areas related to protecting airport clear zones should be considered.

Overall, the following are the primary considerations related to protecting airport operations:

- Keep areas within the immediate flight path clear of all development;
- Discourage all residential development within the immediate clear zone areas to ensure continued future FAA approval for aerospace activity and flight operations;
- If development is to occur, encourage industrial warehouse facilities within the clear zone due to lower employee densities;
- Consider annexing key areas within the clear zones to have more of a direct impact on development decisions and to mitigate uncontrolled county development within the clear zone;
- Consider purchasing land within the clear zones to keep strategic areas clear from development that may impact airport operations;
- Work with the Midland International Airport to create a strategy that would enable development to continue around the Los Canales area. A potential solution would be use of the southwest to northeast runway for aerospace operations mitigating the clear zone impacts on the Los Canales area.

Implementation Strategies

The SH 191 Corridor Study/Management Plan outlined an extensive list of economic development and financing strategies that should be considered by the cities of Midland and Odessa and by Ector and Midland Counties. Many of these recommendations are still relevant and applicable despite the changes occurring within the study area as outlined previously. The following are some of the key implementation strategies and actions that should continue to be utilized by the various entities that influence development and transportation decisions within the study area.

Local Economic Development Funding Tools

The following economic development tools can be utilized by the cities of Midland and Odessa and the Counties of Midland and Ector to enhance their economic development activities. Care should be used in selecting or using these tools to fully understand them and their potential costs.

Tax Increment Reinvestment Zones (TIRZs)

Tax Increment Reinvestment Zones or TIRZs, can be described as special districts wherein public improvements are funded with tax revenues resulting from increased property values. The property tax rate paid by property owners is the same as paid in other areas of a city, but the additional tax paid on the increased property value would be allotted to a special fund that would finance improvement projects within a TIRZ. Cities, counties and other taxing jurisdictions (except school districts) can all participate in a TIRZ; that is, a city can establish a TIRZ, but the county's and other jurisdictions' tax revenues are not automatically affected; they must agree to participate.

The first category of incentive could be termed "new" development incentives. These seek to capture the additional tax revenues created by new development and reinvest it within a district. The most common form is the Tax Increment Reinvestment Zone (TIRZ), also known as a Tax Increment Finance (TIF) District. Council essentially votes to create a TIRZ and appoints a board to manage it. Once the district is created, any additional tax values created by new development after the date of creation is called the "increment." The additional taxes (tax increment) created by the additional tax values can be used to pay for improvements within the district.

The major benefit of such a district is other taxing jurisdictions can partner with the city and add some or all of their "increment" to the pool of funds to leverage the public improvements within the district. While school districts are prohibited from legally participating in a TIRZ, county, college, and hospital districts and other taxing jurisdictions can potentially double the size of the TIRZ and contributions to the fund depending on tax rates and participation. Other benefits include the fact that the developer pays their taxes just as they would without a district but receive the public improvement benefits. Also, personal property and inventory taxes are not part of the district, and those additional tax revenues still go to the taxing jurisdictions. Finally, while the city may actually have to issue the debt, because TIRZ revenues are used to pay the debt, Revenue Bonds can be used rather than General Obligation Bonds.

The disadvantages are that only public improvements as defined in the statute can be paid for by the TIRZ. Also, once the TIRZ debt is paid off, the district is dissolved leaving the improvements to be maintained by the general fund of the city. The biggest disadvantage, however, is that TIRZs rely on large increases in taxable property values to create the revenues needed. Therefore, they are utilized mainly for either new developments or large scale redevelopment projects with demolition of "blighted" properties and subsequent large increases in property values. "Creative" TIRZs can take increased tax funds from one developing part of a city and fund improvements in another area within the TIRZ boundary.

It is recommended that Midland and Odessa investigate the feasibility of establishing TIRZs to assist in financing public improvements in specific geographic areas. Midland and Ector Counties and other taxing entities should be approached to participate, but regardless of whether these entities are involved, a TIRZ district or districts should still be investigated. The amount of additional tax revenue from improved property valuations from the city alone will likely be significant enough over the long-term to contribute to physical improvements that visibly enhance a geographic area designated as a TIRZ district.

Public or Business Improvement Districts (PIDs/BIDs)

A second category of development incentives are known as Public Improvement Districts (PIDs) or Business Improvement Districts (BIDs) which do not rely on increase in tax revenues but do rely on "assessments" of property owners to pay for installation and/or maintenance of public improvements within the district.

The city council, upon petition by the property owners, creates an "assessment district" and existing properties are "assessed" based on property values and benefit to the property. It is not a tax because the property owner's petition to be charged (assessed) an annual assessment fee to provide the revenues needed to pay for the public improvements within the district. An "assessment" lien is placed on individual properties and is superior to all but other tax liens. The majority of owners based on number and value of property owned have to agree to the improvement plan and the assessment scheme.

One benefit is that, unlike a TIRZ, increases in values are not needed to fund the district so it is an excellent mechanism for redevelopment projects. A second advantage is that a PID or BID can be created to construct and maintain improvements with no time limit, thereby alleviating the city of the burden. Again, because the debt is paid for by revenues from assessments backed by property liens, revenue bonds can be used to finance improvements. Finally, based on a feasibility analysis, benefits can be assessed at different rates to different classes of properties depending on use and distance or amount of benefit received. For example, retail uses could pay for a major portion of the improvements to the corridor, but adjacent neighborhoods and homes in the area could also pay a minor portion of the district improvements if they receive benefit.

A disadvantage of a PID/BID or other assessment districts is that, unlike TIRZ districts, the property owners pay additional "assessments" on top of their existing property taxes. A second disadvantage is that the majority of property owners must be convinced of the benefits and agree to the assessments and any property liens resulting from the assessments. Also, there are no other jurisdictions to partner with on a Public or Business Improvement District, although other jurisdictions, including school districts, could agree to be "assessed" to help pay for the improvements. Finally, only public improvements, maintenance or services can be paid for by the district, depending on the statute authorizing the type of district to be created.

There may be certain areas, where a combination of a TIRZ and an overlaying PID/BID district could be used. The TIRZ could be used to finance and construct the improvements and the PID or BID could be used to maintain them over time. This would keep the long term assessments to a reasonable amount but would enable other jurisdictions to partner on constructing the improvements. The area along SH 191 may be appropriate for such a dual mechanism. Any owners buying land in the district are subject to any assessment districts that are created.

Municipal Management Districts (MMDs)

A Municipal Management District is a special district that can be set up with some of the attributes of both a TIRZ and a PID. It can use a combination of existing and new taxes and also can use special assessments to construct public improvements within the district. It has a process of being set up either by the city or by special legislation.

Tax Abatements

Chapter 312 of the Tax Code, "Property Redevelopment and Tax Abatement Act 1987" provides that a city may join with other taxing jurisdictions to "abate" or reduce a portion of real property and business and personal tax on a new or expanding eligible business. Generally, school districts cannot participate after 2001, except that Chapter 313 of the Tax Code, "Texas Economic Development Act of 2001 allows school districts to participate in abatement agreements for certain "eligible manufacturing." The City must designate a "reinvestment" zone and negotiate a tax abatement agreement. Participating counties must negotiate their own agreement in the designated zone. The city has to establish guidelines and eligibility criteria to grant tax abatements, the adoption of which is good for two years. There is also a requirement for annual reporting to the State Comptroller. Generally, tax abatements are used to assist in the construction of new facilities or structures or in the expansion or modernization of existing facilities. They are most often used for Industrial Development, but some cities have used them for certain types of large retail projects

Chapter 380 Incentive Program

Chapter 380 grants and sales tax rebates are direct financial contributions to the developer or new business owner. While care needs to be used in this incentive mechanism, it is effective in attracting underutilized sectors of economic development. For example, new downtown, small retail establishments could receive a rebate of their sales taxes. This provides an incentive to locating in the area based on their performance. The more they sell, the more sales tax rebate they receive, which is a win/win for the City and the business.

State and Federal Programs

The following programs are state and/or federal programs offered for existing and new businesses. This list is representative of current programs, but is not all-inclusive.

Research & Development (R&D) Tax Credit

This program was enacted by the 76th Texas Legislature and involves state Franchise Tax Credit for research and development (R&D) expenditures. A qualified business is eligible to receive a credit from the State of Texas for an amount equal to four (4) percent of the business's incremental (as defined by the U.S. IRS) income. R&D expenditures and a maximum credit of twenty-five (25) percent of their franchise tax liability in the first year of the biennium, increasing to five (5) percent with a fifty (50) percent cap in the second year of the biennium and thereafter. These benefits apply statewide, with increased credits available for "state strategic investment areas" (as defined by the State), and include federally designated "urban enterprise communities."

Small Business Franchise Tax Exemption

This program was enacted by the 76th Texas Legislature (1999) and allows for an exemption from paying the State franchise tax for small businesses. In order to qualify, small businesses must have gross receipts of less than $150,000 annually.

Texas Leverage Fund

The Texas Leverage Fund (TLF) is an "economic development bank" offering an added source of financing to communities that have passed the Economic Development Sales Tax. The Texas Economic Development (TxED) Department may loan funds directly to a local Industrial Development Corporation (IDC) to finance eligible projects. Sales tax revenues pledged by the IDC need only be sufficient to cover projected annual debt service as specified in the TLF program guidelines. This allows cities to leverage their economic development sales tax and to pursue additional projects.

Bond Financing Options Summary

Bonds may be issued by non-profit development corporations or authorities pursuant to the Development Corporation Act of 1979 (the "Act"). The Act allows non-profit corporations to issue bonds on behalf of cities, counties, conservation or reclamation districts for eligible projects. The purpose of bond financing is to promote new and existing businesses, encourage employment in the state, and increase the tax base of the community where the project is located. The following types of bonds are available:

- Tax-Exempt Industrial Revenue Bonds for Manufacturing Projects - Bonds issued to finance land and depreciable property for manufacturing facilities.
- Exempt-Facility Bonds - Bonds issued to finance certain facilities such as airports, dock and wharf facilities, mass commuting facilities, high-speed inter-city rail facilities, or certain qualified hazardous waste facilities (including certain training and storage facilities).
- Taxable Industrial Revenue Bonds - These bonds typically have higher interest rates than tax exempt issues, these issues do not have restrictions on the use or amount of the issue.
- Sales Tax Bonds (Bonds issued pursuant to Sections 4A and 4B of the Development Corporation Act) - Available only to cities that have passed the local Sales and Use Tax for Economic Development. These can be taxable or tax-exempt bonds, depending on the type of project and business. Issues are primarily for manufacturing or industrial projects, but can also be issued for commercial, recreational, infrastructure, and other types of projects.

Texas Enterprise Program

The 78th Texas Legislature established the Texas Enterprise Zone Fund to provide financial resources to help strengthen the state's economy. The Governor, Lieutenant Governor, and the Speaker of the House must unanimously agree to support the use of the Texas Enterprise Fund for each specific project. Projects that are considered for Enterprise Fund support must demonstrate a project's worthiness, maximize the benefit to the State of Texas and realize a significant rate of return of the public dollars being used for economic development in Texas. Capital investment, job creation, wages generation, financial strength of the government and private sector financial support of a project will all be significant factors in approving the use of the Enterprise Fund. The purpose of the Texas Enterprise Zone program is to encourage job creation and capital investment in areas of economic distress. Specifically, any block group within the State of Texas that has a poverty rate of at least 20 percent, as determined by the U.S. Census Bureau during each decennial census is a state enterprise zone. The program provides communities with an economic development tool to offer state and local incentives and program priority to new or expanding business in these designated areas. Local incentives that may be offered to an expanding or locating business vary among enterprise zones. Examples of local incentives that may be offered include tax abatement, a refund of local sales and use taxes, waiver of permitting fees, tax increment financing, transfer of publicly owned buildings at below market cost, and low interest loans.

