



Bicycle and Pedestrian Plan

Chapter 10



Introduction

Walking and bicycling are valuable modes of transportation. These activities provide relaxation, recreation, exercise, and the opportunity to enjoy nature, and also serve as an alternative, affordable means of transportation for travel to school, work, and other destinations. Pedestrian and bicycle pathways that are safe, convenient, accessible, and well connected are instrumental in supporting a high quality of life in a region. They also contribute to societal and environmental enhancements through reduced vehicle miles traveled, decreased roadway congestion, overall improved public health, an increased sense of community, and improved mobility for those without access to a personal automobile. Moreover, environmental advantages from non-motorized transportation include reduced air and noise pollution and improved water quality. Unfortunately, however, pedestrians and bicyclists are often overlooked in planning for transportation improvements and investments.

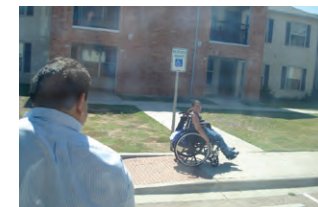


Midland-Odessa Regional Interest

Throughout the MPO's public outreach activities, participants have expressed a strong interest in non-motorized transportation for both recreational and utilitarian purposes. Within our regional transportation survey, 12 percent of survey respondents indicated that they had used a bicycle on the day they completed the survey. In addition, survey respondents conveyed that they envision future community growth and development to be comprised of higher density land uses, which would provide more opportunities for bicycling and walking. During community workshops and thematic roundtable discussions, advocates from the pedestrian and bicycle community articulated that more pedestrian- and bicycle-friendly infrastructure is needed in both cities. Specific comments received were that ADA-compliant sidewalks are necessary, more downtown streetscaping projects would help revitalize the downtowns, additional regional and local bicycle routes are needed, and both pedestrian and bicycle transportation should be encouraged and promoted.



Taking these visions and needs into account, the Midland-Odessa MPO seeks to provide a foundation to enhance bicycling and walking as feasible transportation alternatives and recreational options. Based upon community input and an evaluation of the existing pedestrian and bicycle infrastructure, the MPO will pursue projects that are focused on providing both local access and regional connectivity, as well as enhancing downtown streetscapes that add quality and interest to the pedestrian and bicycling environment.



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Bicycle and Pedestrian Requirements

In order to make bicycling and walking tenable options, the basic needs of pedestrians and bicyclists must be taken into consideration. Pedestrians are composed of all types of people walking for a variety of purposes: to exercise, to get to school, to walk from their car to their final destination, etc. Environments that are more conducive to walking are those that encompass mixed and dense land uses and offer pedestrian-oriented activities. In addition, pedestrian facilities must be safe and ADA-compliant for individuals with disabilities. Furthermore, a quality pedestrian environment should provide direct paths, be continuous, have safe crossings, have visual interest and offer amenities, and be secure.

Pathways along an interconnected grid network of streets generally offer more direct travel to destinations than curvilinear and cul-de-sac streets. Street crossings should be well-designed, visible, and contain crosswalks and signal activation devices where appropriate. Additionally, street crossings that incorporate raised medians and innovative design features such as bulbouts, which are an extension of the pedestrian network into the roadway, make crossing streets safer for pedestrians. Streets that provide visible interests and amenities such as street furniture and trees encourage more people to walk. Also, a sense of safety and security is achieved through such features as street lighting, pedestrian signs, and other visibility-related design features.



Bicyclists' needs are closely related to those of pedestrians. In general, bicyclists are made up of advanced, basic, and child users. As such, bicycle facilities must be able to accommodate the needs of all levels of users. Bicycle facilities include a number of features including shared lanes, striped lanes, multiuse paths, and signed routes. Shared lanes are usually wider outside lanes that provide additional room to accommodate bicyclists, while striped lanes are narrow lanes for the exclusive use of bicyclists and contain markings to indicate their designated use. Multiuse paths are typically asphalt, concrete, or gravel pathways that run adjacent to roadways and can be shared by both pedestrians and bicyclists, while signed routes are created in cases where no room exists to create additional space for bicyclists and are often on less congested streets with reduced traffic speeds. Basic and child bicyclists may feel more confident utilizing multiuse paths and striped lanes, while more advanced users may travel safely on shared lane facilities.



