

Future Transportation



SECTION 18 – FUTURE TRANSPORTATION

Purpose and Overview

The purpose of this section of the comprehensive plan for the City of Navasota is to provide for the future transportation needs of the City. This section of the document proposes short and long-term improvements to the road network to solve existing problems and to facilitate planned growth. To promote orderly development of the road network, a Thoroughfare Plan (Map 18.1) has been created. This plan considers existing land use conditions, proposed future land use, and projected population growth within the city to guide needed transportation system expansion. Some recommendations call for the construction of new streets while other underutilized streets could be reconfigured and converted to other roadway classifications. Safe and efficient mobility for the citizens of Navasota is the ultimate goal of this section.

Goals and Objectives

Goal #1: Maintain and upgrade the roadway infrastructure of the City of Navasota.

- Objective 1: The condition of the substandard roadways should be improved to have a minimum level of service "C".

Goal #2: Provide a safe route for heavy and hazardous vehicles passing through Navasota.

- Objective 1: Navasota should encourage the Texas Department of Transportation (TxDOT) to complete the proposed "South Loop" and "West Loop" as shown in the thoroughfare plan.
- Objective 2: The City should redesign the existing truck route from the residential areas of the City to the "South loop" and "West Loop" once they have been constructed.

Goal #3: Improve the traffic and parking conditions in and around Downtown Navasota.

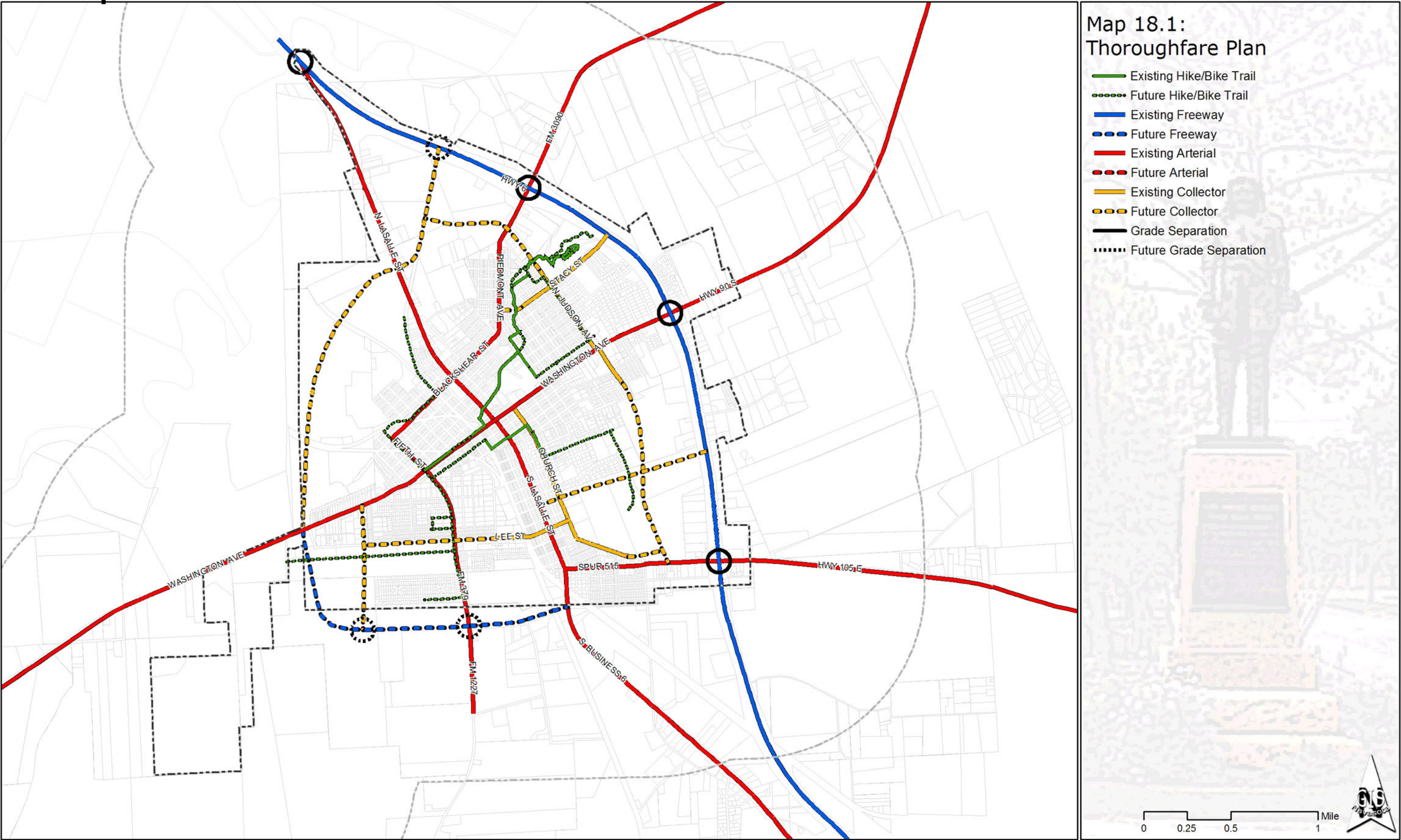
- Objective 1: Navasota should coordinate the traffic signals on Washington Avenue.
- Objective 2: The City should coordinate with TxDOT to improve the conditions of state owned and maintained streets and intersections.
- Objective 3: The intersection of Washington Avenue and LaSalle Street should be redesigned to reduce congestion and provide for a safer intersection.
- Objective 4: The alleyways between Washington Avenue and the Cedar Creek parking lot should be designated as one way.