- State Sales and Use Tax Refunds - An enterprise project is eligible for a maximum of a $1.25 million ($250,000 per year over five years) refund for state sales and use taxes paid for building materials and machinery and equipment (including office equipment, computers, desks, etc.). The refund is based on the rate of $2,000/job. Receipts for purchases of building materials and machinery and equipment and payroll information are required to be retained as part of the audit process.
- Franchise Tax Reductions - Franchise tax reductions are based on either a fifty (50) percent reduction of apportioned taxable capital, or a five (5) percent reduction in an apportioned earned surplus, as calculated on each franchise tax report during the 5-year designation period. For net taxable capital, the tax rate is 0.25 percent, or $2.50 per $1,000 or taxable capital. The tax on earned surplus is 4.5 percent.

Skills Development Fund

This fund was created to financially assist Texas public communities and technical colleges in customized job training for their local businesses. The fund is administered by the Texas Workforce Commission. Grants are provided to help companies and labor unions form partnerships with local community colleges and technical schools to provide custom job training. Average training costs are typically $300 - $400 per trainee; however, the benefit may vary depending on the proposal.

Property Tax Rule 9.105

This is a refund of the state taxes (franchise taxes or sales taxes) paid by companies owning certain abated property. A company that meets the following three conditions may apply for a refund under this tax rule:

- The company has paid property taxes to a school district on property that is located in a reinvestment zone established under Texas law.
- The company is exempt in whole or in part from property tax imposed by a city or county under a tax abatement agreement established under Texas law.
- The company is not in a tax abatement agreement with a school district.

The refund is equal to the amount of property taxes that would have been paid had the company entered into a school district abatement agreement with terms identical to the city or county abatement agreement, not to exceed the net state sales and use taxes and state franchise taxes paid or collected and remitted during that calendar year. The refund amount may also be limited by a statewide appropriation per year for this refund program.

State Sales and Use Tax Exemptions

- Manufacturing Machinery & Equipment - Applies to leased or purchased machinery, equipment, replacement parts, and accessories that have a useful life of more than six months, and that are used or consumed in the manufacturing, processing, fabricating, or repairing of tangible personal property for ultimate sale, are exempt from state and local sales and use tax. Texas businesses are exempt from paying state sales and use tax on labor for constructing new facilities and the purchase of machinery exclusively used in processing, packing, or marketing agricultural products by the original producer at a location operated by the original producer.
- Natural Gas & Electricity - Texas companies are exempt from paying state sales and use tax on electricity and natural gas used in the manufacturing, processing, or fabricating tangible personal property. The company must complete a "predominant use study" that shows that at least 50 percent of the electricity or natural gas consumed by the business directly causes a physical change to a product.

Tax Credits

- Worker Opportunity Tax Credit (WOTC) - A federal tax credit given to companies that hire employees from certain target groups. The tax credit is used to reduce a company's federal tax payment in the current tax year, or it can be used retroactively for three years or carried forward for fifteen years. The WOTC provides a tax credit of up to 40 percent to employers who hire certified tax credit eligible employees. The maximum tax credit is $2,400.
- State of Texas Tax Refund - This tax refund program provides a state tax credit of up to 20 percent of $10,000 in wages paid during the first year. An employer may qualify for a state tax refund if the employer:

    - Pays certain State of Texas taxes (franchise, state sales and use, inheritance, etc.);
    - Pays wages during the first year of employment to an employee who is a Texas resident and has received certain benefits during the month of hire; and
    - Provides and pays for a part of the cost of qualifying major medical insurance for the employee.

Both the cities of Midland and Odessa are familiar with many of the economic development tools listed and have used a number of them in the past. However, based on this study, it would be helpful to use these incentives in the areas of focus.

Capital Improvement Program

A Capital Improvements Plan (CIP) is a multi-year flexible plan outlining the goals and objectives regarding public facilities for MOTOR, the cities, counties and TXDOT. This plan includes the development, modernization, or replacement of physical infrastructure facilities. For a project to be defined as a capital project it should generally exceed $50,000 in cost, be nonrecurring, provide at least 5 years of benefit and be an addition to the Corridor's assets. Examples of capital improvement projects are roads, utilities, drainage structures, parks and other municipal facilities.

As a part of the SH 191 Corridor Study/Management Plan, a listing of capital improvement needs was developed and a capital improvement ranking system was utilized to prioritize eligible projects. The listing was provided at the final public forum and members of the audience provided final ranking based upon a dot-voting exercise. The following is the list of capital improvement projects listed in order of priority.

Table 7: Capital Improvement Program Listing and Priorities

What	Cost	Short Term	Long Term	On Going	Who	How
# 1: Develop Interchange @ FM 1788 & SH 191 and Frontage Road Interchange.	$ 40 M		■		TxDOT	State & Federal Funding
# 2: Develop Backage Road South of SH 191 from FM 1788 to New Road "8".	$ 3 M		■		City of Midland, University of Texas & Private Developers	State & Local Funds & Private Developers
# 3: Develop Interchange at Yukon Road and SH 191.	$ 22 M	■			TxDOT & City Of Odessa	State & Local Funding
# 4: Develop Backage Road South of SH 191 from Faudree Road to Yukon.	$ 2 M	■		■	City of Odessa, Private Developer & Midland County	City of Odessa & Private Developers
# 5: Develop Interchange at New Road "4" & SH 191.	$ 22 M		■		TxDOT, Cities of Odessa & Midland	State & Local Funding
# 6: Develop Water & Sewer Service from Faudree Road to Yukon Road.	$ 15 M	■			City of Odessa	City of Odessa & Private Developers
# 7: Develop Backage Road North of SH 191 from Yukon Road to New Road "4".	$ 2.5 M	■			City of Odessa, Midland County & Private Developer	Cities of Odessa & Midland & Private Developer
# 8: Develop Backage Road North of SH 191 from FM 1788 to New Road "8".	$ 3 M	■		■	City of Midland & Private Developers	City of Midland & Private Developers
# 9: Develop Water & Sewer Service from New Road "4" to FM 1788.	$ 6 M		■		Cities of Midland and Odessa; Private Developer	Cities of Odessa & Midland & Private Developer

What	Cost	Short Term	Long Term	On Going	Who	How
# 10: Develop Backage Road North of SH 191 from Faudree Road to Yukon Road.	$ 2 M	■			City of Odessa & Private Developer	City of Odessa & Private Developers
# 11: Develop Backage Road South of SH 191 from Yukon Road to FM 1788.	$ 3 M	■		■	City of Odessa, Private Developer & Midland County	City of Odessa, Midland County & Private Developer
# 12: Develop Backage Road south of SH 191 from New Road "8" to New Road "9".	$ 3 M		■		City of Midland & Private Developer	City of Midland & Private Developer
# 13: Signalize intersections of SH 191 Frontage Roads & Faudree Road, Yukon Road, New Road "4", New Road "8", New Road "9" and SH 158.	$ 1 M	■	■	■	City of Odessa, City of Midland & Private Developer	Cities of Odessa & Midland, Private Developer
# 14: Develop Water & Sewer Service from FM 1788 to New Road" 4".	$ 4 M		■		City of Midland	City of Midland & Private Developers
# 15: Develop Interchange at SH 191 and New Road "9".	$ 22 M		■		City of Midland & TxDOT	State & Local Funds
# 16: Develop Backage Road South of SH 191 from SH 158 to New Road "9".	$ 2 M			■	City of Midland & Private Developers	City of Midland & Private Developers
# 17: Develop Bike, Pedestrian, Equestrian Trails, and Park Linkages of Playa/Detention Basins.	$ 6.5 M	■	■	■	City of Odessa, City of Midland & Private Developer	Cities of Odessa & Midland, TxDOT, Texas Parks & Wildlife, Private Developer
# 18: Develop Water & Sewer Services from SH 191 to FM 1788.	$ 12 M	■			City of Midland	City of Midland & Midland Development Corporation
# 19: Develop Water Service from Yukon Road to New Road "4."	$ 2 M		■		City of Odessa	City of Odessa & Private Developers
# 20: Develop Major Detention Basin at Playa Lakes South of SH 191 West of FM 1788.	$ 4 M	■	■	■	City of Odessa & Private Developer	City of Odessa & Private Developer
# 21: Develop Major Detention Basin at Playa Lake South of SH 191 & East of FM 1788.	$ 4 M	■	■	■	City of Midland & Private Developer	City of Midland & Private Developer
# 22: Develop 3 Major Transit Centers and 5 Transit Stops on SH 191.	$ 5.8 M		■		Cities of Odessa and Midland, TxDOT, E-Z Rider	Cities of Odessa & Midland, TxDOT, E-Z Rider, Federal Transportation Grants

Impacts on SH 191 Implementation Strategies

The SH 191 corridor is one of the focal points for development within the Midland-Odessa area. Development is rapidly occurring and changing the dynamics of the corridor. The 2012 SH 191 Corridor Study/Management Plan outlined various strategies and actions to guide land use and transportation decisions within the area. The Cities of Midland and Odessa, however, have the ability to directly impact development within the study area through their comprehensive plans and development regulations.

Despite rapid growth within the study area, and recent announcements pertaining to future aerospace activity within the area, the recommendations developed as a part of the SH 191 Corridor Study/Management Plan are still applicable. The recommendations developed will continue to guide land use and transportation decisions within the study area. The most significant addition to the original recommendation listing pertains to land use strategies within the airport clear zone to protect airport operations.

Implementation Actions

What	Short Term	Long Term	On Going	Who	How
Maintain 40 acre spacing in 1,800 foot corridor and keep pump jacks 500 feet back from frontage road, 100 feet from backage road.	■		■	Cities of Midland and Odessa, Mineral Interests, Operators	Negotiate with operators, mineral interests
Annex 1,800 feet on both sides of SH 191 along entire 14 mile length of corridor.	■			Cities of Midland and Odessa	Initiate annexation especially prior to development
Strategically incentivize priority areas, especially the SH 191 village centers and the UTPB "Los Canales" center.	■	■		Cities of Midland and Odessa	Make Capital Improvements where development is most desired.
Develop standards for and provide generous landscaping (desert tolerant) and trees behind curbs, around buildings, and along drainage ways and open space/trails.	■		■	Midland, Odessa, TXDOT, Counties of Midland, Ector, property owners	Develop common tree , landscaping requirements and standards for various roads, centers
At time of platting, require all properties along SH 191 to contain allowance for cross access easements and/or connection to shared driveways.	■	■	■	Cities of Midland and Odessa, Counties of Ector and Midland	Through standard development processes
Create Public Improvement Districts (PID) as needed to pay for maintenance of a higher level of public amenities including landscaping, open space.	■	■		Cities of Odessa and Midland, Midland, Ector County	Petition by property owners, Approved by City Councils

What	Short Term	Long Term	On Going	Who	How
Implement recommendations of the proposed Sub-area Thoroughfare Plan to provide accessibility to adjacent SH 191 corridor properties through backage roads, intersection enhancements, and access controlled frontage roads.	■		■	Midland and Odessa, TXDOT, Counties of Ector and Midland	Adoption of Thoroughfare Plan and roadway standards
Protect backage roads from oil and development encroachment by immediately acquiring right of way for entire 14 mile length of corridor, especially at nodes or developing areas.	■		■	Midland, Odessa, TXDOT, Counties of Midland, Ector,	Negotiate with property owners, set aside funds, use eminent domain
Sub-area Thoroughfare Plan - Adopt.	■			Midland/Odessa, TXDOT, MOTOR, Midland & Ector Counties	Amend thoroughfare plans, use revised cross sections in SH 191 Corridor
Implement "transit ready corridor backage road" for transit service opportunity within SH 191 corridor. Additional ROW within center of roadway allows for short and long-term transit between mixed-use nodes.	■	■		Midland and Odessa, Transit Agencies, MPO	Include corridor on Transit System Plans and Metropolitan Transportation Plan
Backage Roads for SH 191, SH 349 and FM 1788 - Protect.	■		■	Midland/Odessa, TXDOT, MOTOR, Midland & Ector Counties	Plan and obtain ROW by negotiating with property owners
Develop common platting ordinance for both counties and cities requiring and coordinating similar standards for similar areas.	■			Midland and Odessa, Midland and Ector Counties	Fund and develop a subdivision ordinance by all four entities
Develop Backage Road South of SH 191 from Faudree Road to Yukon Road.	■		■	City of Odessa, Private Developer & Midland County	City of Odessa & Private Developers
Annex or use developer agreements to control frontages of SH 349/FM 1788.	■			City of Midland	Initiate annexation process
Develop Interchange at Yukon Road and SH 191.	■			TxDOT & City Of Odessa	State & Local Funding
In annexed areas, place requirements that tank batteries and injection wells must be at least 1,800 feet back from frontage road.	■			Cities of Midland and Odessa	Adopt Overlay Zoning District