A bicycle transportation network should meet certain requirements to ensure that bicycling is safe, convenient, and efficient for both utilitarian travel and recreational purposes. Hazards to be aware of include a lack of proper



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lighting, overhead obstructions, vehicular traffic, drainage grates, and conflict with other users such as pedestrians. The bicycle network itself should be direct and provide adequate connections between popular destinations, as well as access to public transit routes.

Clear and consistent route signage not only assists bicyclists in wayfinding, but also helps motorists be aware of the presence of bicyclists. Bicycle parking that is safe, secure, and convenient is critical at public and popular destinations. Ancillary facilities, such as showers and lockers at places of employment, are also important for those that travel to work. Other features such as bike racks on buses also encourage the use of public transportation.

Overall, four critical components augment the success of a non-motorized transportation system: engineering, education, encouragement, and enforcement. Proper engineering and design of roadways incorporating a multimodal environment are vital in promoting a successful pathway network. Educational programs that administer information about the correct and safe way of traveling by foot or bicycle and that make motorists aware of “sharing the road” with different types of transportation uses are imperative for transportation safety. This is further complemented by the enforcement of traffic laws that relate to the interaction between motorists and pedestrians and bicyclists. Additionally, encouragement through the implementation of pedestrian and bicycle friendly elements and accommodations, as well as campaigns that market bicycling and walking as sustainable and reasonable transportation options, may stimulate growth in walking and bicycling activity.



Best Practices for Bicycle and Pedestrian Planning

Several best practices exist concerning the proper planning of bicycle and pedestrian facilities. Similar to the other modes of transportation, this “toolbox” of policies, strategies, and actions can assist in advancing bicycle and pedestrian transportation in the region.

Integrating Land Use and Transportation

Planning for a community or a region should integrate land use and transportation planning to make communities livable and accessible for walking and bicycling. Governmental entities should develop standards, policies, and guidelines in order to support a safe, walkable, and bicycle-friendly environment. Land uses and street configurations most conducive to biking and walking are concentrated in mixed-use, dense, compact

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developments with a variety of services and facilities. In addition, “complete streets” concepts aid in accommodating pedestrians and bicyclists and encourage additional amenities that promote non-motorized transportation.

Specific policies for land use and transportation considerations may include providing clearly defined, separate lanes for bicyclists in order to create a physical division between motorists and bicyclists. This helps elevate the importance of bicycling as a legitimate form of transportation. Other examples include requiring public rights-of-way for the construction of pathways connecting cul-de-sacs between developments, encouraging schools to include pedestrian and bike access issues in new school location decisions, and developing specific requirements for pedestrian and bicycle facilities in town centers, transit corridors, and employment centers.

Maintaining a Database of Pedestrian and Bicycle Facilities



In order to stay abreast of continuing bicycle and pedestrian needs, it is critical for regions and communities to maintain a database of pedestrian and bicycle facilities. This database should first involve creating an inventory of the existing system and contain information as to the conditions and features of the infrastructure. Besides facility conditions and other basic features, the database could also include the location of missing links in sidewalks and pathways, and the conditions of existing traffic operations and geometric conditions which impact a pedestrian or bicyclist’s decision in using certain roadways. Criteria for determining bicycle and pedestrian levels of service could also be maintained to evaluate system performance. The database should be updated regularly to help in planning for future improvements to better accommodate bicyclists and pedestrians. Both the cities of Midland and Odessa have a good start on a bicycle network inventory. However, both cities could benefit greatly by maintaining a detailed sidewalk inventory.

