Matagorda County Transit Plan

DRAFT

Presented by: The Goodman Corporation

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Executive Summary

Introduction

In February 2010, the Houston-Galveston Area Council (H-GAC) contracted with The Goodman Corporation (TGC) to complete a Transit Service and Coordination Plan for Matagorda County. The purpose of the plan is to identify transit needs and service gaps in Matagorda County and develop an operations and five-year financial plan. The transit needs for Matagorda County are varied, extending from demand response service for rural areas and small municipalities, to fixed or flex service for Bay City, to job access options for workers and students.

Plan Inputs

The process used to provide transit recommendations for Matagorda County relied on public input, government data, and best practices. See Figure ES.1 for an illustration of the inputs used to develop the plan's recommendations. Each of these are briefly discussed below.

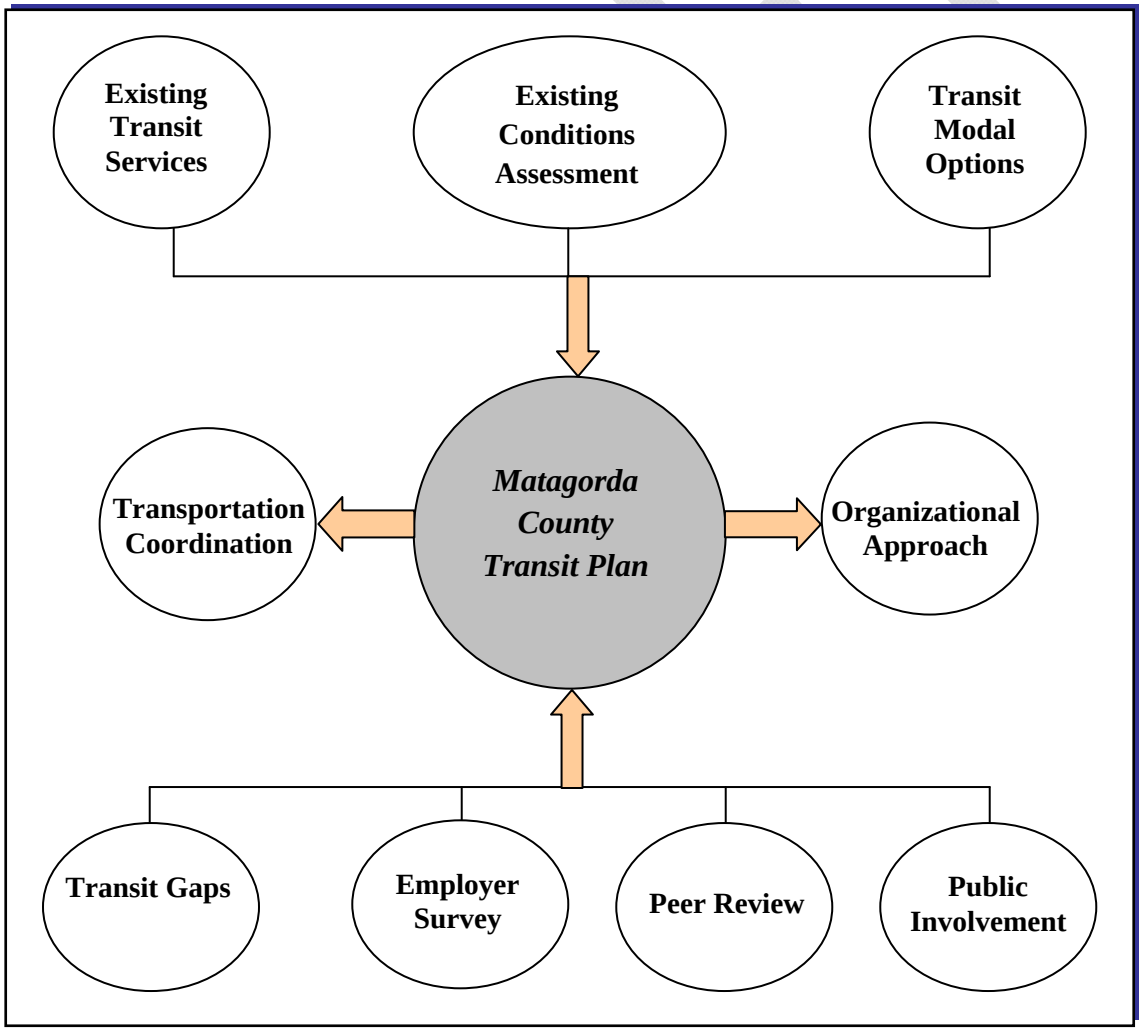

Figure ES.1 – Matagorda County Transit Plan Considerations

Existing Transit Providers: Friends of Elder Citizens (FOEC) is a 501c(3) nonprofit that delivers demand response transit services to the general public under a contract with the Golden Crescent Regional Planning Commission (GCRPC). The FOEC's primarily mission is to provide services to senior citizens and the elderly and it views its transit program as a mechanism to help achieve that mission. Given that, the FOEC's interest in expanding its transit role in Matagorda County is limited.

In FY2009, the FOEC's transit program cost approximately $273,000. The FOEC funds its services with federal and state grant funding that it receives through the GCRPC; however, these funds are insufficient to fully support the program. It supplements these funds with revenue it earns through its Medical Transportation Program (Medicaid) sub-contract and other local sources. Should the FOEC either not renew or lose its Medicaid sub-contract, its loss will create a significant need for other sources of local share. In addition, the FOEC has indicated that it will cease providing general public transit should it no longer hold a Medicaid contract.

The Medicaid sub-contract is particularly important as it represents over 50 percent of the FOEC's funding for transit. Moreover, it generates some over-match that present the opportunity to expand transit programs to fill the service gap. In FY2009, the FOEC generated about $67,000 in excess revenues. The plan recommends that, with FOEC concurrence, a portion of these revenues be re-invested into a voucher program. A voucher program will leverage other transportation assets in the county and provide a secondary source of transit for hard-to-service trips.

It is recommended that the FOEC continue providing demand response service to the County. The FOEC reflects above average performance statistics compared to other demand response providers in the region. However, there is a concern that general public trips have fallen 50 percent over the past three years, while the number of Medicaid and contract trips has risen substantially. Future focus on delivery of more general public trips is needed. This can be supported, in part, by bringing more resources to the program. However, this should be coupled with more aggressive and consistent marketing and promotion of FOEC's general public transit services with a goal to increase general transit trips.

Existing Conditions Assessment: The majority of Matagorda County's land mass is characterized as low-density rural. However, most of the population is located within the small municipality of Bay City. These characteristics, coupled with demographic characteristics for age, disability, and income, paint a picture of substantial transit need. This need was further reinforced during four public meetings and within a general public survey in which County residents expressed their frustrations at the lack of options and their hopes that more services will be developed in the future.

Transit Gaps: Matagorda County is clearly under-served for transit. A quick rule-of-thumb to measure the level of service is trips per capita, or how many transit trips are being provided

given the area's the population. Compared to regional peers, there is a gap of about 20,000 trips annually – this is almost double the 29,000 currently be provided. If service delivery were compared to all rural providers (referred to as 5311 Texas Providers in the table below), the gap expands dramatically to 140,000 trips. (See Table ES.2, Matagorda County, Unlinked Trips per Capita below.)

Table ES.2: Matagorda County, Unlinked Trips per Capita

	FY2007	FY2008
FOEC	0.80	0.96
Peer/Regional Transit Providers	1.12	1.44
All 5311 Texas Providers	4.09	4.45
Additional trips if were to deliver at level of peer providers	11,753	17,649
Additional trips if were to deliver at level of Texas providers	114,838	140,455

A transit gap was defined for work-related trips. The U.S. Census Journey-to-Work data was used to measure the transit gap for work trips. In peer regions, transit agencies provide between 0.5 percent and 1.66 percent of all work trips. Using these averages to estimate low and average demand and 3 percent for high demand, the work-related transit gap is as follows:

Table ES.3: Work-Related Transit Gap

Modal Split	Riders	Estimated Annual Trips
Low or 0.5 percent	74	37,000
Medium or 1.50 percent	221	110,500
High or 3.00 percent	443	221,430

Transit Modes: Matagorda County's commitment to providing transportation includes an understanding among decision-makers that many traditional transit options are likely not cost-effective and service options may need to be redefined to better suit low density communities. For example, traditional fixed route may not meet many passenger mobility and accessibility needs because of the infeasibility of locating stops close enough to home – a service attribute that was cited as important among respondents to the General Public survey. Similarly, some decision-makers may feel that traditional demand response costs too much for the number of trips provided. The challenge for any community is finding the right balance between cost and quality of service.

The Matagorda County Transit Plan includes a general review of transit modes (Chapter 5) and then an application of appropriate modes to Matagorda County, using a low, medium, and high-level investment approach (Chapter 6). The transit modes reviewed include:

- *Demand Response:* As mentioned, demand response service works well in low density, rural areas, or where other transit alternatives are impractical. Similar to a taxi, service is provided "curb-to-curb." In contrast to taxi service, rides are often shared to transport as many people as possible, advance reservations are required and riders may expect to negotiate a pick-up time that both serves their needs and the need of the transit service to meet the requests of other riders.

  Application to Matagorda County: Driven primarily by low population density, demand response will continue as the primary service mode for the majority of the county. Most trips can be well served under contract by existing or similar providers. The addition of private carriers, like taxis, can provide an additional element of service not currently available. Typically referred to as a voucher program or user-side subsidy, the program helps to subsidize the cost of difficult-to-serve trips (e.g. after hour trips) for riders who are eligible through their affiliation with participating health-and-human service agencies. This program will require coordination and management of the program, and the participation by health and human services agencies, and private taxi companies.

- *Fixed Route:* When many individuals think of transit, fixed-route is frequently what comes to mind. Where appropriate, fixed-route bus service can be an effective and efficient means of providing transportation to meet a broad range of mobility needs; however, fixed route works best in communities of sufficient size and density.

  Fixed route buses travel along predefined paths and stops, while adhering to a specific schedule. The Federal Transit Administration (FTA) requires that a complementary Americans with Disabilities Act (ADA) para-transit service be provided to qualified individuals who are unable to use the fixed route system, which can add to the cost of operations.[1]

  Application to Matagorda County: Based on survey responses, journey-to-work data, and demographic characteristics, Bay City reflects the minimal requirements for a limited daily fixed route service. Demand is likely to peak during the morning and evening commute and the schedule should initially be limited to these high-demand periods.

[1] ADA Para-transit: Agencies providing fixed route service have been required since 1990 by the American with Disabilities Act (ADA) to provide equal access to transit services for persons with disabilities. The ADA complementary para-transit service is required when individuals are unable to use the fixed route service as a result of a disability. Developing a fixed route bus service means that ADA complementary para-transit needs to be provided within 3/4 mile of the bus route and has strict requirements regarding service levels that result in ADA complementary para-transit being more costly and less flexible than other demand response type services. Therefore, when adding new fixed route service, it is necessary to consider the additional cost of the ADA complementary para-transit service must be considered. Flex route and commuter services are exempt from the ADA requirement as long as they meet the definition of such service.

General public survey respondents indicated that limited fixed *schedules* between Bay City and Palacios would be used on a weekly or monthly basis. The plan recommends that this connector service be provided by the FOEC through its existing resources.

- *Flex Route:* Flex route service combines the strengths of fixed-route service and demand-response service. The concept behind flexible routing is the provision of regular fixed-route service, with the flexibility of demand response to pick up and drop off ADA-eligible passengers at their origins and destinations. Typically, flex route service has regular stops along its path, but time is added to the schedule for the vehicle to deviate off route to points within the immediate vicinity (normally up to 3/4 mile) to pick up or drop off passengers. Lastly, deviations may be limited to only eligible individuals who are qualified through partnering health and human services agencies.

  Application to Matagorda County: A flex route service is appropriate for Bay City; however if a provider is unavailable to operate flex route for Matagorda County, then the county may be prevented from exercising this option, unless it chooses to provide transit services in-house and it hires and trains for this capability. Flex route does not require ADA complementary para-transit service which makes the service more cost-effective.

- *Commuter Options/Van Pools and Car Pools:* The Matagorda County Stakeholder Review Committee expressed a strong interest in the establishment of van pool services for employers like STP, which is anticipating a large-scale construction project within five years that will employ between 5,000 and 6,500 additional workers. As of the writing of this report, the STP has indicated that it will contact the Bay City Chamber of Commerce if it is interested in partnering to provide these services. If it chooses not to partner, the STP may choose to provide transportation solely on its own. For example, a similarly large project was constructed in Alexandria, Louisiana, by Flur Construction. In Alexandria, Flur established park and ride lots on the periphery of the site (5 to 6 miles away) and bused its employees from these sites. The parish and local community did not financially participate in this service.

  Application to Matagorda County: Van or bus pools to the county's other large industrial manufacturing and energy employers may be viable. However, there was a weak response from most of these employers to survey requests, and was administered only by two employers, Celanese and OXEA. The results indicate that between 35 and 43 individuals are interested in van pool or park-and-ride services. OXEA employs about 140 people and Celanese employs about 45 people. So this represents interest on behalf of approximately 23 percent of the workforce. Assuming that this response level is representative of what the response would be at other facilities, there is sufficient demand for van pool or park-and-ride services. The plan recommends that local stakeholders

continue to work with industrial employers to gain support and buy-in for van pool options. In addition, low- or no-cost options like carpooling are recommended.

Service Plan Recommendations

Service options are reviewed in Chapter 6, where low, middle, and high investment options are presented for each service type. Chapter 7 reflects the recommendations stemming from these options. The section below outlines theses recommendations, the estimated cost, and sources of funding.