What	Short Term	Long Term	On Going	Who	How
Identify and implement minimum driveway spacing and shared drives to minimize SH 191 frontage road conflicts with existing and future developments. Adopt 400'-500' spacing between driveways.	■			Cities of Midland and Odessa, Counties of Ector and Midland, MPO and TxDOT	Implement through corridor overlay district
In annexed areas, require collection lines to ultimately be placed underground within 1,800 feet of the SH 191 frontage road.	■			Cities of Midland and Odessa	Adopt Overlay Zoning District
Provide/require connecting roads from frontage to backage road on 1,200 to 1,500 spacing.	■	■	■	Cities of Midland and Odessa, MPO and TxDOT	At the time of development and/or through the platting process
Create Tax Increment Reinvestment Zones (TIRZ) in corridor to fund public infrastructure, including a higher level of public amenities including landscaping, open space, hike/bike trails.	■	■		Cities of Midland and Odessa	Approved by City Councils and Commissioners Courts
Develop Backage Road North of SH 191 from SH 349 to New Road "8".	■		■	City of Midland & Private Developers	City of Midland & Private Developers
Require outside storage to be behind main buildings and screened from major roadways. Wood, metal, chain link fencing to be avoided unless screened with solid vegetation.	■		■	Cities of Midland and Odessa	Adopt Overlay Zoning District
Develop a detailed system wide bike plan, including connections with SH 191 corridor/Mixed Use Centers (includes north/south facilities across SH 191).	■			Midland, Odessa, TXDOT	Work with the bicycle interests and other experts to develop a bike system SH 191 Sub-area Plan.
Develop Backage Road North of SH 191 from Yukon Road to New Road "4".	■			City of Odessa, Midland County & Private Developer	Cities of Odessa & Midland & Private Developer
Develop water & sewer service from Faudree Road to Yukon Road.	■			City of Odessa	City of Odessa & Private Developers
Utilize real property tax abatements in selected areas outside TIRZ to stimulate development, especially in industrial areas for diversified, targeted industries.	■	■	■	Cities of Midland and Odessa	Approved by City Councils and Commissioners Courts
Control/remove illegal off-ramps and two-way access roads (off frontage on road shoulders) and unauthorized driveways from SH 191.	■		■	TxDOT, Cities of Midland and Odessa	Enforcement of TxDOT standards

What	Short Term	Long Term	On Going	Who	How
Designate multi-modal transit hubs at key location areas within the corridor, at UT Permian Basin at SH338, Scharbauer Complex at SH250, at "Los Canales Village Center" at SH 349, key arterial crossings.				Midland and Odessa, Transit Agencies, MPO	Transit Systems Plan and Metropolitan Transportation Plan
Develop signalized intersections of SH 191 Frontage Roads & Faudree Road, Yukon Road, New Road "4", New Road "8", New Road "9" and SH 158.				City of Odessa, City of Midland & Private Developer	Cities of Odessa & Midland, Private Developer
Develop backage road south of SH 191 from Yukon Road to F.M. 1788.				City of Odessa, Private Developer & Midland County	City of Odessa, Midland County & Private Developer
Develop backage road north of SH 191 from Faudree Road to Yukon Road.				City of Odessa & Private Developer	City of Odessa & Private Developers
Develop standards for "Class A" industrial parks especially highly visible areas along SH 191 corridor and backage road.				Cities of Midland, Odessa	Create Overlays for Industrial Zoning District
Metropolitan Transportation Plan (MTP) - Revise.				MOTOR	Incorporate adopted thoroughfare plan revisions into 2035 MTP
Require all development in the Sub-area to have paved streets and fire protection.				Midland and Odessa, Midland and Ector Counties	Amend ordinances to require
Develop bike, pedestrian, equestrian trails, park linkages of Playa/Detention Basins.				City of Odessa, City of Midland & Private Developer	Cities of Odessa & Midland, TxDOT, Texas Parks & Wildlife, Private Developer
Encourage buildings to be close to streets with extra wide sidewalks with parking in block centers in the village centers to give a pedestrian oriented "urban" feel.				Cities of Midland and Odessa	Adopt Overlay Zoning District with Form Based Provisions
Preserve playas as open space and drainage system, and use the storm drainage system as an amenity to development, especially within the village centers.				Midland, Odessa, TXDOT, Counties of Midland, Ector	Revise subdivision ordinance and drainage manuals
Require all roads within 1,800 feet of frontage road/development nodes to be paved with fire protection and sidewalks close to buildings to encourage pedestrian connectivity.				Cities of Midland and Odessa	Revise subdivision ordinance

What	Short Term	Long Term	On Going	Who	How
CR 1275 north of SH 191 - Construct.	■			Midland, TXDOT, MOTOR, Midland County	Plan, realign and obtain ROW around the mining operation,
Develop corridor-wide access management standards detailing; intersection spacing, driveway locations and throat length, and median type/opening location.	■			Midland, Odessa, TXDOT, Counties of Midland, Ector	Implement through corridor overlay district
Identify short and long-term transit options for "transit ready corridor" and system phasing/implementation; develop phasing of transit corridor improvements.	■			Midland and Odessa, Transit Agencies,	Transit programming and CIP
Los Canales Village Center (UTPB) - Road Support System (Roads "C", "P", "O" and related Backage Roads).	■			Midland, TXDOT, MOTOR, Midland County	Plan and obtain ROW, work with property owners to construct
Metal building facades visible from freeway, backage road and other ROW shall be prohibited.	■		■	Cities of Midland and Odessa	Adopt Overlay Zoning District
Annex or use developer agreement to require urban Sub-area development, including industrial properties, to meet standards utilized in rest of Cities.	■		■	Midland and Odessa, Midland and Ector Counties	Study and annex prior to development. Monitor land sales
Develop implementation/phasing program supporting development of backage road system and improvements to frontage road intersections. Consideration for prioritization include; operational LOS, development of activity centers and associated roadway improvements, coordination with funding opportunities and/or public-private partnership.	■			Cities of Midland and Odessa, Counties of Ector and Midland, MPO and TxDOT	Corridor CIP programming
Implement lower intensity "rural" type development in northern Sub-area.	■		■	Midland and Odessa, Midland and Ector Counties	Amend zoning and platting to provide common rural standards
Develop Major Detention Basin at Playa Lake South of SH 191 & East of SH 349.	■	■	■	City of Midland & Private Developer	City of Midland & Private Developer
Develop Major Detention Basin at Playa Lakes South of SH 191 West of SH 349.	■	■	■	City of Odessa & Private Developer	City of Odessa & Private Developer

What	Short Term	Long Term	On Going	Who	How
Require, where appropriate, upstream deceleration lanes on SH 191 for developments with high volume driveways. Utilize TxDOT standards for threshold triggers.	■	■	■	Cities of Midland and Odessa, Counties of Ector and Midland, and TxDOT	At the time of development by Cities and by TxDOT Standards
Refine industrial master plan around airport, including La Entrada gateway on SH 349, possible multi-modal center, airport office/flex space/conferencing.	■		■	Cities of Midland and Odessa	Fund industrial master plans, studies
Investigate funding mechanisms for transit system development and implementation including public-private partnerships.	■		■	Midland and Odessa, Transit Agencies, MPO	Utilize various funding mechanisms and strategies
Expand use of Chapter 380 Agreements, particularly for incentivizing retail development.	■	■		Cities of Midland and Odessa	Approved by City Councils
Identify general station area design features, amenities and requirements/needs.	■	■		Midland and Odessa, Transit Agencies,	Station area planning
Establish rules to require entryway and gateway features, regulate on-site and off-site signage (number, size, location, height).	■			Cities of Midland and Odessa	Adopt Overlay Zoning District
On properties disputing annexation within 1,800 feet, negotiate developer agreement with same requirements as annexed areas.	■			Cities of Midland and Odessa	If disputed, negotiate developer agreement
Identify long-term transit connection from “Los Canales Village Center” with Midland International Airport, other regional significant connection points.	■			Midland and Odessa, Transit Agencies, MPO	Transit Systems Plan and Metropolitan Transportation Plan
Coordinate and implement trail linkages with transit station programming.	■			Midland and Odessa, Transit Agencies,	Bike/Pedestrian System integration and programming
Develop water & sewer services from SH 191 to SH 349	■			City of Midland	City of Midland & Midland Development Corporation

What	Short Term	Long Term	On Going	Who	How
Develop "pedestrian oriented" village centers/nodes at major interchanges and backage roads as shown, especially around UTPB "Los Canales" Center.				Cities of Midland and Odessa, Property Owners	Work with property owners to develop more detailed plans, concepts, etc.
Develop Interchange at SH 349 & SH 191 and Frontage Road Interchange.				TxDOT	State & Federal Funding
Road 4 - a north-south arterial one mile west of and paralleling SH 349.				Midland/Odessa, TXDOT, MOTOR, Midland & Ector Counties	Plan and obtain ROW, work with property owners to construct
Yukon, north/south of SH 191, and related grade separated interchange - Construct.				Odessa, TXDOT, MOTOR, Midland & Ector Counties	Plan and obtain ROW for entire road, design/obtain financing for interchange
Develop Backage Road South of SH 191 from SH 349 to New Road "8".				City of Midland, University of Texas & Private Developers	State & Local Funds & Private Developers
Connect the system to the greater region with hike/bike/equestrian trails to encourage recreation and enhance value creation. (also see Multi-Modal).				Midland, Odessa, TXDOT, Counties of Midland, Ector, owners	Develop hike/bike/equestrian trail plan, amend subdivision ordinance, design standards to require
Develop Interchange at New Road "4" & SH 191.				TxDOT, Cities of Odessa & Midland	State & Local Funding
SH 191/SH 349/FM 1788 Interchange - Construct.				TXDOT, MOTOR	Plan, design and construct the 3 levels
Investigate and fund a study for the establishment an Intermodal Facility especially to the west of SH 349.				Cities of Midland and Odessa, State of Texas, U.S.	Approved by Councils, State and Railroads
Require a mix of uses including different types of residential, office, retail and flex space, especially at the nodes with density/intensity supportive of transit stops.				Cities of Midland and Odessa	Adopt Overlay Zoning District with Form Based Provisions

What	Short Term	Long Term	On Going	Who	How
Develop water and sewer service from New Road "4" to SH 349.				City of Midland , City of Odessa & Private Developer	Cities of Odessa & Midland & Private Developer
Coordinate equestrian trail connectivity and system phasing with other bike/pedestrian linkages.				Midland and Odessa	Equestrian trail programming and CIP
Develop Backage Road south of SH 191 from New Road "8" to New Road "9".				City of Midland & Private Developer	City of Midland & Private Developer
Develop water & sewer service from SH 349 to New Road" 4".				City of Midland	City of Midland & Private Developers
Develop Interchange at SH 191 and New Road "9".				City of Midland & TxDOT	State & Local Funds
Identify locations for "landmark" buildings, encourage design and construction, especially in the village centers, visible from SH 191 and/or the backage roads.				Midland, Odessa, Counties of Midland, Ector, owners	Work with property owners to "incentivize" qualified development
Provide key open spaces/plazas associated with retail, office, residential centers.				Midland, Odessa, Counties of Midland, Ector, owners	Work with property owners to "incentivize" qualified development
Utilize state and/or federal incentives when appropriate to incentivize development. Research and Development Tax Credit, Texas Enterprise Fund, etc.				Cities and Counties	Approved by Councils, State and U.S.
Require main buildings to be closer to roadway, with maximum setback of 100 feet with no more than one parking bay with landscaping. Additional parking behind buildings in center of block.				Cities of Midland and Odessa	Adopt Overlay Zoning District
SH 349/FM 1788 Interchange, Realignment of CR 60, Briarwood, Wadley (Road E).				Midland, TXDOT, MOTOR, Midland County	Plan, design and construct the grade separated interchange
Develop water service from Yukon Road to New Road "4".				City of Odessa	City of Odessa & Private Developers
Road 4 interchange with SH 191 – Construct.				TXDOT, MOTOR	Plan, design and construct the grade separated interchange