Goal #4: Incorporate the use of access management into future developments.

- Objective 1: Navasota should connect the feeder road along the east side of Highway 6 between Washington Avenue and FM 3090.
- Objective 2: The City should incorporate means of access management to new developments and redevelopments to address future transportation problems.

Goal #5: Provide a transportation system that embraces the use of bicycles and walking.

- Objective 1: Navasota should encourage pedestrian activity in Downtown by adding sidewalks for new developments.
- Objective 2: The City should connect newly developed residential areas to nearby schools, parks, and commercial areas through sidewalks and bike lanes.
- Objective 3: Existing hike and bike trails should be marked with adequate signs.
- Objective 4: All new residential developments should be required to have sidewalks.



Goal #6: Provide for a safe and adequate airport.

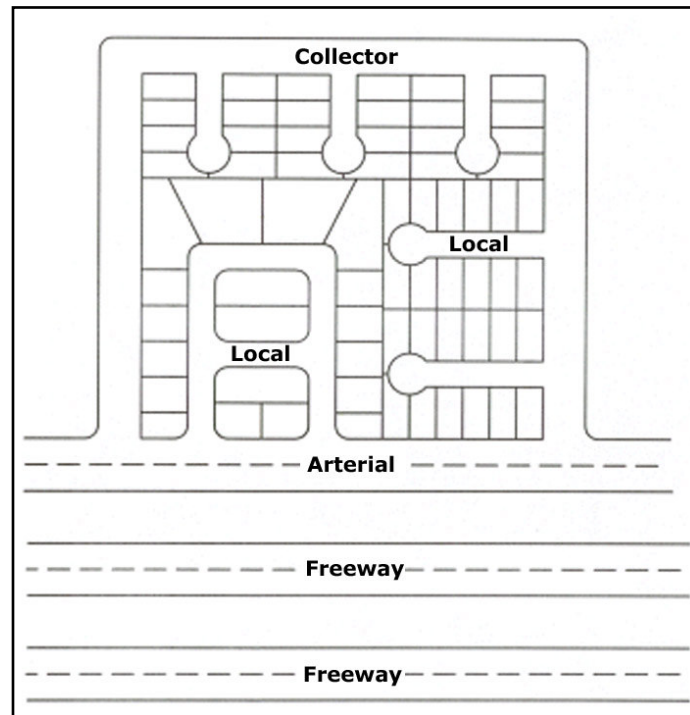
- Objective 1: Navasota should protect Federal Aviation Administration (FAA) -mandated safety areas, runway protection zones, and other clear areas to the maximum extent possible.
- Objective 2: Land uses should be restricted on lands adjacent to airport facilities through height restrictions, obstruction limits, and other zoning techniques.
- Objective 3: The City should ensure that Airport facilities meet all applicable standards.
- Objective 4: A meteorological facility should be constructed.
- Objective 5: Navasota should construct an airport terminal.
- Objective 6: The City should install sewer infrastructure to the airport in conjunction with future Industrial Park development.