Demand Response

Recommendation: Provide additional vehicle and driver for operation by FOEC. Purchase additional vehicle. Provide regularly scheduled weekly connector service between Palacios and Bay City with future expansion to the cities of Matagorda and Sargent.

Description: An additional vehicle and driver will address some of the unmet demand for trips and allow greater capacity for other services, such as the Bay City/Palacios Connector. Additional marketing and promotion of the demand response by the FOEC and county partners is needed to expand awareness of this existing service to the public and to increase the return on the investment in additional services.

Table ES.4: Demand Response with Additional Vehicle and Driver	
Gross Operating Cost	$360,000
Less Fares	$11,500
Net Operating Cost	$348,500
Eligible Federal Share	$174,250
Eligible Local Share	$174,250
Capital Cost for Additional Vehicle	$50,000
Eligible Federal Share	$40,000
Eligible Local Share	$10,000

Funding Sources: This recommendation reflects the medium-level investment. It is assumed that fare box recovery will continue at historical levels, approximately $1.00 per trip. Fares are calculated based on average trips per revenue hour, or 3 trips per hour. Eligible federal and local

share is based on service provision by a public transit provider and does not take advantage of Capital Cost of Contracting.[2]

Federal and state sources of funding that can be used to support these services include Federal Section 5311 Rural Area Formula funding, State Public Transit Trust Funds, and Section 5310 Elderly and Disabled (Section 5311 is more restricted in its eligible uses. In Matagorda County, it has typically been applied toward the purchase of vehicle or preventative maintenance.)

Recommendation: Develop user side subsidy/voucher program for after-hour and other difficult-to-serve trips. Purchase wheelchair equipped vehicle for use by private taxi provider for user side subsidy/voucher program. Apply for Section 5316 Job Access Reverse Commute (JARC), Section 5317 New Freedom or Section 5310 Elderly and Disabled funds to support federally eligible portion of the program.

Description: This element of the plan will provide transit services to eligible riders; depending on the funding source this can include people with mobility disabilities, the elderly, and/or low income workers and job-seekers. The program will provide another transit option for difficult-to-serve trips that cannot be met by the FOEC.

Table ES.5: Voucher Program	
Gross Operating Cost	To be determined by Funding Made Available. Depending on funding source, up to 10% of the program cost can be requested for administrative expenses.
Less Fares	Estimate that Fare box recovery is 10%
Net Operating Cost	NA
Eligible Federal Share	50 percent
Eligible Local Share	50 percent
Capital Cost of Wheelchair-Equipped Vehicle for Private Provider	$50,000
Eligible Federal Share	$40,000
Eligible Local Share	$10,000

The gross operating cost can be scaled to available funding. Under some funding programs, up to 10 percent of the program's cost can be applied to administrative costs. For larger programs, administrative costs represent about 25 percent of the budget; however small efforts have been managed with fewer resources. In some programs, fare box can recover about 35 percent of the cost of service.

[2] Capital Cost of Contracting allows for a higher rate of federal reimbursement if private resources are used to deliver the service.

Voucher programs reimburse at the operating rate of 50 percent federal share and 50 percent local share. Federal funding resources that can be used to support operations include Section 5311 Rural Area Formula Funding; Section 5316 Job Access Reverse Commute (JARC); Section 5317 New Freedom, and Section 5310 Elderly and Disabled.

Programs using JARC funding must support job-related trips. The funds either support trips made by individuals with limited income to employment or employment-related activities, such as education and training programs, or trips travelling from urban to suburban or rural areas. New Freedom funds will support activities that expand ADA services, including voucher programs for transportation services offered by human service providers for individuals with disabilities. Section 5310 Elderly and Disabled provides funding for transportation services for the elderly or people with disabilities. Voucher programs are an eligible expense in this program.

Local funds, including contract revenue, can be used as local match for the program. Non-Department of Transportation funding is eligible as local match. This includes TANF and WIA funds. Local share can also be provided by in-kind donation, such as time spent by staff of partnering agencies to determine eligibility.

Fixed Route/Flex Route

Recommendation: Provide peak period, flexible route service, Monday through Friday. The recommended route provides easy transfers which pulses every 20 minutes at the intersection of SH60 and SH35. See Figure ES.1: Fixed Route Bay City below.

Description: The fixed route combines a North/South and East/West Loop that pulses at the interchange of SH35 and SH60. It is a peak period service that targets workers, with morning and late afternoon service, typically 6:30 am to 9:30 am and 3:30 pm to 6:30 pm. The estimated fare is $1.00 per trip. Initially, ridership is estimated at 5 passengers per hour but this is expected to increase as the service matures.

Given Bay City's density, a flex system is preferred over a fixed route system. The route has good connectivity to retail, health and human services and civic offices. However, it does not penetrate into the city's neighborhoods, which may make the system unattractive or difficult to use for some potential riders. If flex service is not an option, changes to the route to connect with higher need neighborhoods or more densely populated areas is needed. Chapter 6, Service Options, provides an alternative route that addresses these issues.

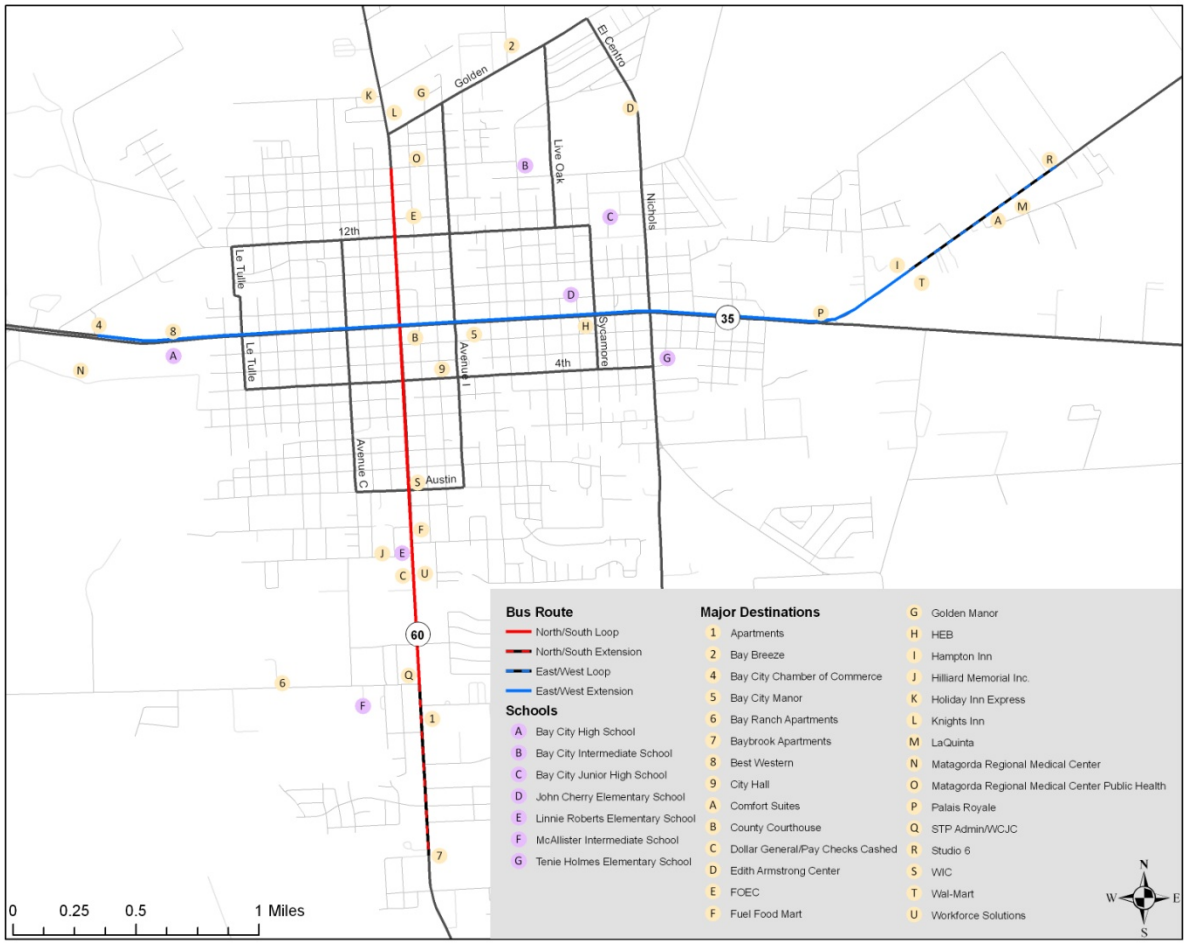

Figure ES.1: Fixed Route Bay City

Funding: The program is eligible for support by the Section 5311 Rural Formula Funding and Section 5316 JARC program. The cost of the program assumes a $60 per hour operating cost and an average fare of $1.00 per trip. Fares reflect an estimated 5 trips per hour, a conservative estimate and reflecting initial performance of the service. Higher ridership, upwards of 10 passengers an hour, is typical for more mature small urban systems.

Table ES.6: Fixed/Flex Route	
Gross Operating Cost	$180,000
Less Fares	$15,000
Net Operating Cost	$165,000
Eligible Federal Share	$82,500
Eligible Local Share	$82,500
Capital Cost for 2 Additional Vehicles and 1 Spare	$150,000
Eligible Federal Share	$120,000
Eligible Local Share	$30,000

Because the FOEC has not expressed an interest in operating fixed route, the opportunity is absent to leverage any potential local over-match as represented by contract income. Consequently, the need to provide local support through other avenues is critical. Support by the city, the county, the economic development corporation, as well as creative capture of in-kind value which may be available is needed.

Commuter Services

Recommendation: The low level of interest displayed by most employers and the knowledge that transit services for employees working on large-scale construction projects have been provided privately in other areas, leads to a recommendation that stakeholders continue to work with industrial employers to develop commuter services options. This includes: promotion of car pooling (a low- to no-cost option); and the development of van pool services.

Description: Options include the low- to no-cost car pool management by private firms, employee-driven van pools with purchase of vehicle using public funds, or a turn-key lease by private contractors through a transit agency. Each of these options requires a lower level of daily management from the transit agency compared to services provided directly by the transit agency.

Table ES.7: Commuter Service	
CAR POOL	
Gross Operating Cost	No cost for employees but must be associated with an affiliated organization. Organizations can become affiliated at a low- or no-cost.
Less Fares	No fares are charged.
Eligible Federal Share	NA
Eligible Local Share	NA
VAN POOL – Turn Key Lease through Private Firm	
Gross Operating Cost	$20,000 (lease, fuel, admin)
Less Fares	$5,250 (7 people, 250 days, $3.00 round trip)
Net Operating Cost	$14,750
Eligible Federal Share	$10,375 (Using Capital Cost of Contracting)
Eligible Local Share	$4,375 (Using Capital Cost of Contracting)

Funding: Funding sources that can be used to support van pools include Section 5316 JARC. It is recommended that any van pool leases are managed through a private firm which will contract with the public transit agency. This will allow the transit agency to support the program using federal funds and Capital Cost of Contracting (CCC). CCC will allow a reimbursement of some expenses at the higher capital rate of 80 percent. It is recommended that the local share be provided by the employers.

Budget and Implementation

Table ES.8, Matagorda County Transit Plan Federal and Local Share, reflects for a five-year snapshot of federal and local share for the recommended transit services. Services are implemented over a five-year period to allow stakeholders to gain support and financial commitments for the expansion. Financial resources to support each program recommendation are listed in the Service Recommendation section above and outlined in more detail in Chapter 8: Finance Plan.

Table ES.8: Matagorda County Transit Plan Federal and Local Share

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Gross Op						
DR	$ 270,000	$ 360,000	$ 370,800	$ 381,924	$ 393,382	$ 405,183
Voucher	$ -	$ -	$ 30,000	$ 30,000	$ 30,000	$ 35,000
Fix/Flex	$ -	$ -	$ -	$ 180,000	$ 185,400	$ 190,962
Van Pool	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000
Total	$ 270,000	$ 360,000	$ 400,800	$ 591,924	$ 628,782	$ 651,145
Fares						
DR	$ 9,500	$ 11,500	$ 12,000	$ 12,500	$ 13,000	$ 13,500
Voucher	$ -	$ -	$ 3,000	$ 3,000	$ 3,000	$ 3,500
Fix/Flex	$ -	$ -	$ -	$ 15,000	$ 18,000	$ 21,000
Van Pool	$ -	$ -	$ -	$ -	$ 5,250	$ 5,250
Total	$ 9,500	$ 11,500	$ 15,000	$ 30,500	$ 39,250	$ 43,250
Net Op						
DR	$ 260,500	$ 348,500	$ 358,800	$ 369,424	$ 380,382	$ 391,683
Voucher	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	$ 31,500
Fix/Flex	$ -	$ -	$ -	$ 165,000	$ 167,400	$ 169,962
Van Pool	$ -	$ -	$ -	$ -	$ 14,750	$ 14,750
Total	$ 260,500	$ 348,500	$ 385,800	$ 561,424	$ 589,532	$ 607,895
Fed Sh.	$ 130,250	$ 174,250	$ 192,900	$ 280,712	$ 297,766	$ 306,198
Local Sh.	$ 130,250	$ 174,250	$ 192,900	$ 280,712	$ 291,766	$ 300,198

Transit Agency Choice

Matagorda County is in a unique situation. It is located within the Houston-Galveston Area Council (H-GAC) planning area but it receives service from the GCRPC. This mis-alignment creates a challenge when coordinating the planning of services between the two entities. This study looked at the advantages/disadvantages of migrating service to a new provider. TGC asked each adjacent transit provider its interest in providing services to the county. From these

discussions, the migration of transit service from the GCRPC to the Gulf Coast Center/Connect Transit was recommended. This change is recommended for three reasons.