What	Short Term	Long Term	On Going	Who	How
Develop 3 major transit centers and 5 transit stops on SH 191.				City of Odessa, City of Midland, TxDOT, E-Z Rider	Cities of Odessa & Midland, TxDOT, E-Z Rider, Federal Transportation Grants
Utilize street trees to shade sidewalks and paving to make walking/biking more comfortable.				Midland, Odessa, TXDOT, Counties of Midland, Ector, property owners	Develop common tree requirements and standards for various roads, centers
Continue economic development programs in place to incentivize industrial and high employment companies.				Midland DC	Utilize existing policies
Develop Backage Road South of SH 191 from SH 158 to New Road "9".				City of Midland & Private Developers	City of Midland & Private Developers
Maintain adequate operational level-of-service at key interchange/intersections along SH 191 frontage roads. Example: EB to WB U-turn at Loop 250, signalization at Faudree Rd. etc.				TxDOT; Coordination with Cities	Example: Lane additions, signal improvements, Texas U-Turn, etc.
Use exemptions to 3-year Municipal Annexation Plan requirement to expedite annexations.				Cities of Midland and Odessa	Use voluntary consent or annex fewer than 100 parcels with homes
Leave vacant property not in process of developing outside city but negotiate agreements so upon parcel sales or development, annexation becomes voluntary.				Cities of Midland and Odessa	Negotiate developer agreements with large property owners
Continue the existing development patterns on east and west sides of sub-area.				Midland and Odessa, Midland and Ector Counties	Amend and follow comprehensive plans
Enhance benefits of urban type development being in City.				Cities of Midland and Odessa	Do not provide water, streets, fire, police protection, etc. outside city

Summary

The following items are a summary of the minor changes that have occurred between the SH 191 Corridor Study/Management Plan in 2012 and the Midessa Land Use Transportation Study conducted in 2013. These include both changes and continued priorities as indicated by stakeholders during the involvement process:

- Continue implementing the backage road system along SH 191. The backage road system is critical to foster desired development along the corridor by promoting efficient circulation patterns;
- Continue to work towards implementing capital improvement projects identified as part of the SH 191 Corridor Study/Management Plan;
- Utilize short, medium and long-range land use strategies for oil derrick setbacks along SH 191 in order to utilize land adjacent to the roadway for development and protect the visual integrity of the corridor;
- Once FAA feedback is received on the submittal for commercial space operations at Midland International Airport, and the exact clear zones are defined, critical areas should be protected from development that may negatively impact air and space operations;
- Industrial development, due to its low employee density, should be the preferred development type within the airport clear zones if development is to occur;
- Residential development should not be permitted within immediate clear zone areas due to the negative impact such development on airport operations;
- Annexation of key areas within the airport clear zones should be encouraged;
- A strategy should be explored to enable airport operations and development within Los Canales to both occur;
- Continue to
- Professional office development on the eastern side of SH 191 at Deauville Boulevard utilizing the Chevron Office Campus as a catalyst for the creation of an employment center;
- Continue the development of Tradewinds Boulevard as a retail, office and entertainment district. The area will also be supported by the employment within the office district at Deauville Boulevard;
- Continue to develop the Los Canales area as a more urban node of development utilizing the Wagner Noël Performing Arts Center and the future UTPB Engineering School and catalysts for fostering residential, retail, office and entertainment within the area;
- Continue to consider long-range bicycle facilities as additional east-west roadways are constructed in order to provide an alternative to SH 191 frontage roads;
- Preserve the western side of the study area, eastern Odessa, for additional residential and retail uses due to the lack of existing drilling facilities;
- Promote quality development along the corridor to extend what is currently occurring in eastern Odessa and western Midland.

ORDINANCE NO._____

AN ORDINANCE AMENDING TITLE XI, "PLANNING AND DEVELOPMENT", OF THE CITY CODE OF MIDLAND, TEXAS, SO AS TO DELETE CHAPTER 11 AND REPLACE SAID CHAPTER WITH A NEW CHAPTER 11, "AIRPORT HEIGHT HAZARD AND COMPATIBLE LAND USE ZONING", IN ORDER TO PROVIDE FOR THE PUBLIC HEALTH, PUBLIC SAFETY AND GENERAL WELFARE BY PROHIBITING AIRPORT HAZARDS WITHIN THE VICINITY OF MIDLAND INTERNATIONAL AIRPORT AND MIDLAND AIRPARK; CONTAINING A CUMULATIVE CLAUSE; CONTAINING A SAVINGS AND SEVERABILITY CLAUSE; PROVIDING FOR A MAXIMUM PENALTY OR FINE OF TWO THOUSAND DOLLARS ($2000.00); AND ORDERING PUBLICATION

WHEREAS, the City Council of the City of Midland, Texas finds that:

The economic vitality of the City of Midland and the surrounding Permian Basin region depends on the safe and financially sound operation of the Midland International Airport and Midland Airpark;

The City of Midland has invested considerable public resources in the Midland International Airport and Midland Airpark, including the pursuit of a license from the Federal Aviation Administration to operate Midland International Airport as a launch site for reusable launch vehicles;

The economic vitality of the City of Midland and the surrounding Permian Basin region will benefit greatly from the City securing and retaining a permit to operate a launch site at the Midland International Airport;

In order to protect the public investment in the Airport and Airpark, the City of Midland desires to protect the Airport and Airpark from hazards and incompatible land uses that could endanger either flights in the air or people on the ground;

An airport hazard endangers the lives and property of users of the airport and of occupants of land in the vicinity of the airport;

An airport hazard that is an obstruction reduces the size of the area available for the landing, taking off, and maneuvering of aircraft, tending to destroy or impair the utility of the airport and the public investment in the airport;

The creation of an airport hazard is a public nuisance and an injury to the community served by the airport affected by the hazard;

The creation of an airport hazard should be prevented, to the extent legally possible, by the exercise of the police power without compensation;

The prevention of the creation of an airport hazard and the elimination, the removal, the alteration, the mitigation, or the marking and lighting of an airport hazard are public purposes for which a political subdivision may raise and spend public funds and acquire land or interest in land;

Land uses adjacent to, or near, an airport that endanger the health, safety, or welfare of the owners, occupants, or users of the land because of the risk of personal injury or property damage created by the operations of the airport or because of the levels of noise or vibrations created by the operations of the airport are incompatible with operation of the airport and tend to destroy or impair the utility of the public investment in the airport;

Land uses that are incompatible with the operation of an airport should be prevented, to the extent legally possible, by the exercise of the police power;

It is in the public interest to adopt uniform hazard and compatible land use zoning regulations for the Midland International Airport and the Midland Airpark; and

WHEREAS, federal law, federal policy, and Federal Aviation Administration regulations require that a launch site for reusable launch vehicles must be operated in a manner that is safe for the public on the ground and Federal Aviation Administration regulations specify the maximum acceptable risk to the collective members of the public exposed to hazards from operations; and

WHEREAS, federal law, federal policy, Federal Aviation Administration regulations, and the federal grant assurances require that airport owners, such as the City of Midland, take appropriate action, including the adoption of zoning laws, to restrict the use of land adjacent to or in the vicinity of an airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft; and

WHEREAS, Texas Local Government Code Title 7, Chapter 241 authorizes the City of Midland to implement by ordinance or resolution any federal law or federal rules controlling the use of land located adjacent to, or in the immediate vicinity of, an airport; and

WHEREAS, Texas Local Government Code Title 7, Chapter 241 authorizes the City of Midland to impose zoning restrictions within a defined area of land around an airport but outside the boundaries of the City of Midland; and

WHEREAS, the City of Midland adopted airport height hazard and land use zoning regulations by ordinance in 2007, and now re-adopts and amends those regulations to address the expansion of uses at Midland International Airport to include the launch and landing of reusable launch vehicles; and

WHEREAS, the City Council finds that the City of Midland benefits from the use of the Midland International Airport and Midland Airpark; and

WHEREAS, the City of Midland permits the Midland International Airport and Midland Airpark to be used by the public to an extent that fulfills an essential community purpose;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MIDLAND, TEXAS:

SECTION ONE. That the findings and recitals contained in the preamble of this Ordinance are hereby adopted and made a part of this Ordinance.

SECTION TWO. That the Midland Municipal Code, Title XI, Chapter 11 is hereby deleted in its entirety and shall be replaced by a new Title XI, Chapter 11, "Airport Height Hazard and Compatible Land Use Zoning," which shall read as follows:

CHAPTER 11 AIRPORT HEIGHT HAZARD AND COMPATIBLE LAND USE ZONING

11-11-1. Citation

This Chapter shall be known and may be cited as the Airport Height Hazard and Land Use Zoning Regulations for Midland International Airport and Midland Airpark of the City of Midland Municipal Code.

11-11-2. Purpose

To ensure compliance with federal law and regulations governing public safety and compatible land uses around commercial airports and around authorized launch sites for reusable launch vehicles; to regulate and restrict the height of Structures and objects of natural growth; and otherwise to regulate the use of property in the vicinity of the Midland International Airport or Midland Airpark by creating appropriate zones and establishing the boundaries thereof; to protect public safety by restricting incompatible land uses in the vicinity of Midland International Airport or Midland Airpark by creating appropriate zones and establishing the boundaries thereof; to provide for restrictions on use and development of property within such zones and the enforcement of such restrictions; to define certain terms used herein; to refer to the Midland International Airport Hazard Zoning Map, the Midland International Airport Compatible Land Use Zoning Map, the Midland Airpark Hazard Zoning Map, and the Midland Airpark Compatible Land Use Zoning Map, all dated June 2014, and incorporated in and made a part of this Chapter; to provide for a board of adjustment; and to impose penalties.

11-11-3 Authority

This Chapter is adopted pursuant to the authority conferred by the Airport Zoning Act, as codified in Texas Local Government Code, §§241.001 et seq. The City of Midland operates the Midland International Airport and Midland Airpark for public use such that the Airport and Airpark each fulfills an essential community purpose.

11-11-4. Definitions

As used in this Chapter, unless the context otherwise requires, capitalized terms shall have the following meaning:

A. Administrative Agency: The appropriate person or office of a political subdivision which is responsible for the administration and enforcement of the regulations prescribed herein. The Administrative Agency is set forth in Section 11-11-5 of this Chapter.

B. Aircraft: Any device that is used or intended to be used for flight in the air, so long as such device is permitted to operate at an airport certificated by the Federal Aviation Administration under 14 Code of Federal Regulations Part 139 or at a site licensed by the Federal Aviation Administration to operate as a launch site under 14 Code of Federal Regulations Part 420.

C. Airport: The Midland International Airport, Midland, Texas or Midland Airpark, Midland, Texas; including the ultimate development of such facilities, and all lands, buildings and other improvements owned, controlled, leased, or operated and maintained by the City of Midland appurtenant thereto.

D. Airport Elevation: The established elevation of the highest point on the runway, either existing or planned, at the Airport measured in feet above mean sea level (MSL). The Airport Elevation of the Midland International Airport is 2,872 feet above MSL and the Airport Elevation of the Midland Airpark is 2,804 feet above MSL.

E. Airport Hazard: Any structure or object of natural growth that obstructs the air space required for the taking off, landing, and flight of Aircraft or that interferes with visual, radar, radio, or other systems for tracking, acquiring data relating to, monitoring, or controlling Aircraft.

F. Airport Zoning Commission: The City of Midland Planning and Zoning Commission.

G. Approach Surface: A surface longitudinally centered on the extended runway centerline, extending outward and upward from each end of the primary surface and at the same slope as the approach zone height limitation slope set forth in Section 11-11-7 of this Chapter. In plan, the perimeter of the approach surface coincides with the perimeter of the approach zone.

H. Approach, Conical, Horizontal, and Transitional Zones: The zones set forth in Section 11-11-6 of this Chapter.

I. Board of Adjustment: A board so designated by this Chapter as provided in the Texas Airport Zoning Act, codified at Texas Local Government Code §241.032. Provisions for the Board of Adjustment are set forth in Section 11-11-12 of this Chapter.