Preserving Future Bicycle and Pedestrian Corridors



To further assist bicycle and pedestrian efforts, it is important for communities to plan for and preserve future bicycle and pedestrian corridors. This is necessary to ensure that pathways continue to remain well connected and offer the best routing options. Strategies include requiring future development to set aside trail and pathway easements, incorporating bikeway right-of-way designations in transportation and master plans, identifying recreational trail corridors in park and community plans, and establishing pathways along railroad corridors and utility easements. In fact, a hike-and-bike trail along a TXU Energy easement on the west side of Midland was recently completed.



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Incorporate Bicycle and Pedestrian Elements into Roadway Projects

Among other transportation policies, requiring that new roadways include bicycle and pedestrian elements would also improve bicycle and pedestrian mobility. This could be achieved through encouraging local jurisdictions to build wider outer lanes, paved shoulders, bicycle friendly drainage infrastructure, traffic signal actuation devices, sidewalks or other types of pathways running parallel to the roadway, and other such amenities. Additionally, coordination with TxDOT to ensure such accommodations on new or improved major roadways, bridges, underpasses, at-grade rail crossings, and highway interchanges could better support regional non-motorized transportation.



System Preservation and Maintenance of Facilities

Like any asset, bike and pedestrian facilities need to be maintained in a state of good repair. Continued maintenance efforts are needed to ensure that the use of pedestrian and bicycle facilities is maximized. Street and path surfaces should be kept in smooth condition and free of debris. Bike lanes in particular are subject to debris accumulation and require periodic sweeping.



The annual budgets for the cities of Midland and Odessa both allocate funds toward routine preservation and maintenance programs for bicycle and pedestrian facilities. Oftentimes, pedestrian walkways are typically rehabilitated along with the city street maintenance projects. In addition, sidewalks are also improved at the request of the general public.

Marketing and Encouraging Bicycling and Walking

Marketing non-motorized transportation facilities as strongly-valued community assets may encourage more people to bicycle and walk. In doing so, efforts should focus on bicycling and walking as practical, popular, and mainstream activities that all types of people can enjoy. Selling points could include that transportation can be more than just a means of traveling to destinations, but also a fun and recreational experience that can be done safely and at little or no cost. Materials, such as route maps and web sites, can be created to promote bicycling and walking and inform people about bike-compatible roads, pedestrian-friendly areas, and other bicycle and pedestrian amenities. Bicycling and walking can be encouraged by government agencies, politicians, employers, retailers, and bicycle and pedestrian advocacy groups.



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Educational/Safety Programs



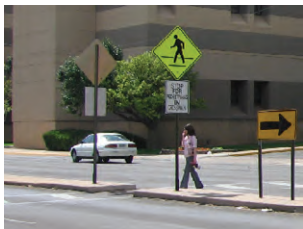
To increase bicycle and pedestrian safety, educational programs that teach pedestrian and bicycle safety issues can be implemented. Youth can especially benefit from bicycling and safety education, since they are very likely to walk or bike to school or other destinations. Further, public awareness programs can educate motorists about the importance of sharing the roadway with non-vehicular traffic and other such safety considerations. To help achieve this, TxDOT has worked with the Permian Basin Bicycle Association, a local bicycle advocacy group, to install “Share the Road” signs along various major roadways, including SH 191.

Enforcement of Traffic Laws



Often, bicyclists are unaware that they are using equipment that is legally considered a vehicle, and many do not abide by even basic traffic laws. Likewise, pedestrians often do not consider the consequences of their actions and do not cross at safe crossing points. Motorists are also guilty of traffic law violations which put themselves and non-motorized transportation users at risks. Enforcing traffic safety laws is essential in holding all transportation users accountable for their actions. Local police departments can work to increase enforcement and deter common offenses, such as motorists not yielding the right-of-way to pedestrians, bicyclists running red lights and stop signs, riding on the wrong side of a street, and jaywalking.