- First, it will facilitate the delivery of fixed or flex route service. In discussions with FOEC, it indicated that it did not have an interest in expanding its services to include fixed route. Discussions with GCRPC indicated a low level of interest in providing these services as well. However, the Gulf Coast Center/Connect Transit indicated that there is interest if there is sufficient funding to support operations.

- Second, the transfer may support future directly-operated transit services. The FOEC has indicated that it considers its provision of transit service as secondary to its core mission to serve the elderly. Furthermore, the FOEC has also indicated that it will likely cease to provide general public transit services should it no longer hold a Medicaid transportation contract. An agency, like Gulf Coast Center/Connect Transit which directly operates demand response service, is in a better position to fill FOEC's role should that become a need.

- Lastly, the transfer will align Matagorda County's planning area with its service area. As mentioned previously, this alignment can help ensure that plans, goals, and programs which are within H-GAC's program benefit Matagorda County.

This recommendation does not come without its criticisms. As a rural county, Matagorda County's is concerned that its issues may be overwhelmed by large urban counties, like Harris County, within H-GAC. Furthermore, the county is pleased with its relationship with the GCRPC and wants to maintain its benefits. For example, Matagorda County would like to see the JARC services continue from Bay City, Blessing, and Palacios to the Inteplast facility.

Conclusion

At the beginning of the planning process, the Matagorda County Stakeholder Committee stated the following goals for the plan: 1) make people's lives better; 2) get people to jobs; and 3) relieve congestion. A long-term goal is to attract and retain new residents for the county through the provision of needed services, like transit.

The Matagorda County Transit Plan addresses Goals 1 and 2 by providing framework for implementing a variety of services over a five year period. The third goal, relieve congestion, relates to the provision of transit services for employees of industrial plants that will experience large-scale construction within 5 years. As part of this study, these industrial employers were contacted; however, as of this report, they have not indicated an interest in future transit services.

Beyond these goals, the Matagorda Transit Plan attempts to accomplish the following:

- Increase transit capacity of the FOEC to deliver more general public trips: The plan recognizes the opportunity and the challenge created when the transit provider is also the Medicaid contractor. The contract generates much needed local revenue; however, its demands can stretch an agency to the point where general public transit suffers. The Matagorda County Transit Plan recommends that the FOEC focus new demand response resources to improve general transit provision to previous years' levels.

- Prepare for a more diverse pool of transit providers: The GCRPC has successfully used a model of sub-contracting with the FOEC within Matagorda County. However, the FOEC has indicated that its provision of transit services is secondary to its primary mission to serve the elderly. It has also indicated that, should it lose its Medicaid contract, it will no longer pursue future contracts for general public transit. These two conditions create a need to develop alternative capacity for the county. One strategy is to enable private providers through a limited voucher program. The voucher program will be focused on hard-to-serve trips that are not currently being met. Another strategy is to migrate the transit agency responsibility from the GCRPC to Gulf Coast Center/Connect Transit, which directly operates the majority of its services. This switch in transit agencies will facilitate the direct provision of fixed/flex services in Bay City and better position the county for future demand response services, should the FOEC ceases its transit operations.

- Increase the pool of interested stakeholders: The Matagorda County Transit Plan is implemented over a five year period. This will allow interested stakeholders the time to develop partnerships and support for these transit initiatives.

Chapter 1: Introduction

Background

In February 2010, the Houston-Galveston Area Council (H-GAC) contracted with The Goodman Corporation (TGC) to complete a Transit Service and Coordination Plan for Matagorda County. The purpose of the plan is to identify transit needs and service gaps in Matagorda County and develop an operations and five-year financial plan. The transit needs for Matagorda County are varied, extending from demand response service for rural areas and small municipalities, to fixed or flex service for Bay City, to job access services for workers and students.

Project Oversight

The planning effort was overseen by a stakeholder review committee composed of the following individuals and organizations: Mitch Thames, President and CEO of the Bay City Chamber of Commerce and Agriculture; D.C. Dunham, Executive Director of the Bay City Community Development Corporation; Richard Knapik, Mayor of Bay City; Joe Morton, Mayor of Palacios, Nate McDonald, Judge Matagorda County; Owen Bludau, Executive Director of Matagorda County Economic Development Corporation; Lisa Cortinas, Transportation Director for the Golden Crescent Regional Planning Commission; Julia Gonzales, Executive Director of the Matagorda County United Way; and Carolyn Thames, Workforce Solutions of Matagorda County. The committee also included Houston-Galveston Area Council staff Kari Hackett and Lydia Abebe and Texas Department of Transportation Public Transportation Coordinator Wanda Dyer-Carter.

Study Goals

The stakeholder committee's stated goals for the plan are to: 1) make people's lives better; 2) get people to jobs; and 3) relieve congestion. A long-term goal is to attract and retain new residents for the county through the provision of needed services, like transit.

Previous Studies

Previous studies were reviewed at the outset of this study for previously identified issues. Three studies were reviewed, the 2006 Gulf Coast Region Coordinated Regional Plan, the 2006 Golden Crescent Regional Plan, and the 2008-2009 Matagorda County Community Plan.

Regional Coordinated Plans: The transportation needs of Matagorda County were reviewed in the 2006 Gulf Coast Region Coordinated Regional Plan. In 2003, the Texas Legislature directed the state's transit and health and human service agencies to coordinate the delivery of transportation services with the adoption of Section 461:003 of the Transportation Code:

Public transportation services are provided in this state by many different entities, both public and private. The multiplicity of public transportation providers and services, coupled with a lack

of coordination between state oversight agencies, has generated inefficiencies, overlaps in service, and confusion for consumers. It is the intent of this chapter:

- To eliminate waste in the provision of public transportation services;
- To generate efficiencies that will permit increased levels of service; and
- To further the state's efforts to reduce air pollution.

This is further defined in Public Transportation Code, Section 461.004(a):

The plan shall consider and address separately:

- Overlaps and gaps in the provision of public transportation services;
- Underused equipment owned by public transportation providers; and
- Inefficiencies in the provision of public transportation services.

The Texas Department of Transportation (TxDOT), in response to this legislation, began a coordinated regional planning process. All transportation agencies and health and human service providers were requested to work together under the umbrella of their council of governments, a regional organization of counties, cities, and special districts. Matagorda County is within the Houston-Galveston Area Council and was included in that planning effort, which resulted in the 2006 Gulf Coast Region Coordinated Regional Public Transportation Plan. Specific recommendations made in that plan for Matagorda County included a more active planning role by the H-GAC; a work shuttle to link Matagorda County residents to Brazoria County employment; and more public information about the existing transit services. Specific comments reflected a concern about the lack of information on transit service and providers within the county, confusion about eligibility for service, and limited service hours that make it difficult to meet the needs of workers.

Despite its inclusion in the H-GAC planning area, the provision of transit service to Matagorda County is managed from RTransit, the transportation division of the Golden Crescent Regional Planning Commission (GCRPC). Because it is not in GCRPC's planning region, Matagorda County received little attention within the GCRPC's Regional Coordinated Transportation Plan. Where Matagorda County was mentioned in GCRPC's report, it was within the context of a change to the Medicaid contract which required the RTransit's contractor for the county, Friends of Elder Citizens (FOEC), to contract with American Medical Response (AMR) instead of RTransit.

This change in prime contractors from RTransit to AMR presented a barrier to coordination because RTransit was responsible for general public transit services for the county, but it no longer managed one of the largest pools of transit demand, Medicaid trips.

Matagorda County Plan 2008-2009: Formerly known as the Matagorda County Criminal Justice Community Plan, this report identifies gaps in criminal justice services. Transportation is listed as a General Public Safety Need and Issue. It is specifically cited as a need by the Matagorda County Women's Crisis Center (ranking 8th out of 13th issues facing Victim Service providers):

> Public transportation is limited in Matagorda County. RTransit provides transportation primarily to Medicare recipients and the elderly. Appointments must be made 24-72 hours in advance. In a community wide need assessment 2002 survey done by United Way, 36% of respondents reported lack of transportation a major problem.
>
> Crime victims that lack transportation have had their access to service providers, social services, medical care, courts, the workplace, daycare and schools restricted due to lack of public transportation. Victims of domestic violence are often forced to leave their homes and possessions behind when they leave their abusive relationships. Without public transportation, victims have difficulty finding transportation to appear in court proceedings or take care of everyday tasks. These shortages result in staff from agencies such as the Crisis Center to provide transportation to victims.

Report Organization

This report outlines the Matagorda County Transit Service Plan. The following information is included in the report:

- Chapter 2, Existing Conditions: Describes the existing conditions of the county, including the study area, demographics and economy, and its impact on transit demand.
- Chapter 3, Transit Providers: Outlines the transit providers surrounding Matagorda County and serving Matagorda County directly. The information includes the background, organization, types of service, technology used, challenges, and other pertinent information about the organization.
- Chapter 4, Transit Need and Service Gaps: Describes the transit need and service gaps of demand response, job and education access, and fixed/flex route in Matagorda County.
- Chapter 5, Service Plans: Provides a description of demand response, job access, education and fixed/flex route transit service.
- Chapter 6, The Goodman Corporation Recommendation: Outlines a preferred transit plan recommendation.
- Appendix A, Funding Resources: Outlines various funding resources that may be available for Matagorda County.

Chapter 2: Existing Conditions

This chapter provides an outline of the existing conditions of Matagorda County. Included is a brief overview of the study area with its major thoroughfares. The demographics, economy and major employers of the county are also discussed.

Study Area

Matagorda County is located on the Texas coast, approximately 80 miles southwest of Houston. It is bordered by Wharton County to the north, Jackson County to the west, and Brazoria County to the east (See Figure 2.1: Location of Matagorda County). The U.S. Census Bureau reports that Matagorda County is 1,612 square miles; 1,114 miles is land and 498 square miles is water.[1] Matagorda County is also home to an important Texas estuary, Matagorda Bay, where the Colorado River empties into the Gulf of Mexico.

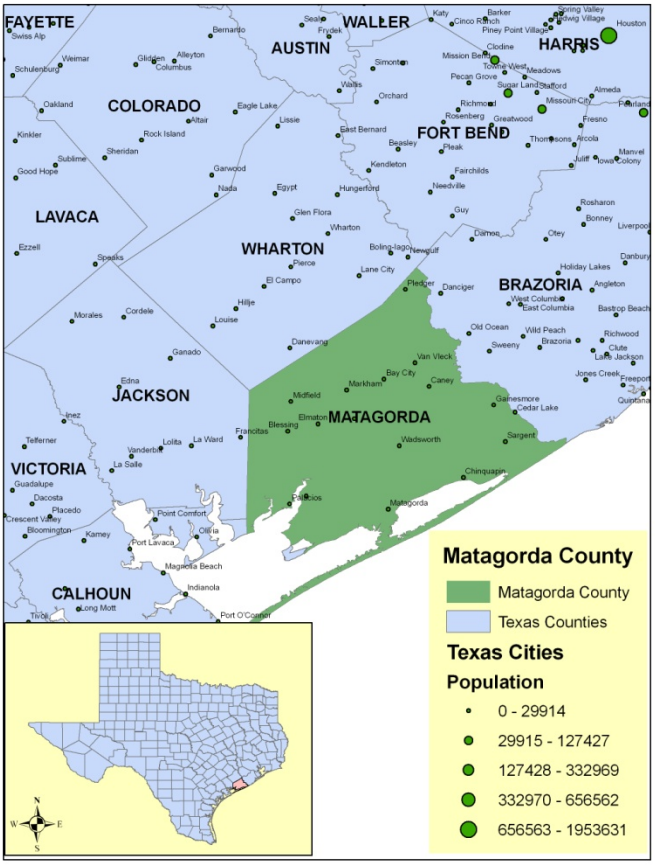

Figure 2.1: Location of Matagorda County

Matagorda County has a rich history. It first became a county under the Mexican rule in 1834 and later became a Texas county in 1836. The county's economy was primarily based on agricultural crops until devastated by pests in the late 1800's. This led to the cattle industry gaining greater presence of the county. In the 1960's and later, industrial complexes, particularly the energy and petrochemical sectors, were constructed in the county, which led to today's economic mix of agriculture, cattle, and industry.

Matagorda County has four major thoroughfares. State Highway 60 is a north-south corridor connecting the cities of Wharton, Bay City and Matagorda. State Highway 60 connects Bay City with major industrial employers south and southwest of the city. State Highway 71 connects the western half of the county with Palacios. State Highway 35 is the east/west corridor connecting

[1] America Factfinder, US Census Bureau, 1/10/2010

Matagorda County with the Angleton, Lake Jackson and Freeport areas. State Highway 111 connects Bay City with Edna via US Highway 59, in Victoria.

Matagorda County is served by two major railroad companies, Union Pacific/Southern Pacific and Burlington Northern/Santa Fe. Union Pacific/Southern Pacific serves the east/west rail corridor, while Burlington Northern/Santa Fe serves the north/south corridor. Both of the rail lines intersect in Bay City

See Figure 2.2: Matagorda County Major Thoroughfares.