J. Compatible Land Use: Any use of land adjacent to or in the immediate vicinity of the Airport that does not endanger the health, safety, or welfare of the owners, occupants, or users of the land because of levels of noise or vibrations or the risk of personal injury or property damage created by the operations of the Airport, including the taking off and landing of Aircraft.

K. Conical Surface: A surface extending outward and upward from the periphery of the horizontal surface at a slope of twenty (20) feet horizontally for each one (1) foot vertically for a horizontal distance of four thousand (4,000) feet.

L. Controlled Compatible Land Use Area: An area of land located outside the Airport boundaries and within a rectangle bounded by lines located no farther than 1½ statute miles from the centerline of an instrument or Primary Runway and lines located no farther than 5 statute miles from each end of the paved surface of an instrument or Primary Runway.

M. DNL (Yearly Day-Night Average Sound Level): The 24-hour average sound level, in decibels, for the period from midnight to midnight obtained after the addition of 10 decibels for the periods between midnight and 7 AM and between 10 PM and midnight (local time) as averaged over a span of (one) 1 year. A mathematical definition of DNL may be found in Title 14 Code of Federal Regulations, Section 150.201.

N. Hazard to Air Navigation: An obstruction or use of land determined to have a substantial adverse effect on the safe and efficient utilization of navigable airspace.

O. Height: For the purpose of determining the height limits in all zones set forth in this Chapter and shown on the hazard zoning map, the datum shall be height above mean sea level (MSL) elevation as measured in feet.

P. Horizontal Surface: A horizontal plane one hundred fifty (150) feet above the established Airport Elevation.

Q. Instrument Runway: An existing or planned runway of at least three thousand two hundred (3200) feet in length for which there is an existing or planned instrument landing procedure published by the Federal Aviation Administration or a defense agency of the federal government.

R. Noise Level Reduction (NLR): The amount of reduction in noise for any given point as achieved through the incorporation of noise attenuation measures incorporated into the design and construction of buildings. These reductions may be incorporated during initial construction or as additional construction for existing buildings.

S. Nonconforming Use, Structure, or Tree: Any structure, tree, or use of land which is inconsistent with the provisions of this Chapter and which is existing as of the effective date of this Chapter. This definition is for purposes of this Chapter only. The definition of nonconforming use found at Section 11-1-11 of this Code does not apply to areas zoned under the authority of the Texas Zoning Airport Zoning Act, which are outside the territorial jurisdiction of the City of Midland.

T. Nonprecision Instrument Runway: Runway(s) having an instrument approach procedure utilizing air navigation facilities with only horizontal guidance or area type navigation equipment, for which nonprecision instrument approach procedures have been planned or approved.

U. Obstruction: Any structure, tree, or other object, including a mobile object, which exceeds a limiting height set forth in Section 11-11-7 of this Chapter or is an Airport Hazard.

V. Other than Utility Runway: A runway designed for and intended to be used by propeller driven aircraft of more than twelve thousand five hundred (12,500) pounds maximum gross weight and jet powered aircraft.

W. Person: An individual, firm, partnership, corporation, company, association, joint stock association, or body politic and includes a trustee, receiver, assignee, administrator, executor, guardian, or other representative.

X. Precision Instrument Runway: Runway(s) having an existing or planned instrument approach procedure utilizing an Instrument Landing System (ILS) or other air navigation facilities or equipment which provides both horizontal and vertical guidance. This also includes a runway for which a precision instrument approach procedure has been approved or planned.

Y. Primary Runway: An existing or paved runway of at least three thousand two hundred (3200) feet in length as shown on the official Airport Layout Plan for the Airport and on which a majority of the approaches to and departures from the Airport occur.

Z. Primary Surface: A surface longitudinally centered on a Runway. When the runway has a specially prepared hard surface, the Primary Surface extends two hundred (200) feet beyond each ultimate end of that runway. The width of the Primary Surface of a runway will be that width prescribed in the Federal Aviation Regulations (FAR) at Title 14, Code of Federal Regulations Part 77, for the most precise approach existing or planned for either end of that runway. The elevation of any point on the primary surface is the same as the nearest point on the existing or ultimate runway centerline.

The width of a Primary Surface for other than utility runway is one thousand (1,000) feet for Precision Instrument Runways and one thousand (1,000) feet for a Nonprecision Instrument Runway having a nonprecision instrument approach with visibility minimums as low as three-fourths (3/4) of a statute mile.

AA. Runway: A defined area on the Airport prepared for the landing and taking off of Aircraft along its length.

BB. Structure: An object, including a mobile object, constructed or installed by one or more persons including, but not limited to, buildings, towers, cranes, smokestacks, poles, earth formations, overhead transmission lines, and traverse ways. Traverse ways are considered to be the heights set forth in Title 14 Code of Federal Regulations, Part 77.23.

CC. Transitional Surfaces: Surfaces extending perpendicular to the runway centerline and the extended runway centerline outward from the edges of the Primary Surface and the Approach Surfaces at a slope of seven (7) feet horizontally for each one (1) foot vertically to where they intersect the horizontal surface. Transitional Surfaces for those portions of the precision Approach Surface which extend through and beyond the limits of the Conical Surface extend at a slope of seven (7) feet horizontally for each one (1) foot vertically for a distance of five thousand (5,000) feet measured horizontally from either edge of the Approach Surface and perpendicular to the extended runway centerline.

11-11-5. Administrative Agency

It shall be the duty of the office of Code Administration Division to administer and enforce the regulations prescribed herein. The Code Administration Division is hereby designated as the Administrative Agency of this Chapter.

11-11-6. Height Hazard Zones

In order to carry out the provisions of this Chapter, there are hereby created and established certain geographic zones which include all of the land lying beneath the Approach Surfaces, Conical Surface, Horizontal Surface, and Transitional Surfaces as they apply to the Airport. These surfaces are shown on the Midland International Airport Hazard Zoning Map and the Midland Airpark Hazard Zoning Map, each consisting of one (1) sheet, dated June 2014, which is hereby attached to this Chapter and made a part hereof. An area located in more than one of the following zones is considered to be only in the zone with the more restrictive Height limitation. The various zones are hereby established and defined as follows:

A. Approach Zones:

Midland International Airport

Runway 16R/34L and Runway 10/28 (Precision Instrument Runways) Approach zones are hereby established beneath the Approach Surfaces at each end of Runway 16R/34L and Runway 10/28 at Midland International Airport for precision instrument landings and takeoffs. The Approach Surface shall have an inner edge width of one thousand (1,000) feet, which coincides with the width of the Primary Surface, at a distance of two hundred (200) feet beyond each Runway end, widening thereafter uniformly to a width of sixteen thousand (16,000) feet at a horizontal distance of fifty thousand (50,000) feet beyond each end of the Primary Surface. The centerline of the Approach Surface is the continuation of the centerline of the Runway.

Runway 16L/34R (Nonprecision Instrument Runways visibility minimums as low as ¾ mile) Approach zones are hereby established beneath the Approach Surfaces

at each end of Runway 16L/34R at Midland International Airport for nonprecision instrument landings and takeoffs. The Approach Surface shall have an inner edge width of one thousand (1,000) feet, which coincides with the width of the Primary Surface, at a distance of two hundred (200) feet beyond each Runway end, widening thereafter uniformly to a width of four thousand (4,000) feet at a horizontal distance of ten thousand (10,000) feet beyond each end of the Primary Surface. The centerline of the Approach Surface is the continuation of the centerline of the Runway.

Runway 4/22 (Nonprecision Instrument Runways visibility minimums greater than ¾ mile) Approach Zones are hereby established beneath the Approach Surfaces at each end of Runway 4/22 at Midland International Airport for nonprecision instrument landings and takeoffs. The Approach Surface shall have an inner edge width of five hundred (500) feet, which coincides with the width of the Primary Surface, at a distance of two hundred (200) feet beyond each Runway end, widening thereafter uniformly to a width of three thousand five hundred (3,500) feet at a horizontal distance of ten thousand (10,000) feet beyond each end of the Primary Surface. The centerline of the Approach Surface is the continuation of the centerline of the Runway.

Midland Airpark

Runway 7/25 and Runway 16/34 (Nonprecision Instrument Runways visibility minimums greater than ¾ mile) Approach Zones are hereby established beneath the Approach Surfaces at each end of Runway 7/25 and Runway 16/34 at Midland Airpark for nonprecision instrument landings and takeoffs. The Approach Surface shall have an inner edge width of five hundred (500) feet, which coincides with the width of the Primary Surface, at a distance of two-hundred (200) feet beyond each Runway end, widening thereafter uniformly to a width of three thousand five hundred (3,500) feet at a horizontal distance of ten thousand (10,000) feet beyond each end of the Primary Surface. The centerline of the Approach Surface is the continuation of the centerline of the Runway.

B. Conical Zone: A Conical Zone is hereby established beneath the Conical Surface at the Airport which extends outward and upward from the periphery of the Horizontal Surface at a slope of 20:1 for a horizontal distance of four thousand (4,000) feet.

C. Horizontal Zone: A Horizontal Zone is hereby established beneath the Horizontal Surface at the Airport which is a plane one hundred fifty (150) feet above the established Airport Elevation, the perimeter of which is constructed by swinging arcs of ten thousand (10,000) feet radii from the center of each end of the Primary Surface and connecting the adjacent arcs by lines tangent to those arcs.

D. Transitional Zones: Transitional Zones are hereby established beneath the Transitional Surfaces at the Airport. Transitional Surfaces, symmetrically located on either side of the Runway, have variable widths as shown on the Midland International and Midland Airpark Airport Hazard Zoning Maps. Transitional Surfaces extend outward perpendicular to the Runway centerline and the extended Runway centerline from the periphery of the Primary Surface and the Approach Surfaces at a slope of 7:1 to where they intersect the Horizontal Surface. Where the Precision Instrument Runway Approach Surface projects through and beyond the Conical Surface, there are hereby established Transitional Zones beginning at the sides of and at the same elevation as the Approach Surface and extending for a horizontal distance of five thousand (5,000) feet as measured perpendicular to the extended Runway centerline.

11-11-7. Height Limitations in Height Hazard Zones

Except as otherwise provided in Section 11-11-11 of this Chapter, no Structure shall be erected, altered, or replaced and no tree shall be allowed to grow in any Height Hazard Zone as defined in Section 11-11-6 to a Height in excess of the applicable Height limitations set forth in this Section 11-11-7 The applicable Height limitations for each Height Hazard Zone are as follows:

A. Approach Zones:

Midland International Airport

Runway 16R/34L and Runway 10/28 (Precision Instrument Runways): Slope one (1) foot in Height for each fifty (50) feet in horizontal distance beginning at the end of and at the same elevation as the Primary Surface and extending to a point ten thousand (10,000) feet from the end of the Primary Surface, and then rising one (1) foot in Height for each forty (40) feet in horizontal distance for an additional forty thousand (40,000) feet from the end of the Primary Surface.
Runway 16L/34R and Runway 4/22 (Nonprecision Instrument Runways): Slope one (1) foot in Height for each thirty-four (34) feet in horizontal distance beginning at the end of and at the same elevation as the Primary Surface and extending to a point ten thousand (10,000) feet from the end of the Primary Surface.

Midland Airpark

Runway 7/25 and Runway 16/34 (Nonprecision Instrument Runways): Slope one (1) foot in Height for each thirty four (34) feet in horizontal distance beginning at the end of and at the same elevation as the Primary Surface and extending to a point ten thousand (10,000) feet from the end of the Primary Surface.

B. Conical Zone: Slopes one (1) foot in Height for each twenty (20) feet in horizontal distance beginning at the periphery of the Horizontal Zone and at one hundred fifty (150) feet above the Airport Elevation and extending to a Height of three hundred fifty (350) feet above the Airport Elevation.