- Objective 7: The Airport's Development Plan should be adopted.
- Objective 9: Navasota should attract a Fixed Based Operator (FBO).
- Objective 8: The adopted Airport Development Plan should be re-evaluated after 5 years.
- Objective 10: The City should ensure the Airport is reflected in local development and transportation plans.

Roadway Classifications

The transportation system for the City of Navasota has been divided into four separate categories: Freeways, Arterials, Collectors, and Local Streets, that form a hierarchy to provide for a safe, efficient and effective urban circulation system (Figure 18.1).

Figure 18.1: Functional Street Classification System



The Functional Street Classification System is used in urban planning to identify and analyze a city's street system on the basis of four street types. These include:

- Freeways
- Arterials
- Collector Streets
- Local Access Streets

Freeways

The intended purpose of Freeways is to move traffic efficiently and quickly. Freeways are grade-separated with multiple lanes and center lane divisions between oncoming traffic. They carry a large volume of non-local traffic to move people over long distances at high speeds. The typical speed range for Freeways is between 55 and 70 miles per hour. Access to and



Highway 6

from freeways is limited to major intersections.

Arterials

Arterials serve to provide movement between collector streets, freeways, and other arterials. They provide limited land access to minimize congestion while distributing traffic to collectors. Signalization should be provided at intersections with other arterials and collectors as warranted by traffic flows and safety concerns.

Collectors

The purpose of Collector Streets is to provide both access and efficient movement to move traffic between Local Streets and Arterials. Collectors provide access to adjacent uses at lower speeds than Arterials. Signalization should be provided at intersections with other Collectors and Arterials as warranted by traffic flows and safety concerns.

Local Streets

Local Streets provide direct access from adjacent land to Collector Streets. They provide the most access to residential and commercial uses for short distances at the lowest speeds. Local Streets should serve not only cars, but also make considerations for pedestrians and bicycles. In residential neighborhoods the provision for parked cars may provide slower traffic speeds and safer pedestrian access. Relatively narrow lanes can also be employed for traffic calming in residential developments. Through traffic should be discouraged, and heavy truck traffic should be directed away from these streets.

Functional Street Classification System for Navasota

The street system in Navasota was analyzed and classified as the following:

Freeway

- State Highway 6

Arterials

- Blackshear Street

- Farm to Market Road (FM) 1227
- Farm to Market Road (FM) 3090
- Fifth Street
- Highway 90 South
- North LaSalle Street
- South LaSalle Street
- Piedmont Avenue
- SPUR 515 (Highway 105 East)
- Washington Avenue (Highway 105 West)

Collectors

- Church Street
- Clayton Street
- Lee Street
- Montgomery Street
- North Judson Avenue
- South Judson Avenue
- Stacey Street



Navasota Streets

Local Street

- All other streets not mentioned are classified as Local Streets.

Recommended Roadway Design Standards

Roadway design standards are the principles and guidelines used to provide a basis for roadway construction. They are necessary to ensure that the network of streets will safely, efficiently and effectively serve the traveling public. Additionally, they allow for the orderly development of adjacent lands as well as the transportation network.

Level of Service "C"

The Highway Capacity Manual published by the Transportation Research Board (<http://www.trb.org>) categorizes roadway systems by their level of service. The level of service is based on maneuverability, delays, and speeds. As the volume and the number of signalized intersections increases, the level of service decreases. The City of Navasota should try to attain a level of service "C".

Alignment Characteristics

The safety and efficiency of a roadway system is highly affected by the road alignment characteristics. Some of these characteristics include speed, parking, curves or bends, and geometry. Some streets that require new alignment include the intersections of Montgomery Street and SPUR 515, and Washington Avenue and LaSalle Street.