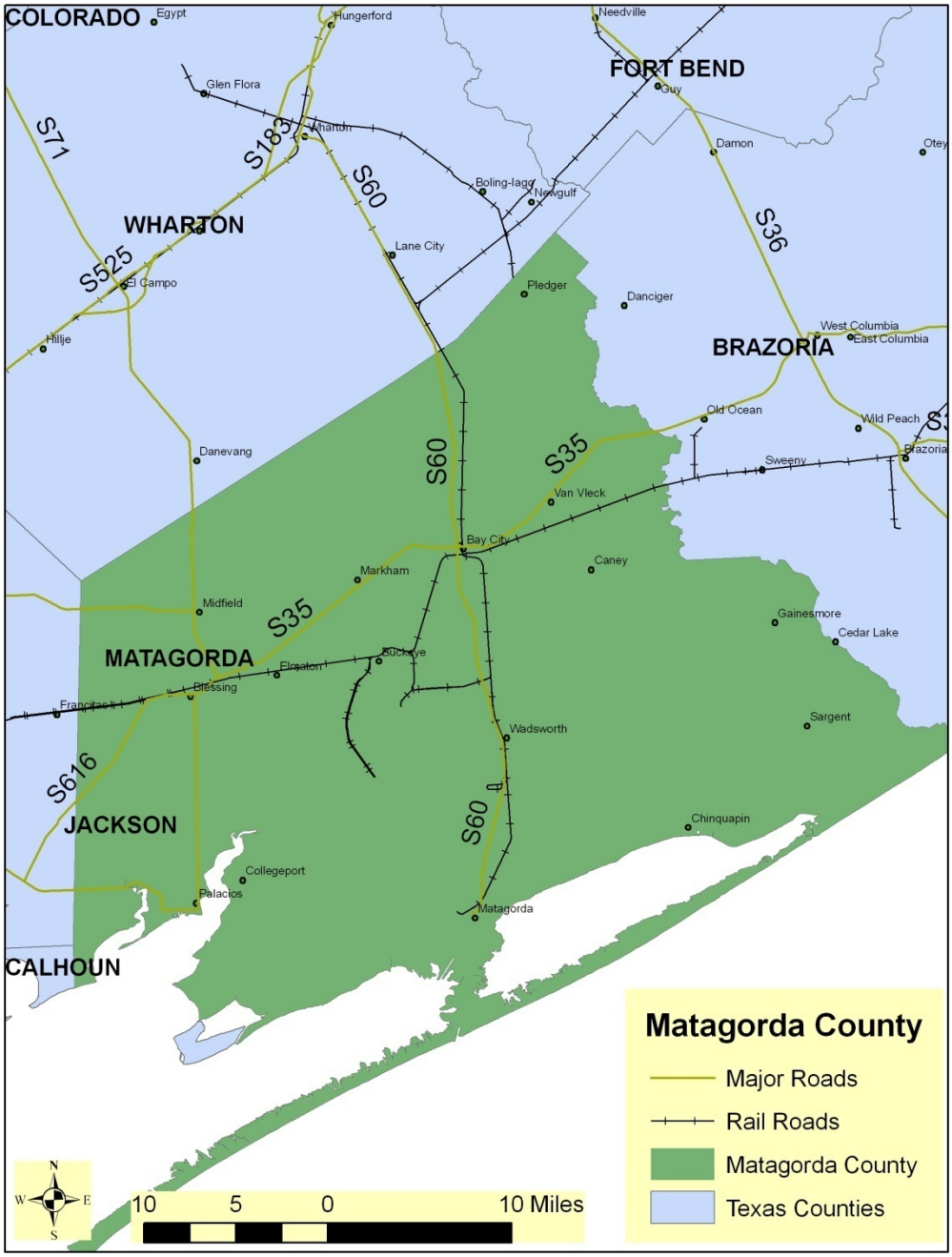

Figure 2.2: Matagorda County Major Thoroughfares

Traffic Counts and Congestion

The Texas Department of Transportation (TxDOT) monitors the Annual Average Daily Traffic (AADT) on TxDOT maintained roads.[2] The traffic counts are 2008, 24-hour traffic counts, adjusted seasonally. The highest volume road is SH35. There are about 6,800 trips travelling west to Bay City. From Bay City, there are about 9,000 trips exiting and continuing west. The second highest volume road is SH60. Between 3,200 and 4,100 vehicles are travelling on SH60, which travels north/south and intersects with SH35 in Bay City.

One of the stated goals for this study's transit plan is to address concerns regarding future congestion. Bay City is located at the juncture of SH35 and SH60, the two highest volume roadways in the county. These roads connect Bay City to large regional employers to the south. In particular, two of these employers, the South Texas Nuclear Project (STP) and White Stallion, are anticipating future construction that will generate between 5,000 and 6,500 additional jobs for STP, and 1,000 to 1,500 additional jobs for White Stallion. These jobs are temporary, anticipated to last up to 5 years. During the construction period, these future workers will add to the traffic volume of SH35 and SH60, as well as smaller Farm-to-Market roads. Depending on where these workers settle, there is a concern that the added traffic may create congestion, particularly close to the construction sites.

The following is the 2008 vehicle counts on the roads supporting the STP and White Stallion facilities:

- FM1468 has a 24-hour traffic count of 1,000 vehicles, just north of FM521.
- FM521 has a 24-hour traffic count of 3,000 vehicles in the segment between FM1468 and FM2668.
- FM2668 has a 24-hour traffic count of 1,250 vehicles between Bay City and FM521.

According to Yoakum District TxDOT engineers, these three roadways are classified as two-lane roadways with shoulders with a peak capacity of 2,000 vehicles per lane per hour. When asked if congestion related to future construction was a concern of the TxDOT office, staff said it was not a concern given:

- The roadways are currently far from capacity. The highest volume segment is on FM521, between FM1468 and FM2668 and it experiences 3,000 vehicles per day.
- Workers will be accessing the site from around the county and region, so not all trips will be originating from the same location. Some of workers will already be living within the area and may be coming from Brazoria County, Palacios, Victoria, etc. Others will move

[2] TxDOT Traffic Maps: http://www.txdot.gov/travel/traffic_map.htm. Retrieved 1/19/2010.

to the area. If Matagorda County's experience is similar to that of other areas that have experienced similar large-scale construction projects, those workers may bring trailers, or rent apartments in the area. Currently, Matagorda County does not have projections as to where these temporary construction workers may live.

- Construction materials will be barged in, relieving some of the heavy truck traffic;
- STP is constructing three separate entrances to its site to help coordinate traffic. One entrance will be for construction crews, one for construction materials, and the third entrance will be for the existing staff. STP may stagger shifts to further alleviate congestion at the plant entrance. They have asked the TxDOT office for a stop light at the plant entrance, a potential point of significant congestion but, to date, that request has not been granted by the TxDOT office.

See Figure 2.3: Matagorda County Traffic Counts.

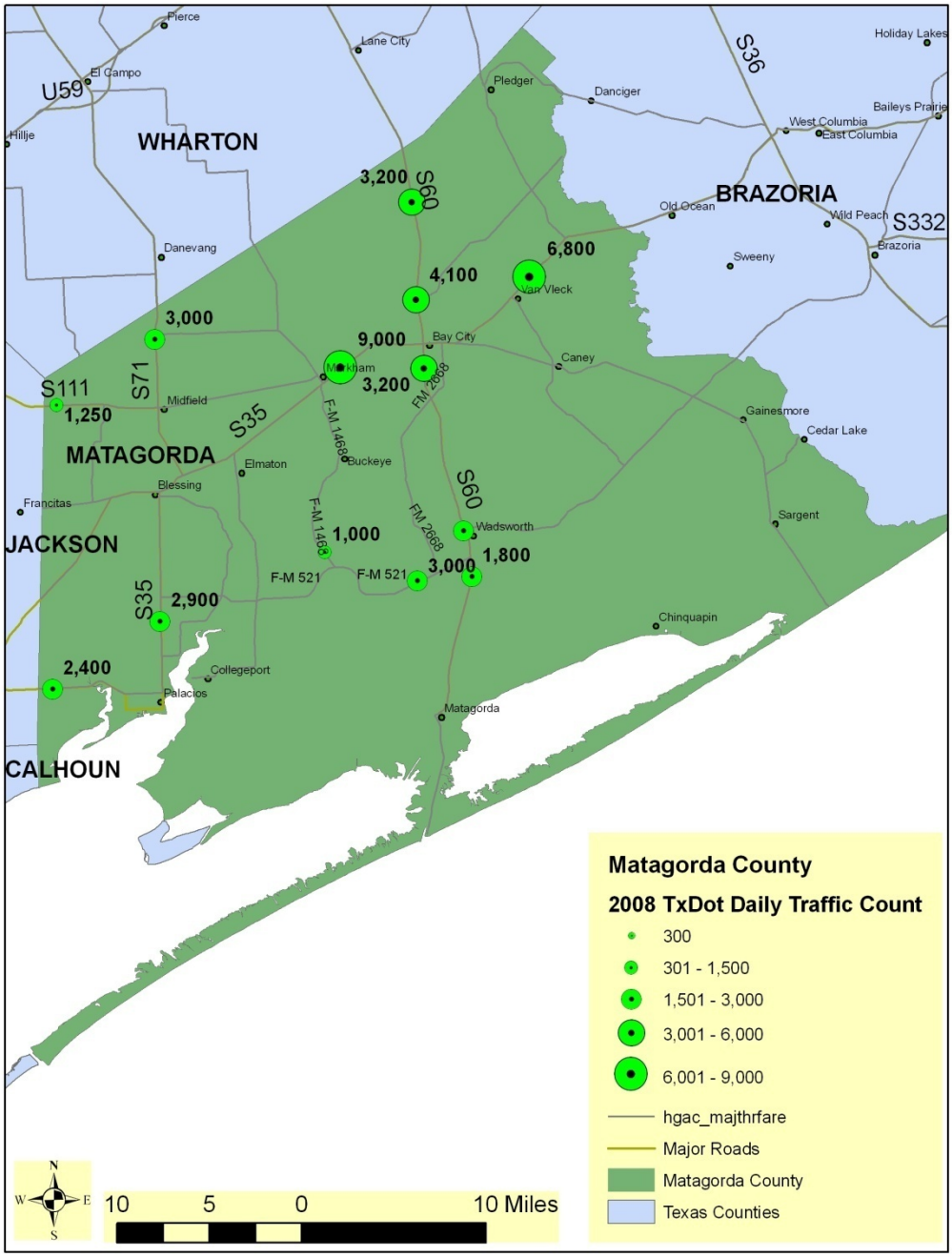

Figure 2.3: Matagorda County Traffic Counts

Demographic Characteristics

The demographic profile of Matagorda County indicates 12.4 percent of its population is over 65 years of age, 19 percent have a disability, 18.5 percent are below the poverty line, and almost 27 percent speak a language other than English in the home. See Table 2.1, Matagorda County Demographic Profile below.

Table 2.1 - Matagorda County Demographic Profile	
2000 Population	37,957
2009 Population Estimate	36,978
2000-2009 Change	-2.6%
1990-2000 Change	2.8%
Persons over 65	12.4%
Persons under 5	7.4%
Persons with a disability	7,063
Persons with a disability (%)	19%
Non-English Spoken at Home	26.6%
Persons Hispanic or Latino	31.3%
Households	13,901
Median Household Income (1999)	$32,174
Persons below poverty line (1999)	18.5%
Households without an automobile	10.3%
Private Non-farm employment (2001)	7,798
Land Area (square miles)	1,114
Density (persons per square mile)	34.1
Source: U.S. Census 2000 and American Community Survey 2009	

Developing an effective transit plan requires a fundamental understanding of the existing demographic conditions within the study area. Depending on the population's characteristics and density, different types of transit are recommended. The majority of Matagorda County's land mass is characterized as low-density rural. However, most of the population is located within the small urban areas of Bay City and Palacios. Assessing the potential for transit requires examining several demographic measures in detail:

- Dwelling unit (DU) densities with considerations of future growth potential, and population characteristics;
- Income and Transportation Options, including median household income (especially in areas where there are concentrations of lower income households), and access to

automobile (income and transportation factors are critical components of evaluating transit need); and

- The major trip producers and attractors, including major employers in the county.

Dwelling Units per Acre

Dwelling units per acre is similar to population in that areas of higher density are more appropriate for fixed or flex route service. Based on the analysis of 2000 data shown in Figure 1.4, Dwelling Units per Acre, the number of Dwelling Units (DU) per acre does not exceed 3.5 in Matagorda County. Areas of greatest density were in the cities of Bay City and Palacios. However, those densities were between .03 and 3.5 households per acre. Population density remains less that .014 dwelling units per acre in most of the rural areas of the county. (See Figure 2.4: Dwelling Units per Acre.)