C. Horizontal Zone: Established at one hundred fifty (150) feet above the Airport Elevation.

D. Transitional Zones: Slope one (1) foot in Height for each seven (7) feet in horizontal distance beginning at the sides of and at the same elevations as the Primary Surface and the Approach Surface, and extending to a Height of one hundred fifty (150) feet above the Airport Elevation. There are also established Height Limits sloping one (1) foot in Height for each seven (7) feet in horizontal distance beginning at the sides of and at the same elevation as the Approach Surface, and extending to where they intersect the Conical Surface. Where the Precision Instrument Runway Approach Zone projects beyond the Conical Zone, there are established Height Limits sloping one (1) foot in Height for each seven (7) feet in horizontal distance beginning at the sides of and at the same elevation as the Approach Surface, and extending a horizontal distance of five thousand (5,000) feet perpendicular to the extended Runway centerline.

E. Excepted Height Limitation: Nothing contained in this Chapter shall be construed as prohibiting the growth, construction or maintenance of any Structure or tree to a Height of up to fifty (50) feet above the natural surface of the land at its location.

11-11-8. Airport Overlay Zones

A. Creation of Airport Overlay Zones (AOZs): In order to carry out the provisions of this Chapter, there are hereby created and established certain Airport Overlay Zones for the purposes of regulating and promoting uses of land within each zone that do not endanger the health, safety, and general welfare of the owners, occupants, or users of the land because of noise or vibrations or the risk of personal injury or property damage created by the operations of the Airport, including the taking off and landing of Aircraft. Within the Controlled Compatible Land Use Areas around Midland International Airport and the Midland Airpark, four AOZs are defined in this Section 11-11-8. These zones are shown on the Midland International Airport Compatible Land Use Zoning Map and the Midland Airpark Compatible Land Use Zoning Map, dated June 2014. All four zones are used at Midland International Airport, while only three zones are used at the Midland Airpark. The AOZs are hereby defined and established as follows:

Airport Overlay Zone 1 (AOZ-1): that portion of the Controlled Compatible Land Use Area between the 65 and 70 DNL contour lines.

Airport Overlay Zone 2 (AOZ-2): that portion of the Controlled Compatible Land Use Area between the 70 and 75 DNL contour lines.

Airport Overlay Zone 3 (AOZ-3): that portion of the Controlled Compatible Land Use Area between the 75 and 80 DNL contour lines.

Airport Overlay Zone 4 (AOZ-4): that portion of the Controlled Compatible Land Use Area designated as launch site safety corridors.

B. Permitted Uses: All uses are permitted within each applicable AOZ that are permitted by other existing zoning ordinances except as prohibited or regulated by the zoning regulations in this Chapter. Where there is a conflict between the AOZ restrictions and other zoning ordinances or where there are no other existing zoning ordinances, the provisions of the AOZ shall prevail. Where there is a conflict between the restrictions in overlapping AOZs, the more restrictive provisions prevail.

C. Prohibited uses: Table 1 attached to this Chapter enumerates land uses that are prohibited or restricted within each AOZ.

11-11-9. Land Use Restrictions

Except as provided in Section 11-11-10 of this Chapter, no use may be made of land or water within the Controlled Compatible Land Use Area established by this Chapter in such a manner as to create electrical interference with navigational signals or radio communications between the Airport and Aircraft, make it difficult for pilots to distinguish between Airport lights and other lights, result in glare in the eyes of pilots using the Airport, impair visibility in the vicinity of the Airport, create potential bird strike hazards or wildlife attractants, or otherwise in any way endanger or interfere with the landing, taking off, or maneuvering of Aircraft intending to use the Airport.

11-11-10. Nonconforming Uses, Structures and Trees

A. Nonconforming Uses.

Nothing contained in this Chapter shall be construed as requiring changes in or interference with the continuance of any Nonconforming Use of land.

B. Nonconforming Structures.

Nothing contained in this Chapter shall be construed as to require the removal, lowering, or other change to any existing Nonconforming Structure or to require the lowering of any phases or elements of a multiphase Structure that received a determination of no hazard by the Federal Aviation Administration under 14 Code of Federal Regulations Part 77 before this Chapter was adopted, regardless of whether actual construction on the multiphase Structure has commenced.

A Nonconforming Structure that received a determination of no hazard by the Federal Aviation Administration under 14 C.F.R. Part 77 before this Chapter was adopted shall be considered in violation of this ordinance immediately upon expiration or revocation of the determination of no hazard by the Federal Aviation Administration unless the property owner of a Nonconforming Use applies for and receives a new determination of no hazard from the Federal Aviation Administration prior to the expiration of any previous determination.

Temporary Structures that received a determination of no hazard by the Federal Aviation Administration under 14 Code of Federal Regulations Part 77 before this Chapter was adopted will continue to be determined as not in violation of this ordinance as long as a determination of no hazard by the Federal Aviation Administration remains in effect.

C. Nonconforming Trees.

Nothing in this Chapter shall be construed as to require the removal, lowering, or other change to any Nonconforming Tree. However, any Nonconforming Tree which grows to a greater Height than it was as of the effective date of this Chapter is subject to the provisions of this Chapter as described in Section 11-11-7 herein above.

11-11-11. Permits and Variances

A. Permits.

(1) Any Person who desires to replace, rebuild, substantially change, or repair a Nonconforming Structure or replace or replant a Nonconforming Tree must apply for and receive a permit, and the permit shall be granted, provided such permit is otherwise consistent with this Chapter. However, no permit shall be granted which would allow the establishment of an Airport Hazard or allow a Nonconforming Structure or tree to exceed its original Height or become a greater Hazard to Air Navigation than it was at the time of the adoption of this Chapter, or which would allow the establishment of a Nonconforming Use. Applications for permits shall be submitted to and issued by the Administrative Agency.

(2) Any Person who desires to erect a new Structure or rebuild, replace, or enlarge an existing Structure or establish a new use or substantially change an existing use in AOZ-4 must apply for and receive a permit. A permit shall be granted unless the new Structure or the new use would be a Height Hazard or a prohibited land use as set forth in Sections 11-11-8, 11-11-9, and Table 1 of this Chapter or would otherwise violate this Chapter. Applications for permits shall be submitted to and issued by the Administrative Agency.

B. Variances.

(1) A Person who desires to use property in a manner inconsistent with this Chapter may apply to the Board of Adjustment for a variance.

(2) If the applicant for variance seeks to erect or alter a Structure or allow the growth of a tree which would exceed the Height limits contained in this Chapter, the application must be accompanied by a determination from the Federal Aviation Administration under 14 Code of Federal Regulations Part 77 that the proposed Structure or tree would not constitute a hazard to air navigation.

(3) The Board of Adjustment shall not issue a variance unless it shall first make findings and show in its minutes such facts and/or special conditions by which each of the following conditions listed below has been satisfied.

(a) A literal application or enforcement of the regulations will result in unnecessary hardship; and

(b) The granting of relief would:

(1) result in substantial justice being done;

(2) not be contrary to the public interest; and

(3) be in accordance with the spirit of the regulation and this Chapter.

In making its findings under (b)(2) and (b)(3) above, the Board shall consider whether the granting of relief would jeopardize public health and safety or otherwise result in the creation of an unacceptable safety risk as defined in 14 Code of Federal Regulations Parts 420 and 431; and shall consider whether the granting of relief would impair the ability of the City of Midland to accommodate Aircraft which use, or are projected to use, the Airport or Airpark.

The Board shall allow a variance from the regulations in this Chapter if the Board finds that all of the conditions above have been satisfied. If the Board finds that not all such conditions have been satisfied, its findings must state which conditions have not been satisfied.

(4) The Board of Adjustment shall consult with the Director of Airports before making its findings and shall set forth in its minutes the objections or concurrence of the Director of Airports to each such finding.

C. Requirements and Reasonable Conditions.

(1) Any permit granted may, at the discretion of the Administrative Agency, impose a requirement to install and maintain, at the expense of the permit applicant, any markers or lights as may be necessary to indicate to flyers the presence of an Airport Hazard.

(2) A permit for a new Structure in AOZ-4 will not be granted until the design and construction of the proposed Structure has been approved by the City Engineer of the City of Midland, after consultation with the Director of Airports.

(3) Any variance granted may, at the discretion of the Board of Adjustment, include any reasonable conditions as may be necessary to accomplish the purpose of this Chapter.

D. Exceptions.

No permit shall be required for any activity on property owned or leased by the City of Midland or its tenants, or the federal government.

11-11-12. Board of Adjustment

A. Pursuant to Texas Local Government Code § 241.032, the City of Midland Board of Adjustment is hereby designated as the Board of Adjustment for the purposes of this Chapter and shall have and exercise the following powers:

(1) to hear and, after consultation with the Director of Airports of the City of Midland, decide appeals from any order, requirement, decision, or determination made by the Administrative Agency in the administration or enforcement of this Chapter;

(2) to hear and, after consultation with the Director of Airports of the City of Midland, decide special exceptions to the terms of this Chapter when the board is required to do so; and

(3) to hear and, after consultation with the Director of Airports of the City of Midland, decide specific variances regarding the administration or enforcement of this Chapter.

B. The Board of Adjustment organization and operation shall be in accordance with Title XI Planning and Development, Chapter 1 Zoning, Section 11-1-12 of the City of Midland Municipal Code. If Section 11-1-12 conflicts with the provisions of this Chapter, this Chapter shall govern with respect to matters related to airport zoning regulations imposed pursuant to Texas Local Government Code §§ 241.001 et seq.

11-11-13. Appeals

A. A decision of the Administrative Agency made in its administration of this Chapter may be appealed to the Board of Adjustment by any Person who is aggrieved by the decision or by any taxpayer who is affected by the decision or by the governing body of a political subdivision that believes the decision is the result of an improper application of this Chapter.

B. All appeals hereunder must be taken in the time period and by the procedures set forth in Section 11-1-12 of this Code.

C. An appeal shall stay all proceedings in furtherance of the action appealed unless the Administrative Agency certifies in writing to the Board of Adjustment that by reason of the facts stated in the certificate, a stay would, in the opinion of the Administrative Agency, cause imminent peril to life or property. In such case, proceedings shall not be stayed except by order of the Board of Adjustment on notice to the Administrative Agency and on due cause shown.

D. In accordance with Section 11-1-12 of this Code, the Board of Adjustment shall fix a reasonable time for hearing appeals, give public notice and due notice to the parties in interest, and decide the same within a reasonable time. Upon the hearing, any party may appear in person, by agent, and/or by attorney.

E. The Board of Adjustment, after consultation with the Director of Airports of the City of Midland, whose objections or concurrence shall be set forth in writing, may reverse or affirm, in whole or in part, or modify the Administrative Agency's order, requirement, decision, or determination from which an appeal is taken and make the correct order, requirement, decision, or determination, and for this purpose the board of adjustment has the same authority as the Administrative Agency.

11-11-14. Judicial Review

Any Person aggrieved or any taxpayer who is affected by a decision of the Board of Adjustment, or a governing body of a political subdivision may present to a court of record a petition stating that the decision of the Board of Adjustment is illegal and specifying the grounds of the illegality as provided by and in accordance with the provisions of Texas Local Government Code, §241.041.

11-11-15. Enforcement and Remedies

The governing body of the City of Midland, Texas may institute in a court of competent jurisdiction an action to prevent, restrain, correct, or abate any violation of this Chapter or of any order or ruling made in connection with their administration or enforcement including, but not limited to, an action for injunctive relief.

11-11-16. Penalties

Each violation of this Chapter or of any order or ruling promulgated hereunder shall constitute a misdemeanor and upon conviction shall be punishable by a fine of not more than $2,000 and each day a violation continues to exist shall constitute a separate offense.

11-11-17. Conflicting Regulations

Where there exists a conflict between any of the regulations or limitations prescribed herein and any other regulation applicable to the same area, whether the conflict be with respect to the Height of Structures or trees, the use of land, or any other matter, the more stringent limitation or requirement shall control.

11-11-18. Severability

If any of the provisions of this Chapter or the application thereof to any Person or circumstance is held invalid, such invalidity shall not affect other provisions or application of this Chapter which can be given effect without the invalid provision or application and to this end, the provisions of this Chapter are declared to be severable.

11-11-19. Adherence with State Laws

Any actions brought forth by any Person or land owner as a result of the administration, enforcement, or the contesting of this Chapter will be in accordance with the provisions of Texas Local Government Code, §§241.001 et seq and other applicable state laws.