Coordination



Coordinating bicycle and pedestrian planning among entities in a region, including counties, cities, school districts, and other education institutions, is imperative in ensuring a well connected and quality bicycle and pedestrian network. Different entities have different jurisdictional authority throughout the region, and a coordinated approach is necessary for improving bicycle and pedestrian infrastructure. Bicycle and pedestrian coordinators employed in local governments or at the regional level also can play vital roles in coordinating bicycle and pedestrian issues and projects.

Safe Routes to School

Schools are considerable sources of traffic and congestion, as many parents drive their children to these important destinations. In particular, local governments can work with school districts to ensure that improvements near schools are designed to minimize conflicts between pedestrians, bicyclists, and motorists, by directing students to



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safer routes to schools. Further, school districts should be encouraged to consult with local governments about transportation circulation and to ensure safe and appropriate pedestrian and bicycle access. One such federal program implemented through SAFETEA-LU to encourage bicycle and pedestrian safety is the Safe Routes to School program, which provides funds for pedestrian and bicycle improvements and bicycle and pedestrian safety education. This program is likely to continue in the future federal transportation legislation and has been heralded as a vital tool in improving pedestrian and bicycle safety for children. In Midland, two Safe Routes to School projects were recently approved and let for Emerson and Fannin elementary schools and Goddard Junior High School. These projects include the construction of sidewalks and installation of crosswalks and signs along the roadways immediately surrounding these three schools. The MPO will continue to pursue the development of similar Safe Routes to School projects for the schools in each city that are in most need of bicycle and pedestrian infrastructure.

Funding

Funding for proposed bicycle and pedestrian facilities is often the last hurdle to implementation. While the prominence of state and federal enhancement grants has varied over time, there appears to be recent renewed interest in funding such projects. Therefore, establishing priorities is critical to the success of the bicycle and pedestrian element of this transportation plan. Even so, the MPO will continue to pursue alternative funding sources, such as private sponsorship and local economic development corporations. Finally, the bicycling community has a rich history of participating in charitable fund raisers. Perhaps it is time for these groups to fund raise for their own cause. "Bikin' the Basin" bicycle rallies, beginning in the downtown area of one city and terminating in the downtown of the other, could be organized to help raise funds for the construction of some of the proposed projects. This type of event could also be used to raise public awareness of the importance of bicycling in the community.



Midland and Odessa Bicycle and Pedestrian Plan

Presently, both the cities of Midland and Odessa include a system of bicycle and pedestrian facilities, which are described in more detail in Chapter 5: Existing Transportation System. Additionally, the region possesses many qualities that contribute to its ability to attract bicyclists and pedestrians, including a favorable climate, a flat landscape, good connectivity through its local street network in the central cities, and favorable demographics,



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such as the presence of students attending higher-level institutions. However, as in most regions, automobiles are the dominant form of transportation, and bicycling and walking may not be considered viable alternatives for many people in the area. This may be further exacerbated by the presence of unsafe crossings, missing segments in bicycle facilities and sidewalks, design of arterials and major roadways, and a lack of dedicated lanes to give the sense of a visible division between automobiles and bicyclists.



Recently, the Cities of Odessa and Midland have been more active in developing their own bicycle and pedestrian infrastructure. Building on local successes, this plan suggests a new shift in ideas and approaches to create options for the traveling public and advocate for regional connectivity. As such, the MPO will pursue projects that focus on providing both local access and regional connectivity, coupled with enhancements to streetscapes that promote walking in the urban cores.