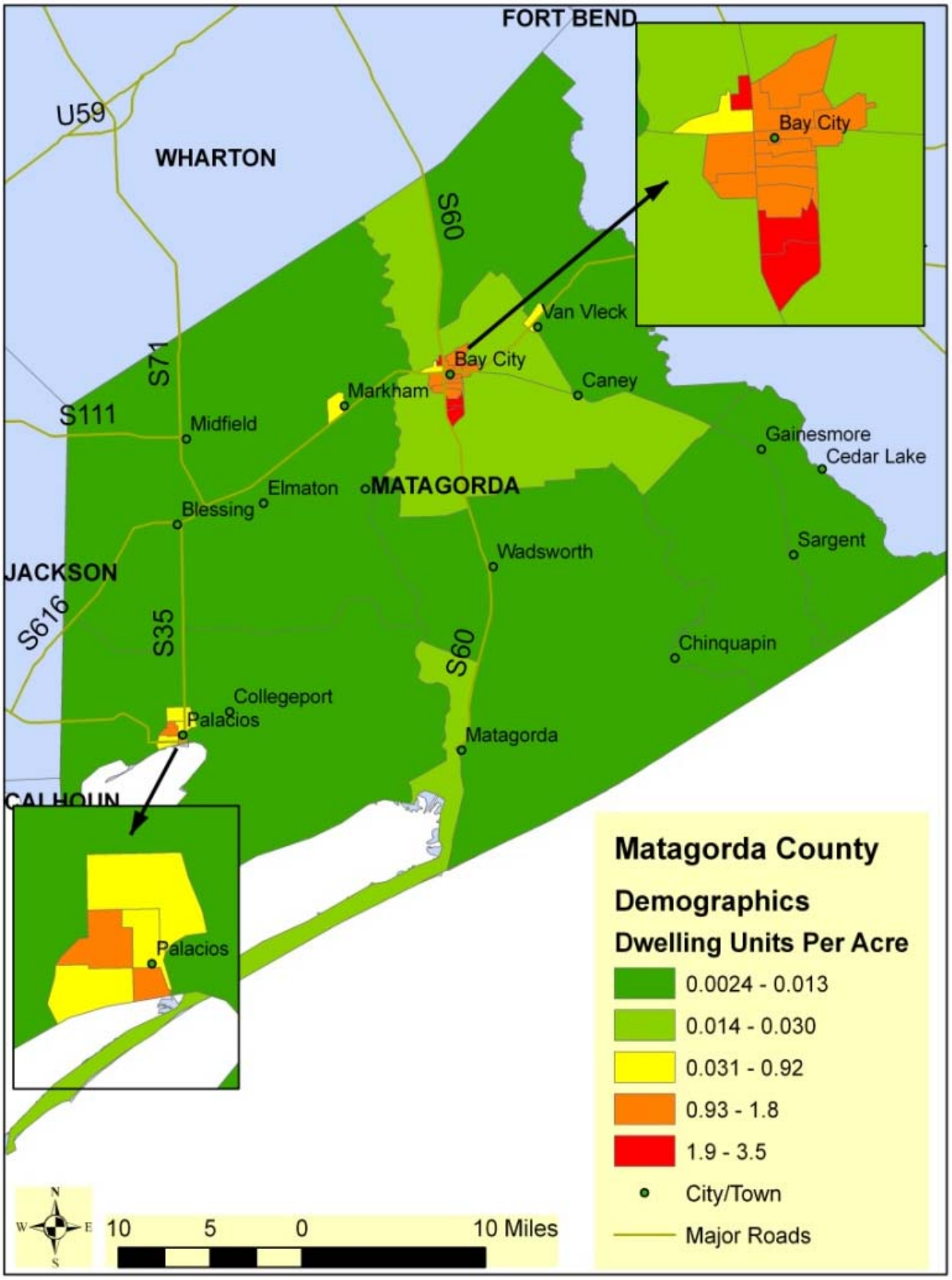

Figure 2.4: Dwelling Units per Acre

As mentioned, higher density is favorable for the development of specific modes of transit and lower density is more appropriate for other modes of transit. Density is not the sole determinant, but it is a critical factor in considering transit feasibility. A traditional measure of potential transit modes is shown in Table 2.2, Appropriate Densities for Different Transit Modes.

Table 2.2: Appropriate Densities for Different Transit Modes

Mode	***Service***	***Minimum Residential Densities (dwelling units/acre)***	***Remarks***
Dial-a-Bus/Demand Response	Many origins to many destinations	6	Assuming labor costs are relatively comparable to taxi service costs
Dial-a-Bus/Flex Service	Fixed destination or subscription service	3.5 to 5	Needed to keep costs relatively manageable at 3.5 to 5
Local Bus	*Minimum* ½-mile route spacing, 20 buses per day	4	Average - varies as a function of downtown size and distance from residential area to downtown.
Local Bus	*Intermediate* ½-mile route spacing, 40 buses per day	7	In some services, fixed route may be allowed to "flex" off route to increase coverage area. This may be appropriate for less dense areas.
Local Bus	*Frequent* ½-mile route spacing, 120 buses per day	15	
Express Bus reached by foot	5 buses during 2-hour peak period	15 Average density over 2-square mile tributary area	10 to 15 miles from large employers only
Express Bus reached by auto	5 to 10 buses during 2-hour peak period	3 Average density over 20-square mile tributary area	10 to 20 miles from a downtown larger than 20 million sq.ft. of non-residential floorspace

Source: Urban Densities For Public Transportation, Tri-State Regional Planning Commission, U.S. Department of Transportation, Ford Foundation and Rockefeller Foundation, Re-affirmed Urban Transportation Perspectives and Prospects, 1982, Rubashev and Zapan.

Based on current and future density levels for Matagorda County, the following modes can be considered appropriate based on population density:

- Dial-a-Bus or demand-response service: Most appropriate for rural areas and for meeting the needs of people with mobility disabilities.
- Fixed-route bus, circulator, or connector service: Appropriate at minimum level for urban areas like Bay City. Service may be modified to "flex" off route to increase coverage and meet the needs of more riders.

- Express Bus: Appropriate to meet the needs of employees who work a distance from workplace. Increased use of vanpools and carpools may serve as effectively.

Population Characteristics

Like population density, the percentage of minority and elderly populations can be used to gauge transit demand in an area. The presence of high U.S. minority and senior populations has been positively correlated with demand for transit to access workplace, medical and community centers, health and human service facilities, academic centers and other related services. Matagorda County reflects a minority population that is on-par with the other counties in the region; about 32 percent of the population is classified as Minority by the U.S. Census. [3] Almost 14 percent of Matagorda County is over the age of 65. By comparison, 9.8 percent of the region's population is over the age of 65. A higher percentage of seniors is a good indicator of higher transit need.

Figure 2.5, Percentage of Minority Population, illustrates that a majority of minority populations live in Bay City and southwest Matagorda County. Figure 2.6, Percentage of Senior 65+ Population shows that a majority of elderly citizens reside primarily in and on the outskirts of Bay City, and in the northeast part of Matagorda County.

[3] The region is composed of the service areas for the Golden Crescent Regional Planning Commission (Gonzales, DeWitt, Lavaca, Victoria, Jackson, Calhoun, and Matagorda); Connect Transportation (Brazoria, Galveston); Fort Bend County; Colorado Valley (Wharton, Colorado, Austin, Waller)

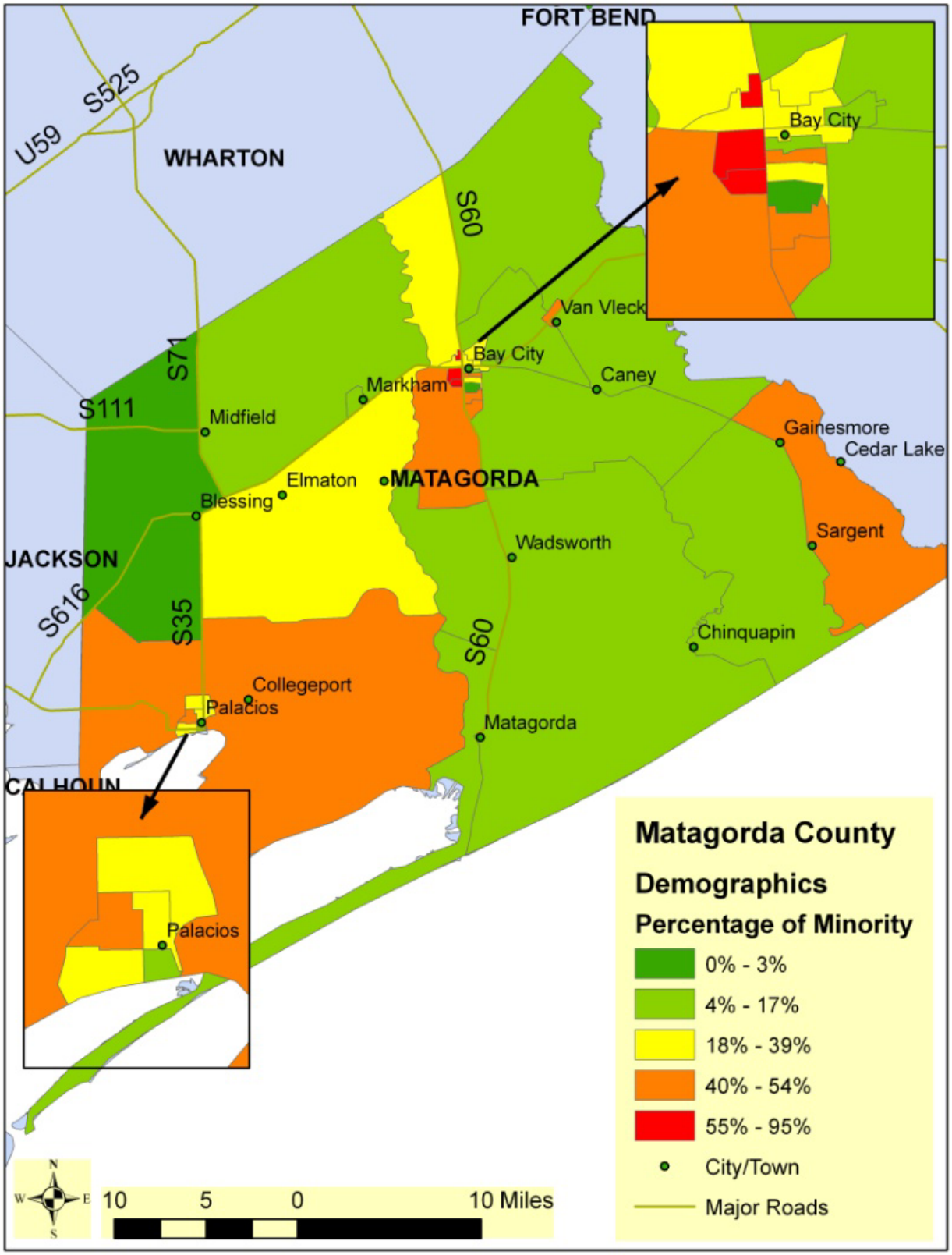

Figure 2.5: Percentage of Minority

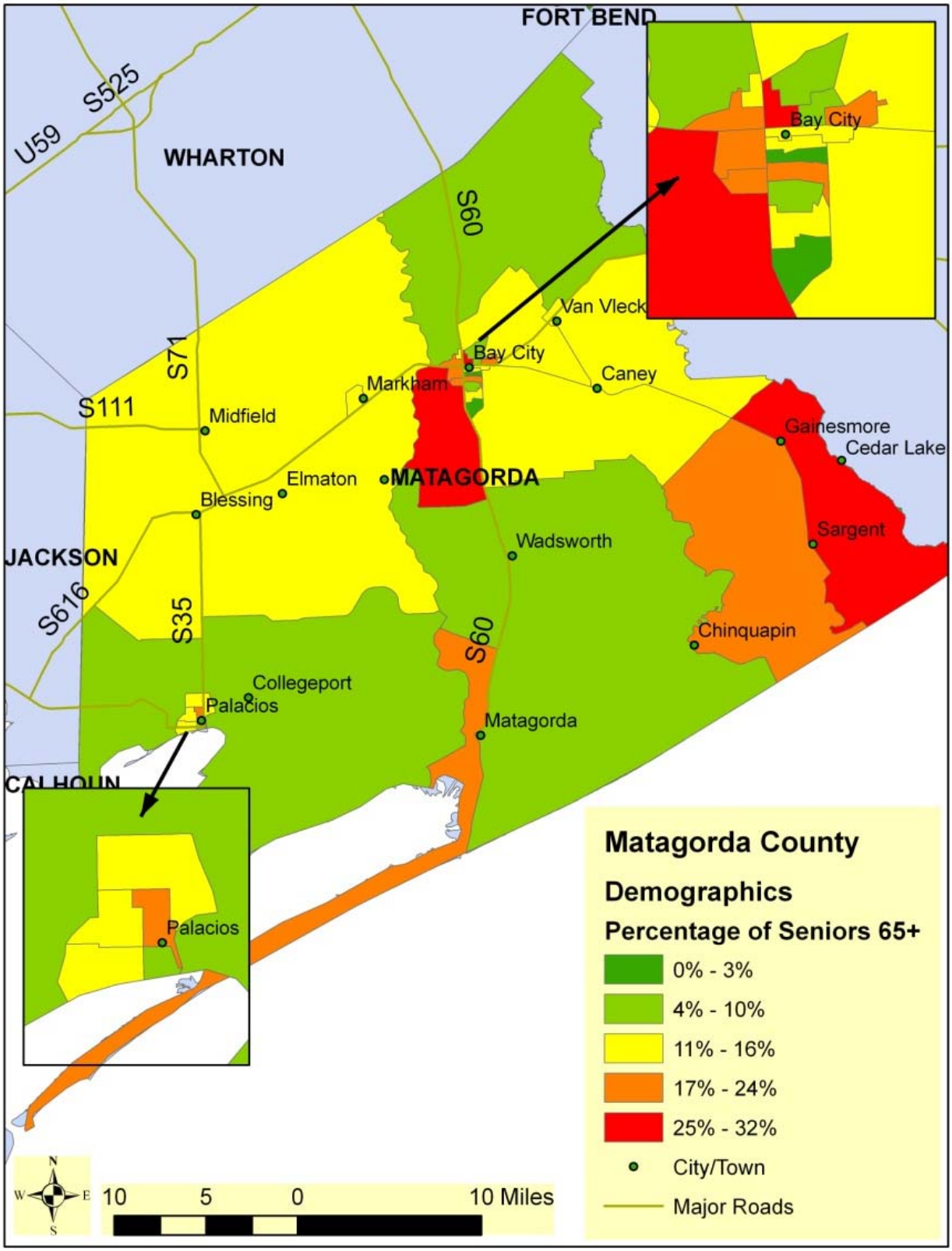

Figure 2.6: Percentage of Population over 65 Years

Income and Transportation Options

Individuals and families with lower incomes (particularly those at or below $30,000 per year) tend to have a higher demand for transit services. Matagorda County has a higher incidence of poverty than the region; 18.5 percent of the population lives at or below the poverty level, compared to 11.4 percent for the region.[4] Lower income and the need for transit have a significant correlation for several reasons:

- Lower income levels mean that many households will not always have access to a personal vehicle or the personal vehicle may be unreliable;
- Many individuals who are older or have a disability may have mobility challenges that make using a personal vehicle difficult or even impossible;
- Limited mobility may make access to jobs difficult, which perpetuates continuation of lower income and the need for mobility alternatives like transit;
- Limited mobility or access to non-emergency medical care can lead to worsening of health conditions, and potentially higher future medical costs.