11-11-20. Effective Date

Whereas, the immediate operation of the provisions of this Chapter is necessary for the preservation of the public health, safety, and general welfare, an emergency is hereby declared to exist and this Chapter shall be in full force and effect from and after their adoption by the City of Midland.

SECTION THREE. The provisions of this ordinance are to be cumulative of all other ordinances or parts of ordinances governing or regulating the same subject matter as that covered herein; provided, however, that all prior ordinances or parts of ordinances inconsistent with or in conflict with any of the provisions of this ordinance are hereby expressly repealed to the extent of any such inconsistency or conflict.

SECTION FOUR. If any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional or invalid, such holding shall not affect the validity of the remaining portions of this ordinance. The Council of the City of Midland hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, or phrase hereof irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared unconstitutional or invalid.

SECTION FIVE. The penalty for violation of this ordinance shall be in accordance with the general penalty provisions contained in Section 1-3-1 of the City Code of Midland, Texas, which provides for a fine not exceeding two thousand dollars ($2,000.00).

SECTION SIX. The City Secretary is hereby authorized and directed to publish the descriptive caption of this ordinance in the manner and for the length of time prescribed by law as an alternative method of publication.

The above and foregoing ordinance was duly proposed, read in full and adopted on first reading, the _____ day of _____, A.D., 2014; and passed to second reading on motion of Council member _____, seconded by Council member _____, by the following vote:

Council members voting “AYE”:

Council members voting “NAY”:

The above and foregoing ordinance was read in full and finally adopted by the following vote upon motion of Council member _____, seconded by Council

member _____, on the _____ day of _____, A.D., 2014, at a regular meeting of the City Council:

Council members voting “AYE”:

Council members voting “NAY”:

PASSED AND APPROVED THIS _____ day of _____, A.D., 2014.

_____
Jerry F. Morales, Mayor

ATTEST:

_____
Amy M. Turner, City Secretary

APPROVED AS TO CONTENT
AND COMPLETENESS:

_____
Marv Esterly, Director of Airports

APPROVED ONLY AS TO FORM:

_____
Keith Stretcher, City Attorney

Table 1 – Prohibited Land Uses

Land Use	Airport Overlay Zones			
	Sound Level in DNL			Launch Safety Corridors
	AOZ-1 65-70 DNL	AOZ-2 70-75 DNL	AOZ-3 75-80 DNL	AOZ-4
Residential				
Residential, other than mobile homes and transient lodgings	N(1)	N(1)	N	N
Mobile home parks	N	N	N	N
Transient lodgings	N(1)	N(1)	N(1)	N
Public Use				
Schools	N(1)	N(1)	N	N
Hospitals and nursing homes	25	30	N	N
Churches, auditoriums and concert halls	25	30	N	N
Governmental services	Y	25	30	Y(9)
Transportation	Y	Y(2)	Y(3)	Y(9)
Parking	Y	Y(2)	Y(3)	Y(9)
Commercial Use				
Offices, business and professional	Y	25	30	Y(9)
Wholesale and retail-building materials, hardware and farm equipment	Y	Y(2)	Y(3)	Y(9)
Retail trade – general	Y	25	30	N
Utilities	Y	Y(2)	Y(3)	Y
Communication	Y	25	30	Y
Manufacturing and Production				
Manufacturing – general	Y	Y(2)	Y(3)	Y(9)
Photographic and optical	Y	25	30	Y(9)
Agriculture (except livestock) and forestry	Y(6)	Y(7)	Y(8)	Y
Livestock farming and breeding	Y(6)	Y(7)	N	Y
Mining and fishing, resource production and extraction	Y	Y	Y	Y
Recreational				
Outdoor sports arenas and spectator sports	Y(5)	Y(5)	N	N
Outdoor music shells, amphitheaters	N	N	N	N
Nature exhibits and zoos	Y	N	N	N
Amusements, parks, resorts and camps	Y	Y	N	N
Golf courses, riding stables, and water recreation	Y	25	30	N

Numbers in parentheses refer to notes.

KEY TO TABLE 1

Y (Yes) - Land Use and related structures compatible without restrictions or with restrictions as noted.

N (No) - Land Use and related structures are not compatible and should be prohibited.

NLR - Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30 or 35 - Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.

Table 1 – Prohibited Land Uses

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB to 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

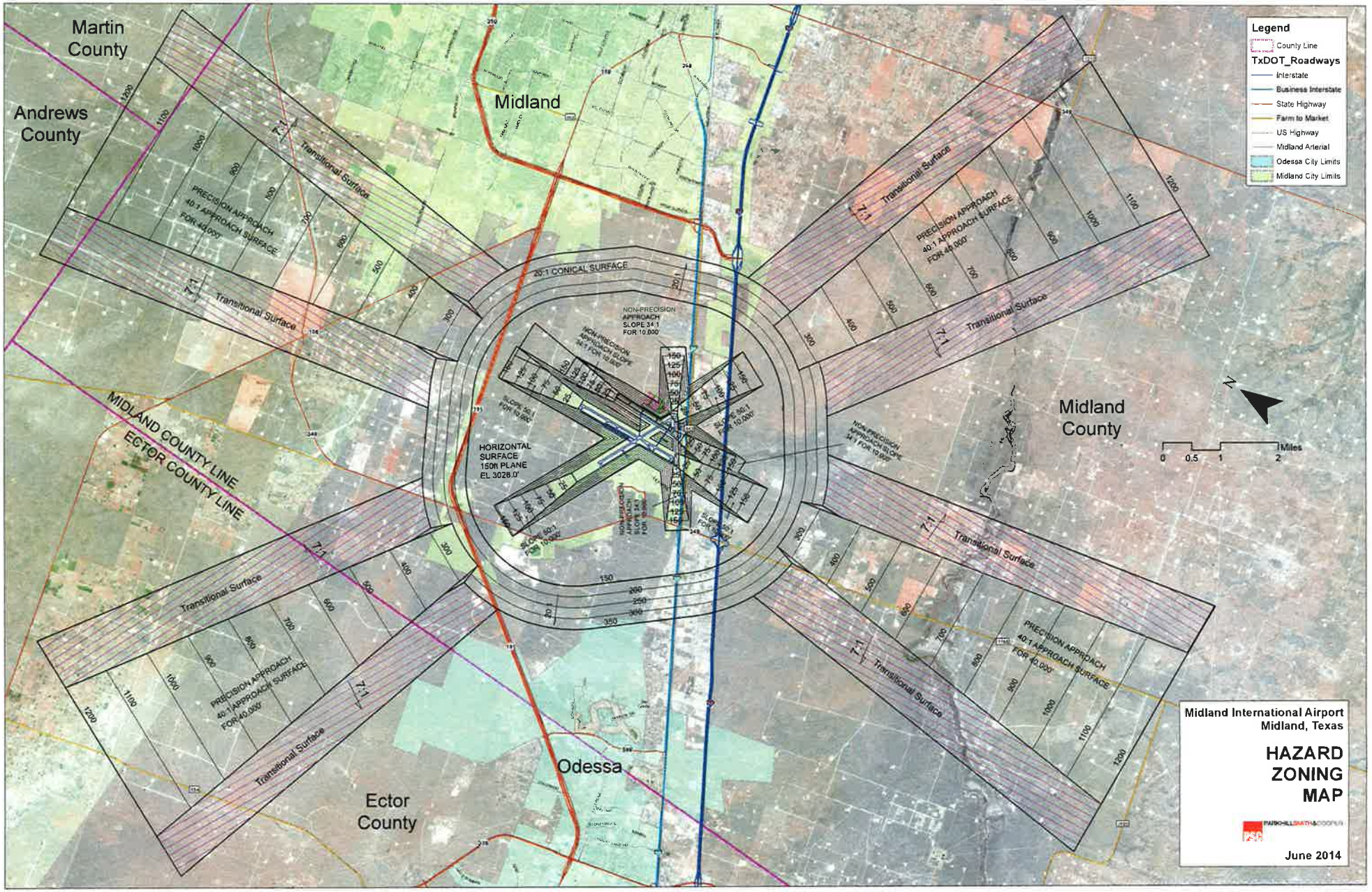
(5) Land use compatible provided that special sound reinforcement systems are installed.

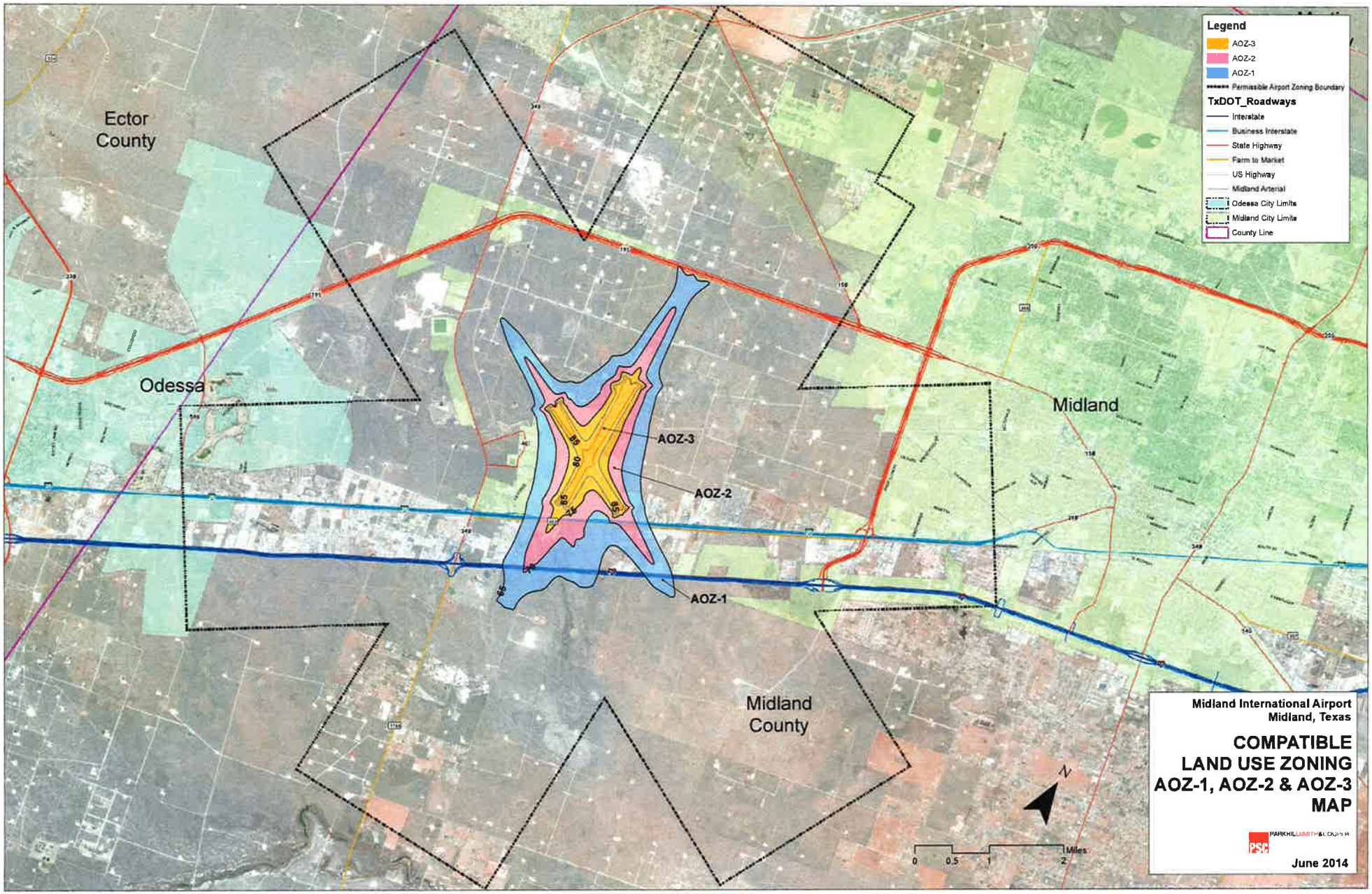
(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30.

(8) Residential buildings not permitted.

(9) Construction design and materials must be approved by the City Engineer, after consultation with the Director of Airports, in order to ensure appropriate protection of public health and safety of occupants or users of the building, before construction may commence.