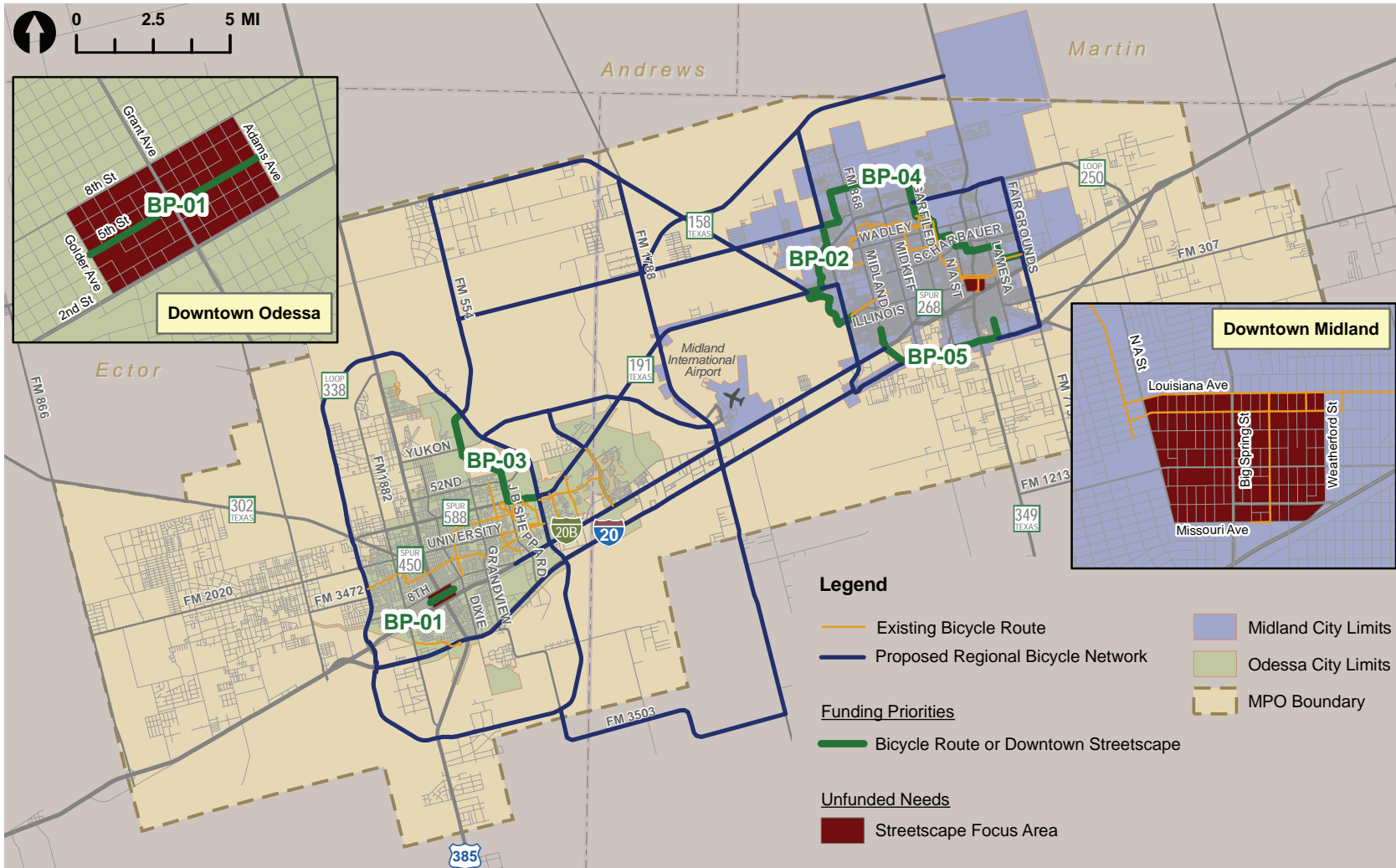
Figure 10-1 presents the area's existing bicycle transportation network as well as the long-range vision of additional local access routes and the establishment of regional bicycle routes connecting the two cities. In addition, the map shows an area of each downtown city in which targeted streetscape improvements will be pursued. To achieve this vision, several key projects will be implemented first.