Matagorda County has a lower median household income than the neighboring counties in the region or the state, as shown in Table 2.2, Median Household Income. Similarly, the cities of Bay City and Palacios reflect lower median income levels than the county and substantially lower than the statewide average. However, Matagorda County, like the region, is experiencing faster growth in household income than the state or nation. No statistics are available for Bay City or Palacios for FY2008, however, it is likely that the pace of improvement is similar to the county and the region (30 percent).

Table 2.3: Median Household Income

Place	2000	2008	% Change
United States	$ 41,994	$ 52,175	24%
Texas	$ 39,927	$ 49,078	23%
Regional Counties	$ 37,388	$ 48,604	30%
Matagorda County	$ 32,174	$ 41,911	30%
Bay City	$ 30,446	NA	NA
Palacios	$ 27,623	NA	NA

Source: Table 53, Median Household Income, American Factfinder, 2000 US Census Bureau.

Figure 2.7, Median Household Income, shows the distribution of average household incomes throughout Matagorda County by U.S. Census Block:

[4] 2000 U.S. Census, Table P87, Poverty Status by Age.

- Highest average income levels (over $46,000) occur in portions of Bay City and the eastern portion of the county;
- Average income levels occur throughout central Matagorda County with the exception of the western corner where Matagorda County, Jackson County, and Wharton County meet and the income levels are lower; and
- Lowest levels of average income occur in Bay City and Palacios, the southeast rural areas including the Cedar Lake, Gainesmore, Sargent, Chinquapin, Wadsworth and, in particular, Matagorda. Lower income levels are also present in the northwestern area bordering Wharton and Jackson Counties including Blessing.

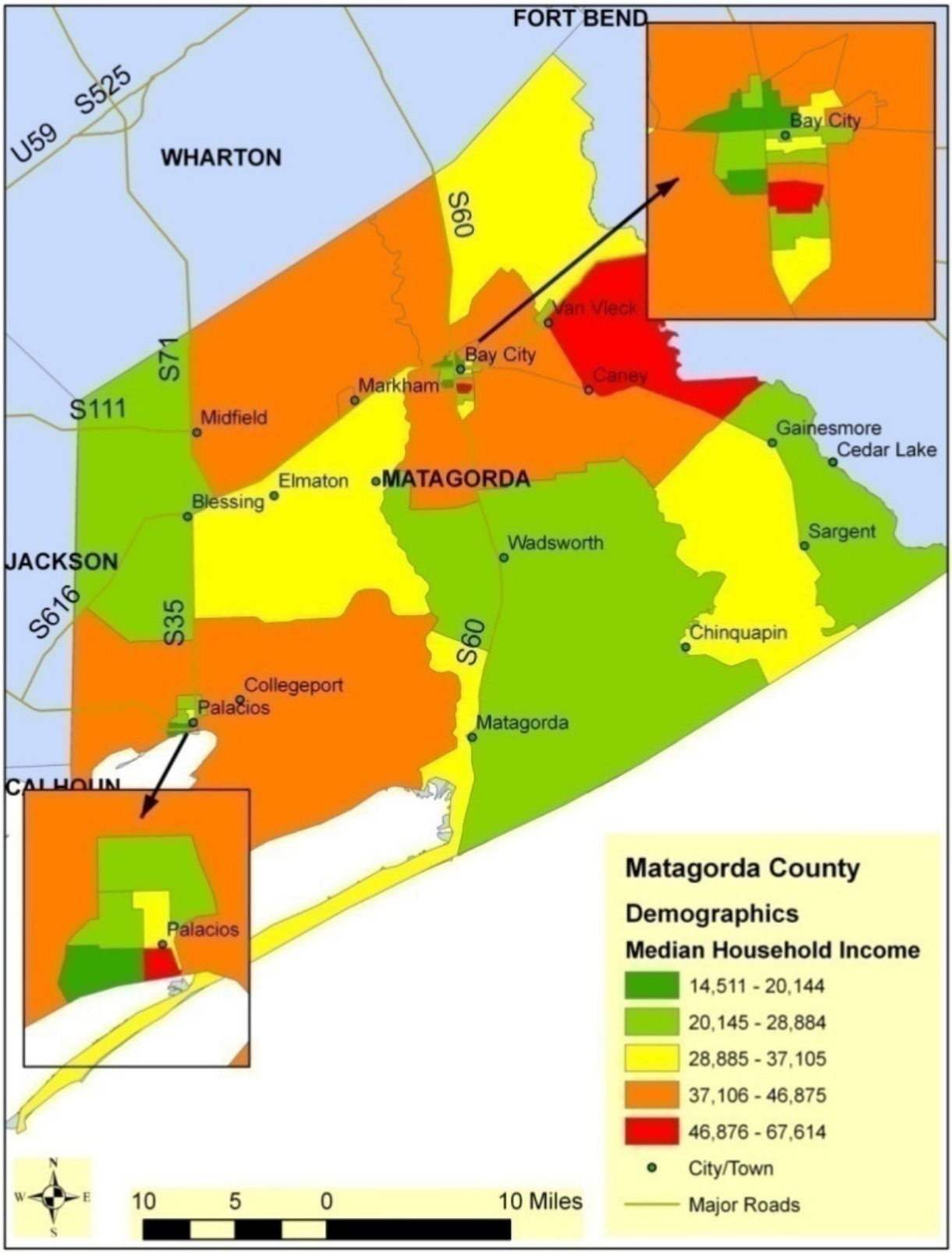

Figure 2.7: Median Household Income

Lower Income and Transportation Alternatives

Households with higher median incomes will typically have transportation options, including the use of a personal vehicle. Given that, transit services targeted at attracting this segment of the transit market must offer a compelling advantage over the personal autos. For example, vanpools may be a desirable alternative for some of these individuals. Vanpools are typically organized to serve a single work place and can offer benefits that will attract riders such as the fellowship and opportunity to relax with their friends and co-workers, increased productivity for those that chose to use the commute time to accomplish other tasks, a reduction in stress, and an opportunity to save money.

Among individuals with lower incomes, transportation options often diminish. Personal vehicles may not be available at all, may be available only for one of two potential wage earners, or may be unreliable. Even if the car is in working order, the cost of fuel or insurance may prevent its use. While some individuals may get to work or other destinations through carpools or from rides from friends, others without a reliable personal automobile in an area lacking public transit may be unable to find a job or get to work. Public transit can provide access to jobs, medical services, schools, social services, and shopping, among others, and is a practical option for such individuals.

Matagorda County has a lower median income level than the remainder of Texas and a higher incidence of poverty. Figure 2.8, Median Household Income Less Than $30,000 per Year, shows the distribution of households earning less than $30,000 per year. Households with this level of income are more likely to use public transit (although their ability to pay for fares may be limited), since affording maintenance of more than one personal vehicle may be difficult.

- A majority of Bay City reflects a median household income of less than $30,000 per year in 2000;
- A majority of Palacios reflects a median household income of less than $30,000 per year in 2000; and
- Four Census Blocks in the county had a median household income of less than $30,000 per year in 2000.

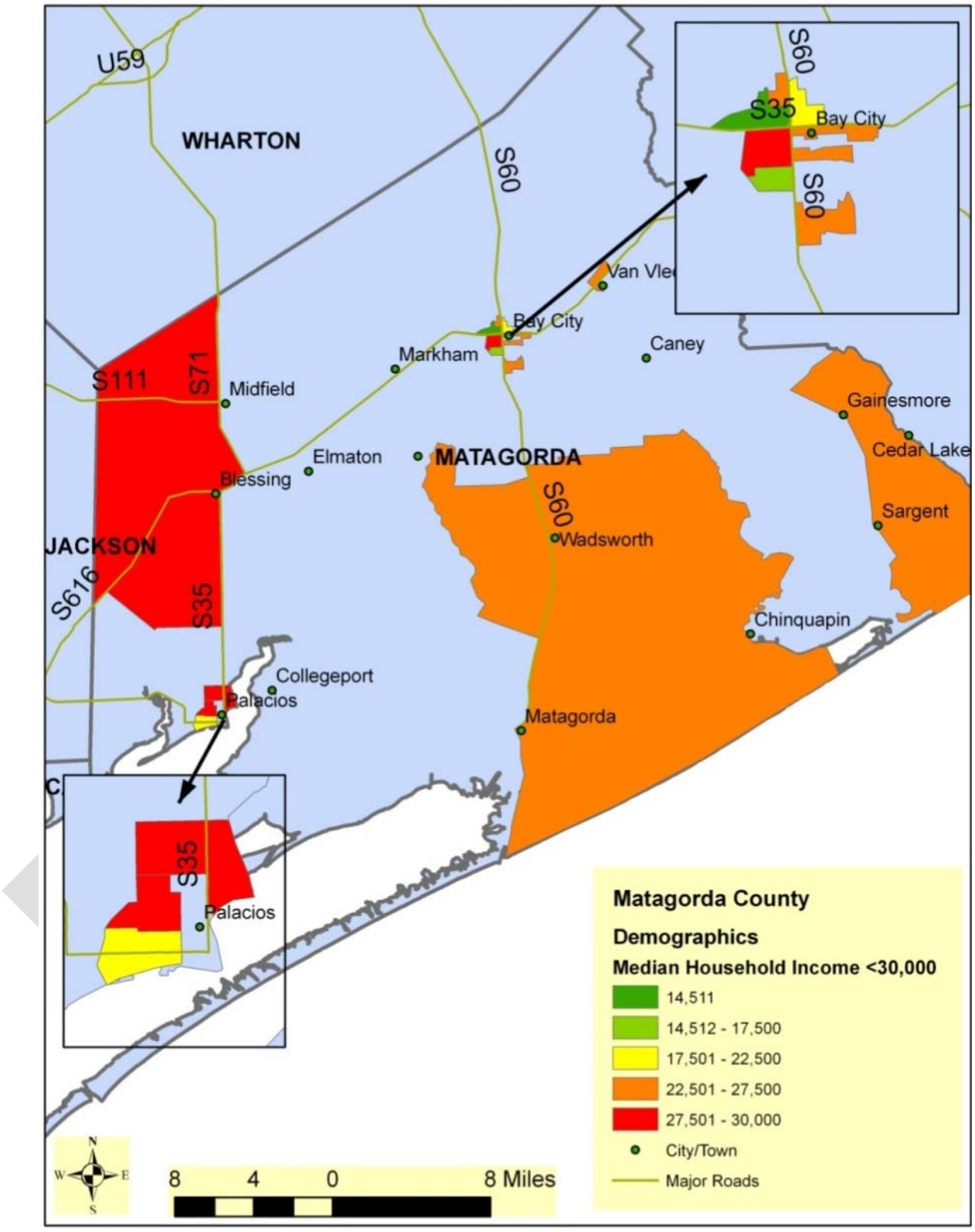

Figure 2.8: Median HH Income Less than $30,000 per Year

Income levels are not the sole determinant for assessing transit users since low-income levels do not preclude a household from possessing considerable financial assets. Low-income levels in Bay City and Palacios indicate, however, that a large percentage of the population has modest financial resources and most likely a greater need for transit.

Auto Availability

While income is an indirect measure of mobility, auto availability is a direct measure of transportation resources. Households without an automobile must rely on transportation alternatives to travel any distance. Transit can provide a viable option for individuals in these households.

Most communities in Matagorda County have a high rate of auto availability. For the region, about 6 percent of households do not have cars, compared to 10 percent for Matagorda County and 13 percent for Bay City. [5] Figure 2.9, Percentage of Households with No Vehicle shows the auto availability in Matagorda County.

[5] Table H44: Tenure by Vehicles Available, America Factfinder, US Census Bureau, 1/10/2010

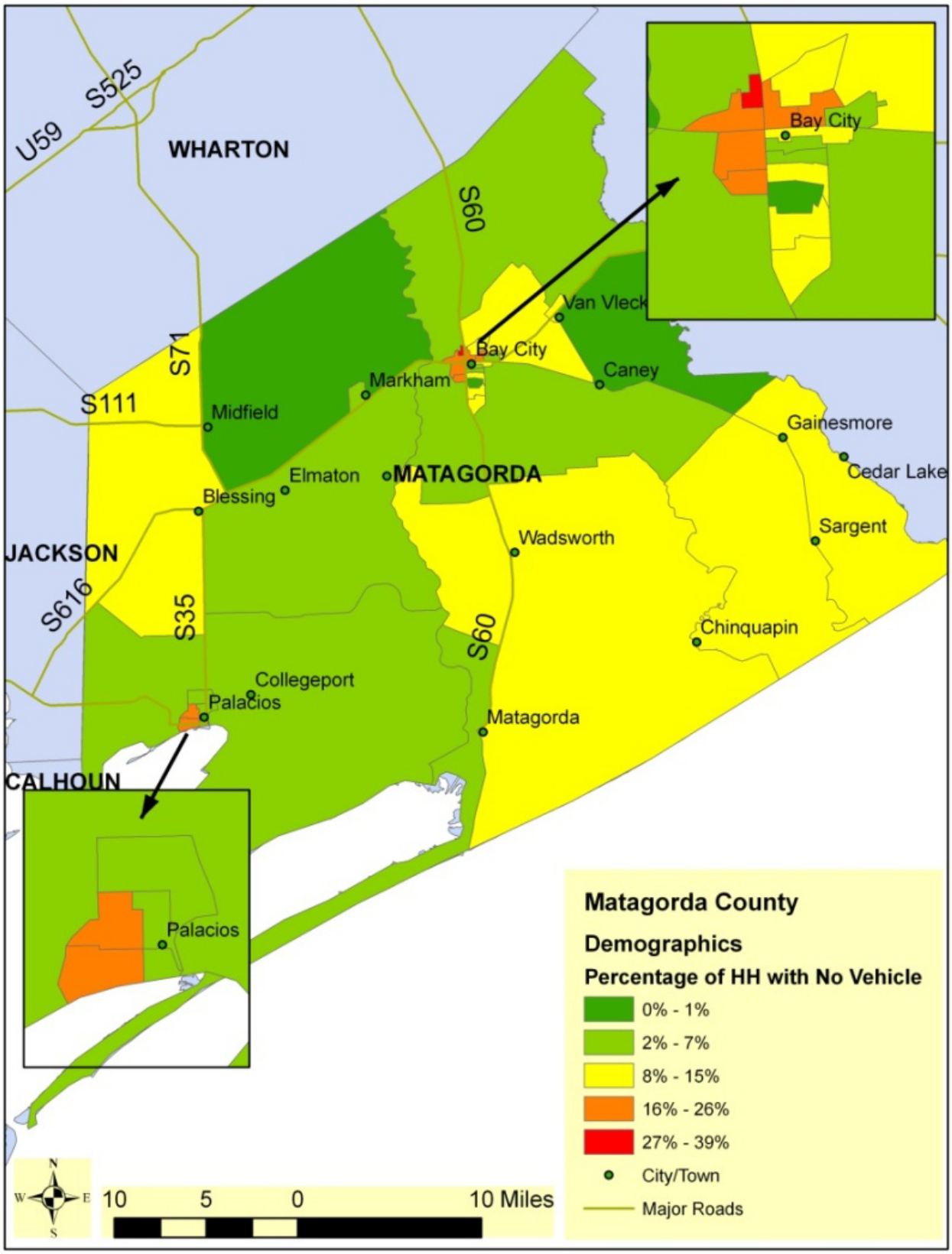

Figure 2.9: Percentage of Households with No Vehicle

Trip Producers and Attractors

While population densities and characteristics, income, and auto availability influence the need for transit services, an analysis of major trip producer and attractors can help understand where the potential for effective transit service exists. Typically:

- Trip-producing areas (or origins) are where people live. Those areas that have higher populations and household densities typically produce greater numbers of trips. As is reviewed above, Bay City, followed by Palacios, is where the majority of people live and the greatest need is demonstrated.

- Trip-attracting areas (or destinations) consist of employment, medical, education/academic, health and human services, and retail centers. Areas that support large employment centers, academic and/or health centers will attract a higher percentage of the total trips in the area. The following section reviews significant destinations in the study area.

Employment Destinations: Employment in Matagorda County is concentrated in the following sectors: [6]

- Retail accounts for approximately 18 percent of all employment or 1,500 jobs, in Matagorda County. Retails jobs are concentrated primarily in Bay City along the commercial corridors of SH35 and SH60. Large local retailers like HEB and Wal-Mart Supercenter, along with smaller retailers like Palais Royale, were contacted as part of this study to see if there was a perceived need for transit services for either their employees or customers. The response from the retailers was tepid with little need perceived.

  Despite the response from businesses, if transit service were provided to the SH35/SH60 retail corridor, it may attract riders at a level similar to other markets in the region. For example, about one-tenth of one percent, or 19 residents, of Victoria, Texas, take transit to work, where RTransit provides fixed route and van pool service. Galveston, where fixed route service is more extensive, reflects about 2.5 percent of all workers using transit to get to work. If similar percentages were applied and assuming all retail jobs were located in Bay City, the expected ridership may range from 1, for the low estimate, to 37 riders daily. (See the Public Involvement Plan for Business, Agency and Organization Interview Results).

- Health and Social Services accounts for 13 percent of all employment, or 1,200 jobs, in Matagorda County. Like retail, health service jobs are concentrated in Bay City but they are also found in Palacios, and other smaller communities. One of the largest employers

[6] Employment figures from 2007 U.S. Census, County Business Patterns, Matagorda County

is the Matagorda County Regional Medical Center (RMC). Like the larger retailers, the Matagorda County Regional Medical Center was interviewed for this study. It employs about 350 people, who work among three shifts. Staff members from the Matagorda County RMC did not perceive a need for transit by its workers and they indicated that transportation has not been noted as a need on its surveys. They said that most of its employees working at the facility are paid professional wages and do not have difficulties with personal transportation. Lower paying technical and laborer positions were "scattered" around the county and not concentrated at the clinic, further making the medical center less of a focus of job-related transit services.

Other health-related employers contacted for this study include the Matagorda Episcopal Health Outreach Program (MEHOP), the Bay Villa Health Care Center, Bay City Physical Therapy Center, Bethany Health Care, the Matagorda County Women's Crisis Center, and the Economic Action Committee of the Gulf Coast. Most of these agencies felt the need for more transportation was more important from the perspective of the client, rather than the employee and they indicated strong support for the growth and expansion of the county-wide demand response services. Some agencies felt that a small number of employees (1 to 5) may benefit from transit service.

- Accommodation and Food Services accounts for less than 13 percent of all employment, or 1,051 jobs, in Matagorda County. In Bay City, numerous new hotels have been built along SH35 along with a few new restaurant establishments. As part of this study, these establishments were contacted to see if there was a need for transportation for its employees. Some hotels indicated a need for employee transportation for their lower-wage employees, particularly housekeeping. After polling the hotels, most housekeeping shifts begin between 8:00 and 9:00 am and end at or before 5:00 pm.

- Utilities accounts for less than 13 percent of all employment, or an estimated 1,029 jobs, in Matagorda County.[7] These jobs are in electric power production, transmission, and distribution, including nuclear power; natural gas distribution, and water distribution/supply. Of these, most jobs are in the electric power production sector. One of the largest employers in this sector is the South Texas Nuclear Project (STP).

  STP is located about 15 miles south of Bay City. It currently employs about 1,200 workers on site and 100 workers in its administrative building. As part of this study, the STP was contacted to determine its potential interest in providing transit services to its employees. At the time of this report, the STP does not currently indicate a need for

[7] Employment figures for Utilities are estimated since actual figures are not reported by the U.S. Census to protect industry information.

transit services; however a significant need may be generated in the future when the STP begins construction of a new facility.

White Stallion Energy is another power facility. It currently employs about 150 workers. It is located close to STP, and like STP, it anticipates future construction.

Over the next five years, Matagorda County will see the construction of a new nuclear power reactor by STP and an energy center by White Stallion. The STP projects between 5,000 and 6,500 temporary construction jobs. White Stallion expects to employ between 1,000 and 1,500 temporary workers when it begins construction of a new facility in 2016. Together, these projects are estimated to create up to 8,000 short-term (approximately 5 years) construction worker jobs and 1,000 permanent jobs. In a county of less than 40,000 residents, this increase of new jobs, both temporary and permanent, will make a significant economic impact.

- Manufacturing accounts for about 8 percent of all employment, or an estimated 646 jobs, in Matagorda County. These jobs are in all sectors of manufacturing, but the largest employer is petrochemical manufacturing. Three of the largest petrochemical manufacturers are LyondellBasell, OXEA, and Celanese.

  LyondellBasell is located approximately 15 miles south of Bay City. It is a global company and a refiner of crude oil; a significant producer of gasoline blending components; and a global manufacturer of chemicals and polymers. An estimated 180 workers are employed at their Matagorda County facility.

  OXEA and Celanese have a petrochemical facility about 10 miles south of Bay City. OXEA employs about 150 workers and Celanese employs about 45 workers.

  Valerus Compressors is another manufacturer in Matagorda County. It makes stainless steel parts and is located on the border of Matagorda and Brazoria counties. It employs about 150 workers.

Medical Destinations: Demand for medical trips includes destination within Matagorda County and surrounding counties and cities, including Houston. Based on an analysis of 6,515 Medical Transportation trips made in 2008, between 61 and 67 percent are destined for medical facilities within Bay City.

- The most significant single attractor is the Matagorda Renal Dialysis Center (1,621 trips). Individual doctor's offices made up the second largest category (1,721 trips).

- Houston is the second most popular attractor. In 2008, over 550 trips were to Houston medical centers such as the Houston Medical Center, Texas Children's Hospital,

Memorial Hermann Southwest Hospital, and General Dentistry of West University, Houston.

- For residents of Palacios, most medical trips are taken to Bay City. After that, significant destinations include facilities within Palacios like the Palacios Community Medical Center or the Mid Coast Medical Clinic, or Victoria.

- For residents of northeast Matagorda County, most medical trips are taken to Bay City. After that, significant destination include facilities within Brazoria County and Wharton County, like the Wharton Kidney Center, the South Texas Medical Clinics, and the Gulf Coast Medical Center.

Community Destinations: Major civic destinations include the County Courthouse, Bay City City Hall and the Palacios City Hall. The civic destinations not only employ over 300 persons, but also attract many non-work related trips.

Education/Academic: Two academic facilities, University of Houston at Victoria, and Wharton Community Junior College attract trips from Matagorda County and the region.

Figure 2.11, Major Trip Attractors shows the location of trip attractors. There are a number of out-of-county trips attractors that are not reflected in Figure 2.10. These include medical faclities in Victoria, Galveston and Houston and various employment in neighboring counties.

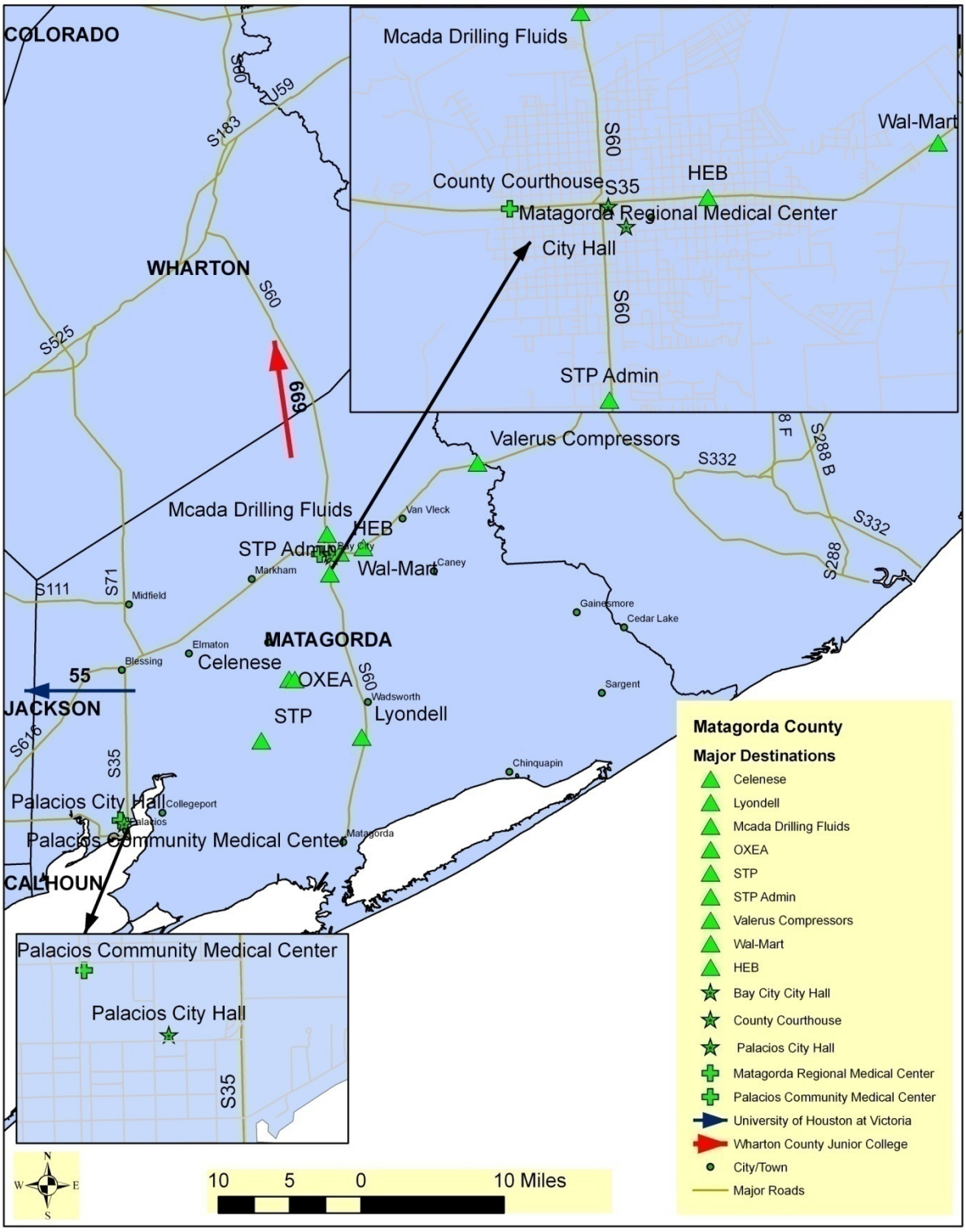

Figure 2.10: Major Trip Attractors

Population and Employment Projections

Between 1990 and 2000, Matagorda County experienced lower levels of population growth than the surrounding Gulf Coast region, which saw a 25 percent increase. Matagorda, by comparison, experienced growth under 10 percent. Moreover, from 2000 to 2008, the population was estimated to experience little to no growth, from 37,039 in 2000 to 37,265 in 2008. This slow to no growth is a concern for the county as it has little opportunity to generate more revenues to support the services needed by the residents.

However, Matagorda County is anticipating two major construction projects within the next seven years. As mentioned previously, the White Stallion Energy Center is projected to employ 150 new full-time employees and between 1,000 and 1,500 workers during the peak of construction. The STP facilty is planning on constructing two new nuclear reactors. The additional reactors could generate up to 800 full-time jobs and up to 5,500 construction jobs. These projects would have a siginificant impact to the county's population and economy in the next five years.