Access Management

Access management provides for a means to manage, maintain, and transform access for land uses while simultaneously preserving traffic, safety, capacity, and speed on the road network now and in the years ahead. Access management also evaluates the suitability of a given site development from an access standpoint, while identifying the need to preserve through traffic. It addresses congestion, capacity loss, and accidents on roadways. Access management also helps to achieve a balance between traffic movement and access to land uses by carefully controlling the location, type, and design of access points and street intersections. The basic overall principles for access management are to minimize the access point conflicts and provide for a safer traveling environment.

Some alternative solutions for the City of Navasota to improve its access management would be to restrict the access regarding alleyways, and to connect the frontage roads along Highway 6. In addition, it is recommended that the City designate all alleyways between Washington Avenue and Cedar Creek be limited to one-way traffic. To facilitate future development and existing commercial uses, the incomplete frontage road of Highway 6 from Washington Avenue to FM 3090 should be constructed. This segment is the only access road within the city limits not yet

built. Communication between the City and TxDOT will be needed to address this problem to relieve the safety concerns of existing businesses using direct access to the Freeway.

Proposed Roadways and Extensions

Several new roadways and street extensions have been recommended for the City. These recommendations are displayed on the Thoroughfare Plan (Map 18.1). When development of these roadways cannot be accomplished through platting, the City should allocate resources for their timely construction. However, whenever development of land identified on the Thoroughfare Plan is proposed, the City should acquire as much land and/or fees as it may legally procure through the platting process.

The following are proposed roadways and extensions:

Stacey Street and Waco Street: The collectors identified would provide the City with an east/west collector north of Washington Avenue that connects Piedmont Avenue and Highway 6. The existing roadway travels west from Highway 6 frontage road ending just prior to intersecting with Piedmont Avenue. The proposal calls for extending Stacey Street across Cedar Creek to intersect with Piedmont Avenue. Existing educational facilities and residential uses will benefit from this extension.

Anderson Street Extension: Anderson Street currently runs from Farquhar Street to Church Street. The proposed extension is located eastward from Church Street in a direct line, just south of the residential area served by Gibbs Street, to Highway 6. The Anderson Street extension would provide the City with an east/west collector south of Washington Avenue. Future residential and mixed-uses will benefit greatly from this thoroughfare.

Clayton Street Extension: Clayton Street currently is located south from Highway 105 West to a dead end in a residential area on the west side of Navasota.

The proposed change would extend Clayton Street southward to intersect with the proposed South Loop, serving as a connection between future residential uses to employment centers in the south and throughout the City.

Lee Street Extension: The Lee Street Extension will provide the City with an east/west collector on the west side of South LaSalle Street. The roadway currently exists from Church Street to Malcolm Street. The Lee Street extension should be continued westward, utilizing the right-of-way just south of the residential area from Malcolm Street to Clayton Street. Future residential development will necessitate this access.

Montgomery Street Realignment: With projected increases in traffic, the existing intersection alignment of Montgomery Street and SPUR 515 causes safety concerns. The proposed realignment should have Montgomery Street veer east at any point past Baker Street and intersect with the proposed South Judson Avenue extension. The remaining pavement of the original alignment is to terminate prior to the existing intersection with SPUR 515.

Northern Collector: Another collector is proposed from North LaSalle east towards Highway 6. This proposed roadway would provide additional access and improve routing for emergency services between these two roadways. The proposed North LaSalle collector would begin at the proposed Western Collector / North LaSalle intersection and run east. If possible, it would then curve in a northeastern direction to utilize the existing unused right of way. The road would then follow along the right of way until it terminates at the frontage road of Highway 6. This expansion would require the construction of an overpass over Highway 6 to allow for maximum access to both Highway 6 and the North LaSalle collector. As discussed in the Navasota Economic Development Plan, portions of this road could be built in conjunction with redevelopment in the area. Several funding options for this road exist as discussed in that document.

North and South Judson Avenue Extension: The proposed roadway would extend Judson Avenue in northern and southern directions. The north and south extensions would act as collectors that parallel Highway 6 for local traffic. The northern extension would continue northward past Maple Drive and intersect with the proposed Northern Collector at its midpoint. The southern extension would extend south past Grimes Street and connect with SPUR 515 at the new Montgomery Street intersection.