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Figure 10-1: Bicycle and Pedestrian Plan



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Funding Priorities

The next series of projects are those that were given careful consideration by the MPO, taking into account the project evaluation guidelines, input from the community, and the preferred future development scenario. Because of the current fiscal realities of transportation funding, only a small number of projects are included in this targeted list. Funding for these projects are predicated upon the assumption that they will be favorably reviewed by the Texas Transportation Commission. Further information regarding the funding of bicycle/pedestrian projects are discussed in Chapter 13: Financial Plan.


BP-01		5th Street from Golder Avenue to Adams Avenue in City of Odessa (0.9 miles): Streetscape project	
Description: This project is an important first step in the MPO's initiative to improve the aesthetics of the street network in downtown Odessa. The enhancement of the aesthetics of 5th Street between Medical Center Hospital and Odessa Regional Hospital will consist of bicycle and pedestrian amenities including plantings, street furniture, sidewalk treatments, and bicycle signs and racks.			
Base Year Construction Cost		\$1,215,720	
Other Costs (20% of Construction Cost)		\$243,144	
Total Project Cost		\$1,458,864	
Year of Expenditure		2012	
Year of Expenditure Cost		\$1,577,907	
Anticipated Funding Source		Category 9 - Enhancements	




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BP-02		West Midland Bikepath in City of Midland (8.4 miles): Construct an on-road bicycle facility.	
Description: This 8.4 mile path begins at the western terminus of the existing bike path at Illinois Ave and Mesa Drive, follows a series of city streets on the west and north sides of Midland, and terminates at the intersection of Midkiff Road and Mockingbird Lane. The path connects Jones Elementary, the Scharbauer Sports Complex, Scharbauer Elementary, Grasslands Park, Abell Junior High School, CJ Kelly Park, and Greathouse Elementary.			
Base Year Construction Cost	\$1,260,000		
Other Costs (20% of Construction Cost)	\$252,000		
Total Project Cost	\$1,512,000		
Year of Expenditure	2015		
Year of Expenditure Cost	\$1,839,579		
Anticipated Funding Source	Category 9 - Enhancements		

BP-03		East Odessa Greenway/Bikepath in City of Odessa (4.8 miles): Construct an on- and off-road bicycle facility.	
Description: This 4.8 mile path begins at the intersection of Loop 338 and Grandview, follows a series of city streets on the east side of Odessa, and terminates at the eastern intersection of Loop 338 and SH 191 (42nd Street). The path connects UTPB, Memorial Gardens, and Ratliff Stadium.			
Base Year Construction Cost	\$860,000		
Other Costs (20% of Construction Cost)	\$172,000		
Total Project Cost	\$1,032,000		
Year of Expenditure	2017		
Year of Expenditure Cost	\$1,358,042		
Anticipated Funding Source	Category 9 - Enhancements		

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BP-04		North Midland Bikepath in City of Midland (7.4 miles): Construct an on-road bicycle facility.	
Description: This 7.4 mile path begins where project BP-02 ends, at the intersection of Midkiff Road and Mockingbird Lane, and terminates at the intersection of Cuthbert Avenue at Fairgrounds Road. The path connects Midland College, Windlands Park, and Reyes-Mashburn-Nelms Park.			
Base Year Construction Cost	\$1,110,000		
Other Costs (20% of Construction Cost)	\$222,000		
Total Project Cost	\$1,332,000		
Year of Expenditure	2021		
Year of Expenditure Cost	\$2,050,553		
Anticipated Funding Source	Category 9 - Enhancements		

BP-05		South Midland Bikepath in City of Midland (5.1 miles): Construct an on- and off-road bicycle facility.	
Description: This 5.1 mile path begins at the intersection of Midland Drive and Versailles Drive and terminates along Terrell Street at Hicks Avenue. The path connects Burnett Elementary, Dunagan Park, Travis Elementary, and Midland Freshman School.			
Base Year Construction Cost	\$865,000		
Other Costs (20% of Construction Cost)	\$173,000		
Total Project Cost	\$1,038,000		
Year of Expenditure	2027		
Year of Expenditure Cost	\$2,021,921		
Anticipated Funding Source	Category 9 - Enhancements		