Midland International Airport
Midland, Texas

COMPATIBLE LAND USE ZONING AOZ-1, AOZ-2 & AOZ-3 MAP

PSI PARKHILLSMITH&COOPER

June 2014

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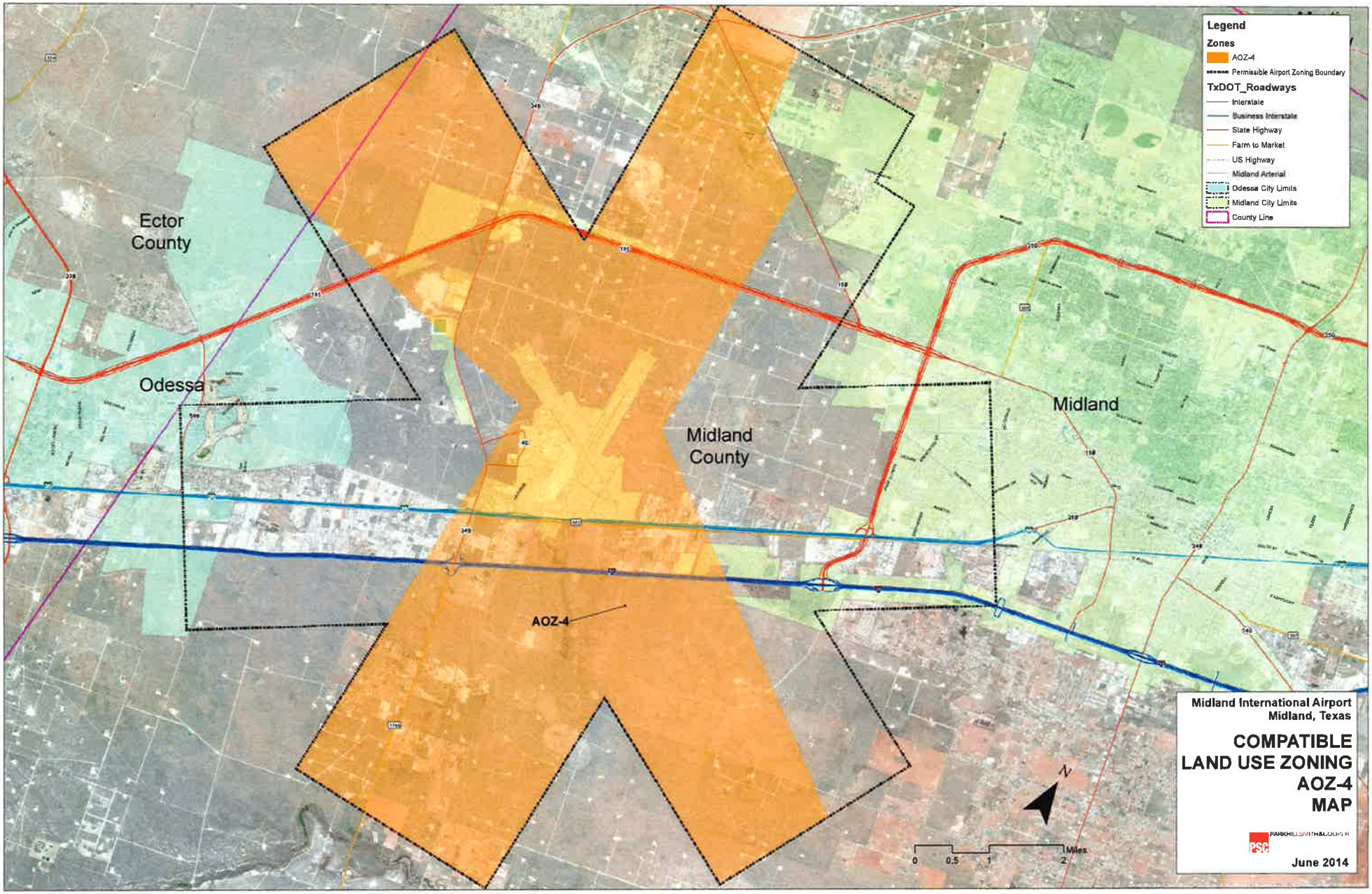

Midland International Airport
Midland, Texas

COMPATIBLE LAND USE ZONING AOZ-4 MAP

PSH PARKHILLSMITH&COOPER

June 2014

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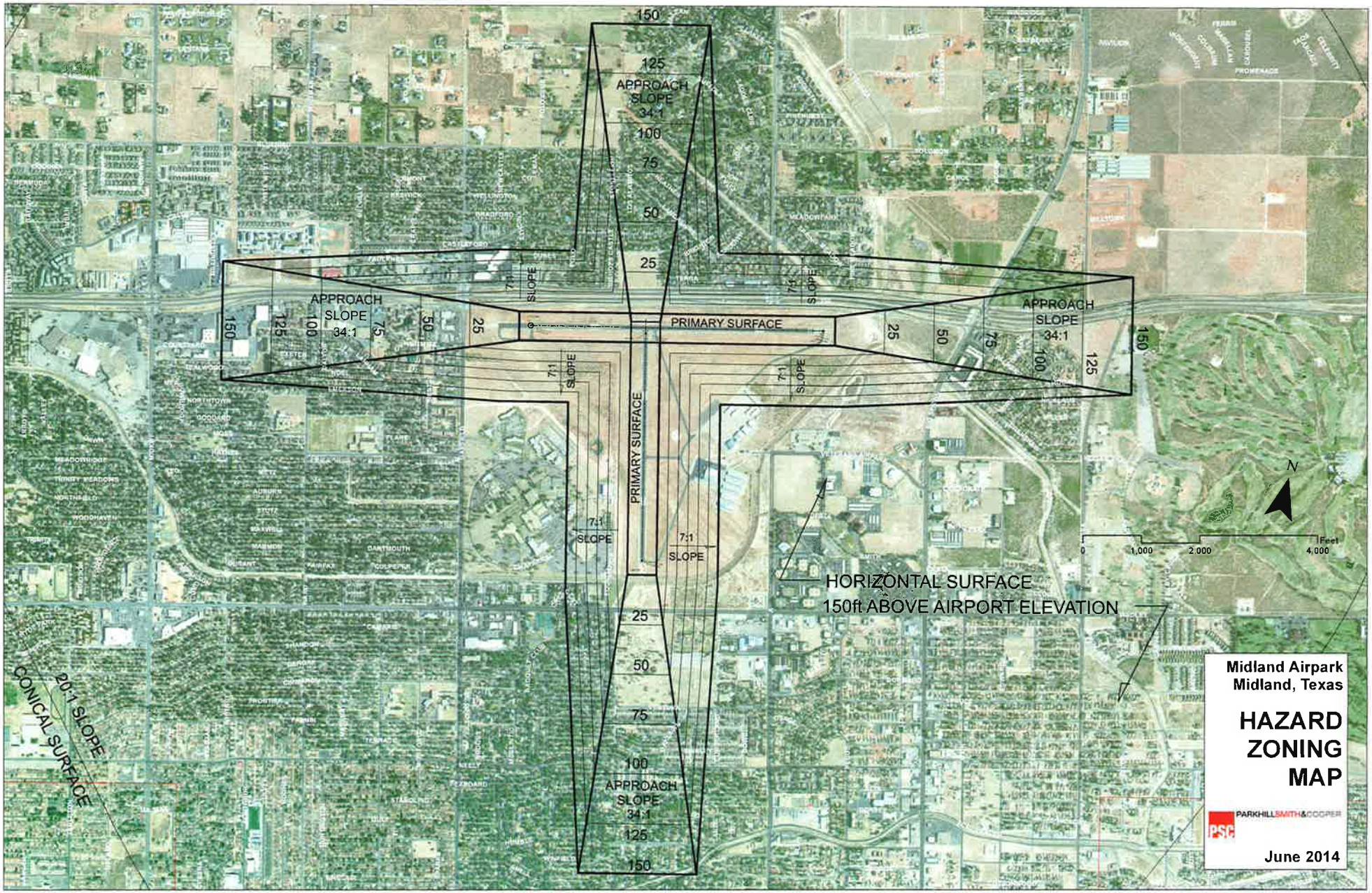
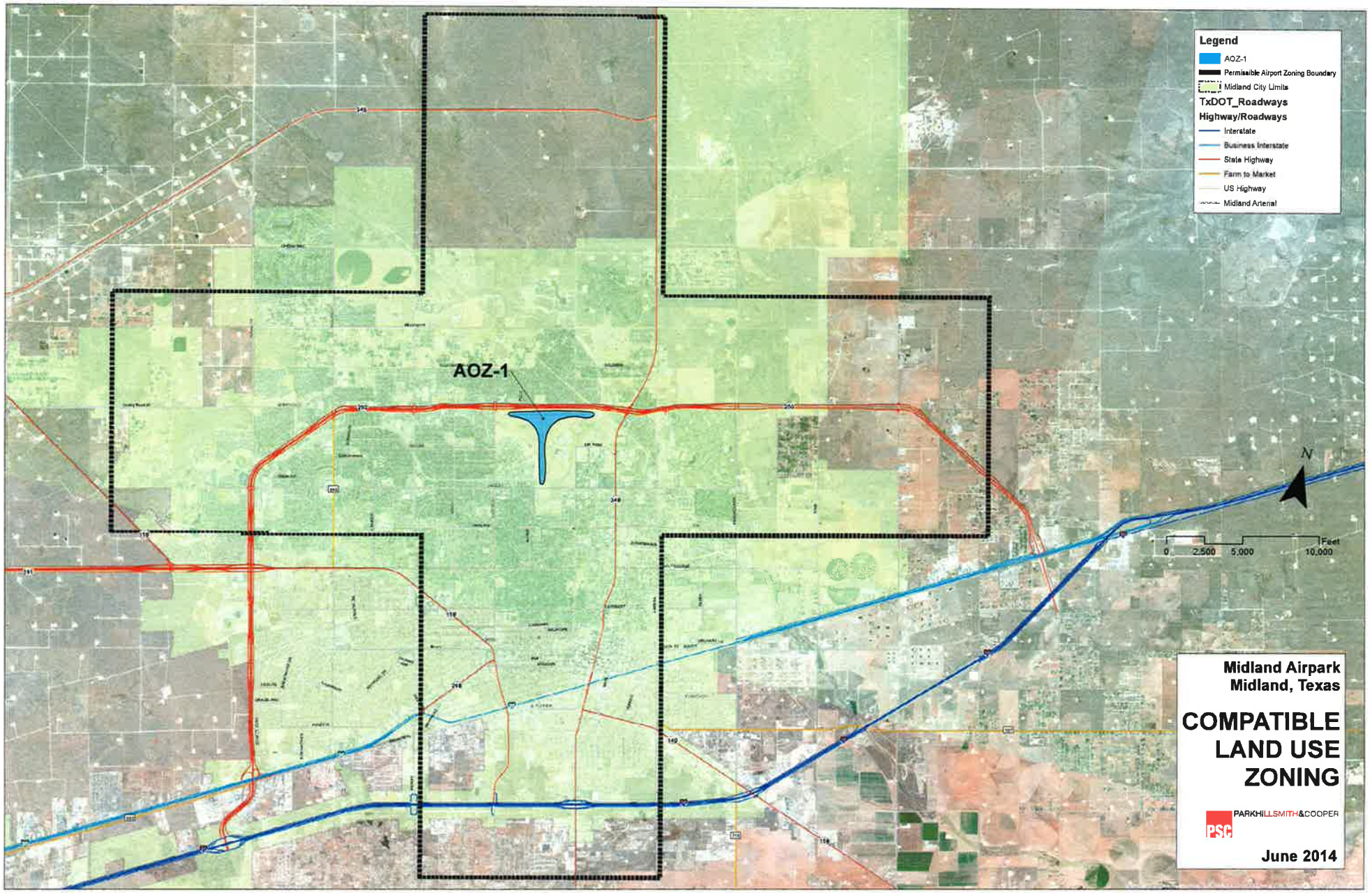


Midland Airpark
Midland, Texas

HAZARD ZONING MAP

PARKHILLSMITH&COOPER

June 2014



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