South Loop: A southern loop is currently being proposed by the Texas Department of Transportation (TxDOT). The loop will begin at approximately Universal Street and South LaSalle Street (South Business 6). The southern loop will stretch westward outside the city limits, but within the ETJ, and will meet Highway 105 West at the right of way just west of Catherine Street. This expansion would require the construction of two overpasses for grade separation at: the southern loop and FM 379, and the intersection of the south loop and the proposed Clayton Street expansion.

Western Collector: Due to a lack of collector streets on the west side of Navasota, it is proposed that a new collector street be constructed. The western collector would extend north from the South Loop and Highway 105 West intersection until it meets North LaSalle Street just south of Wingard Road. The proposed roadway is within the city limits and would provide an alternative heavy truck route and provide access into proposed residential neighborhoods.

Additional Transportation

Transit Services

The City of Navasota currently is not at a level that requires a fixed route public transportation service. The current service provided by “The District” is sufficient for para-transit service. While current needs are being met, staff reevaluation and public involvement should be used to gauge demand and desire for a future increased level of service. The City should maintain current relations with The District to facilitate future services.

Rail Transportation

Recently, there has been interest in providing high-speed rail service as well as other services from the Houston area. It is suggested that the City remain involved and current with these proposals.

Air Transportation

With the City currently in the process of creating an Airport Development Plan, there are no additional plans presented here.



Navasota Airport

The following 10 year action agenda is suggested for implementation of this section of the Comprehensive Plan.

Action Agenda

Year 1

- Coordinate with TxDOT to time the traffic signals along Washington Avenue.
- Support TxDOT's proposal of the southern loop and communicate the recommended alignment as proposed in the City's Thoroughfare Plan.
- Identify the needs for curb and gutter installation on existing streets.

Year 3

- Improve the condition of substandard roadways to function at the minimum level of service "C".
- Coordinate with TxDOT in providing curbs and gutters on the remaining parts of Washington Avenue exiting Downtown towards the west.
- Begin construction on the Montgomery Street realignment and extension as development indicates.
- Begin to purchase right of way for the northern and southern Judson Avenue extensions.
- Begin working with TxDOT to connect the frontage road on the eastside of Highway 6 from Highway 90 to F.M. 3090.
- Begin installation of airport automated weather service.

Year 5

- Conduct public hearings with TxDOT on the proposed redesign of the Washington Avenue and LaSalle Street intersection.
- Begin to purchase the right of way for the North Collector as development indicates.
- Begin to purchase the right of way for Lee Street as development indicates.
- Conduct a new windshield transportation survey and update existing GIS data.

Year 7

- Begin work with TxDOT to initiate construction of the realignment of the Washington Avenue and LaSalle Street intersection.
- Begin to purchase the right of way for the Clayton Street extension as development indicates.
- Begin to purchase the right of way for the Anderson Street extension as development indicates.

Year 10

- Begin to purchase the right of way for the Western Collector as development indicates.
- Revise and update the Thoroughfare Plan in association with the revision of the Comprehensive Plan for Navasota.

Ongoing

- For all new road expansions, construction should coincide with actual proposed development.
- Refer to Thoroughfare Plan for all new construction and expansion.
- Information regarding transportation reviews and updates should be provided in an annual report.

Sources:

Transit information came from Brazos Transit District.

Stover, Virgil G., Koepke, Frank J., Transportation & Land Development, 2nd Edition. Institute of Transportation Engineers. Printed in the U.S. 2002.

Transportation Research Board. (2000). Highway Capacity Manual. Transportation Research Board of the National Academies. Released December of 2000. National Academy of Sciences. Printed in the U.S. 2000.

Washington State Department of Transportation, Aviation Division (Revised 1999). "Airports and Compatible Land Use: Volume 1" Retrieved February 7, 2004 from Washington State Department of Transportation, Aviation Division website: <http://www.wsdot.wa.gov/Aviation/planning/AirportsLandUse.pdf>.

For further examples and guidelines, please refer to the *TxDOT Access Management Manual* Online at: <http://manuals.dot.state.tx.us/dynaweb/coldesig/acm>.