Figure 2.11, Population and Employment Projections shows the H-GAC population and employment projections for 2035. H-GAC projects the population in Matagorda County to increase from 37,600 in 2005 to 45,600 in 2035. H-GAC also projects an increase in employment from 16,400 jobs in 2005 to 19,600 jobs in 2035.[8]

[8] HGAC – Non-TMA Counties 2005-2035: Population and Employment Growth by Tracts. (http://www.h-gac.com/community/socioeconomic/documents/non-tma_4maps.pdf)

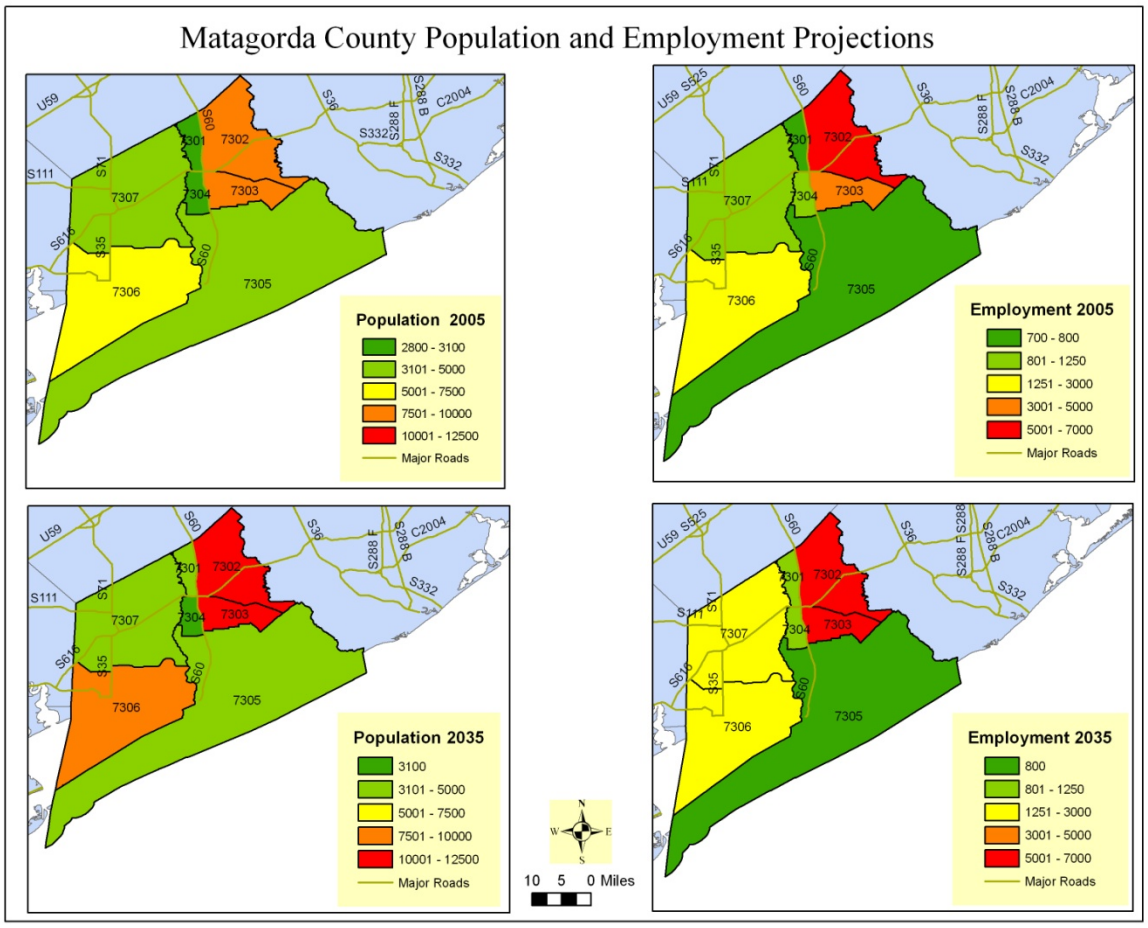

Figure 2.11: Population and Employment Growth

Conclusion

Matagorda County currently has approximately 36,000 residents, with approximately 50 percent living in Bay City. As indicated by the Table 1.1: Transit Mode by Density, the County has a population density in Bay City that may be appropriate for demand-response service, minimal level fixed or flex-route service, express/park and ride or connector service; and/or increased use of vanpools and carpools. Moreover, the demographics and characteristics of the population show a need for transit in Bay City. Palacios is less dense than Bay City; demand response service and limited scheduled service to link Palacios to Bay City is appropriate for this small municipality.

Matagorda County has major trip attractors in Bay City and south central Matagorda County. Bay City trip attractors include a regional medical clinic, city and county services, HEB and Wal-Mart. Major trip attractors outside of Bay City and in Matagorda County include STP, LyondellBasell, Valerus Compressors, Celanese and OXEA. Trip attractors outside of Matagorda County are medical facilities in Houston, Galveston and Victoria, academic centers in

Victoria and Wharton and employment in neighboring counties. The demographics show that the trips are primarily being generated from Bay City and Palacios.

The population and employment is projected to increase approximately 20 percent by 2035. The 20 percent increase is projected to occur in the Bay City area with the exception of two new nuclear facilities at STP and the White Stallion Energy Center. If the current demographic trends continue then demand for public transportation is expected to increase. The next chapter outlines the public transportation services currently available in Matagorda County.

Chapter 3: Transportation Providers

Examining the experiences of regional and local transit providers offers insights into the types of transit services that may be appropriate, effective and efficient for Matagorda County. Information about regional peer systems will help provide a framework to develop transit service in Matagorda County. This chapter outlines regional transportation providers: Golden Crescent Regional Planning Commission (GCRPC); Gulf Coast Center/Connect Transit; Colorado Valley Transit District (CVTD); and Fort Bend County Transit (FBC). The chapter also describes local transportation services being offered in Matagorda County through the Friends of Elder Citizens (FOEC).

Regional Transportation Providers

For each provider, information regarding background, organization, types of service, technology used, challenges, and other pertinent information is given. The section concludes with a service efficiency and cost effectiveness discussion. Each of these organizations provides insight to a framework for governance of transportation services in Matagorda County.

- FOEC: Matagorda County is served directly by FOEC, who is a sub-contractor to the GCRPC. The FOEC provides demand response service in Matagorda and Jackson Counties. In addition, the FOEC is a sub-contractor to American Medical Response (AMR) for Medicaid transportation.
- GCRPC: The GCRPC is the Federal Transit Administration (FTA) grantee for Matagorda County, receiving federal and state funding on its behalf. It issues Request for Proposals (RFPs) for service provision in Matagorda County, evaluates service proposals, and ensures that service is effectively delivered. Excluding Matagorda County, the GCRPC provides a variety of services (fixed route, demand response, and van pool) for seven counties: Calhoun, Dewitt, Goliad, Gonzales, Jackson, Lavaca, and Victoria.
- Gulf Coast Center/Connect Transit: Connect Transit is organized under the Gulf Coast Center, an organization dedicated to the provision of services and support for people with mental retardation or mental illness. It provides demand response, fixed route, and park-and-ride services within Brazoria and Galveston counties.
- CVTD: The CVTD serves Austin, Colorado, Waller and Wharton counties, where it provides demand response, fixed route, and van pool services.
- FBC: Unlike the previous organizations, the FBC serves one county, Fort Bend County. Organized as a County department, the FBC provides fixed route, demand response, and van pool service and manages a ride voucher program.

See Figure 3.1: Local and Regional Transit Providers, for a map of transit provider service areas.

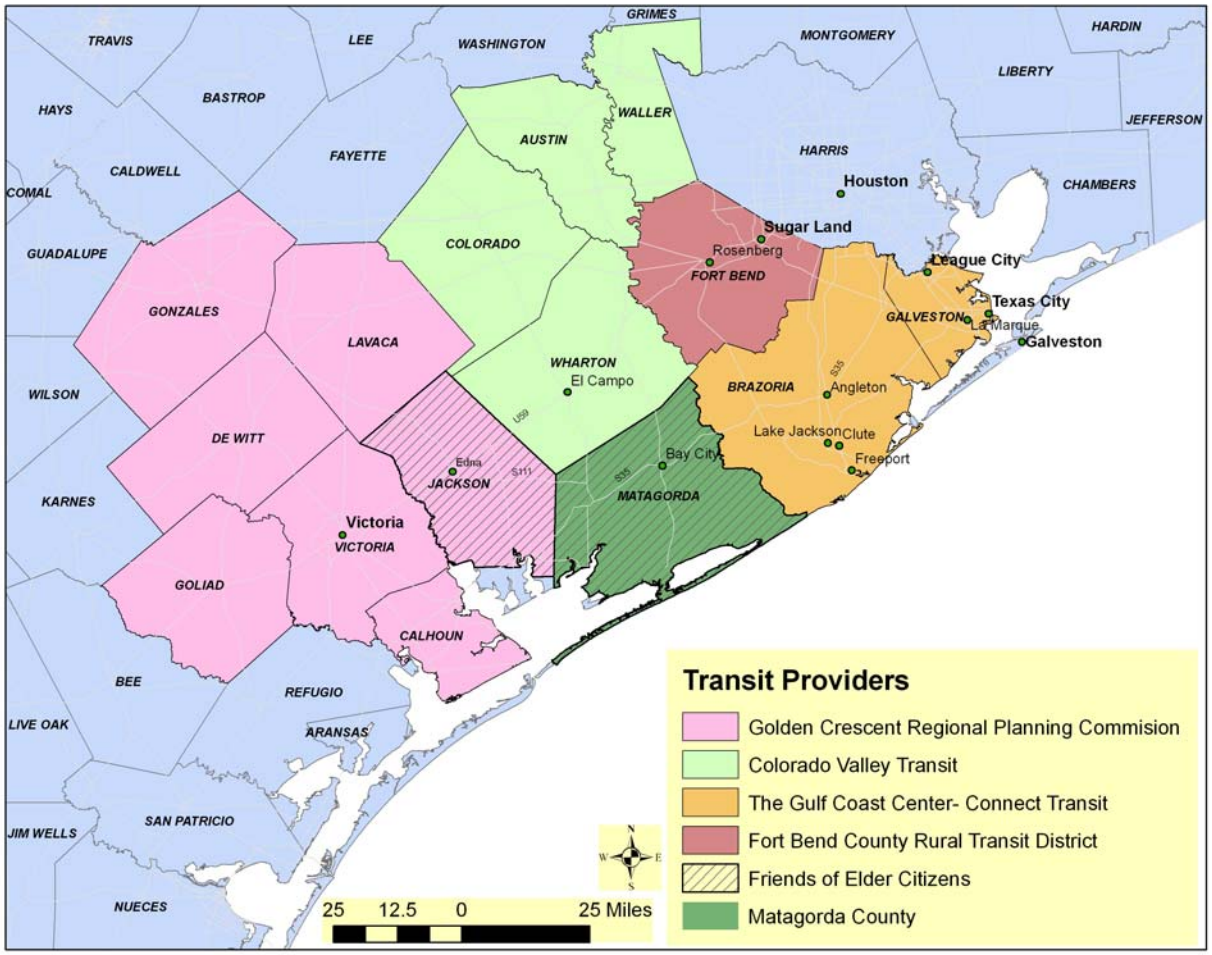

Figure 3.1: Local and Regional Transit Providers

Golden Crescent Regional Planning Commission

Organization: The GCRPC is a political sub-division of Texas and is one of the state's 24 Council of Governments voluntary local government associations in Texas. The GCRPC is managed by a 29-member Board of Directors and it provides the umbrella under which the Area Agency on Aging, and other services are organized. RTransit is the transportation division of GCRPC, which consist of both the rural (RTransit) and urban (Victoria Transit) providers. Services are directly provided in Victoria County and contracted in Calhoun, Goliad, Gonzales, Jackson, Lavaca and Matagorda counties.

RTransit's director is responsible for the day-to-day delivery of both directly provided and subcontracted transportation services. There is an operations manager overseeing the Fleet Services, Bus Operators and Dispatch and Scheduling Services divisions. The Fleet Services division is charged with maintaining the fleet. The division has three full-time and two part-time employees. The bus operators are responsible for driving the vehicles. This division has two full-time field supervisors and one full-time risk manager/driver trainer, 22 full-time and 22 part-time bus operators. The Dispatch and Scheduling Services division has one full-time coordinator, two full-time and one part-time dispatcher and scheduler, and one full-time data technician.

Services: In FY2009, the GCRPC delivered approximately 423,000 trips between its urban and rural services. RTransit is GCRPC's rural service. It subcontracts Section 5311-funded rural service in Calhoun, Goliad, Gonzales, Jackson, Lavaca, and Matagorda counties and directly operates Medicaid and Section 5311-funded rural service in DeWitt and Victoria counties. The rural services are provided from 8:00 am to 5:00 pm, Monday through Friday. RTransit also operates a van pool service Monday through Friday, from Bay City, Blessing and Palacios to Inteplast, a plastics manufacturer, near Lolita. The service uses a 30-foot vehicle and is at, or close to, capacity.

Victoria Transit is GCRPC's urban service. It directly operates fixed-route and extended hours flex-route service in the city of Victoria. Victoria Transit operates fixed-route service 8:00 am to 6:00 pm Monday through Friday and extended hours, flex-route service in the evenings and weekends. Para-transit service, a curb-to-curb service for eligible, mobility-limited individuals, is provided within the city of Victoria.

See Table 3.1: GCRPC Trips by Type for a breakdown of services provided. (Please note that Matagorda County trips are included within these numbers.)

Table 3.1: GCRPC Trips by Type		
Transit Provider	Trip Type	Number of Unlinked Trips (FY 2009)
Victoria Transit	General Public	221,129
Victoria Transit	Medical Transportation Program	9,557
Victoria Transit	JARC	55,821
Subtotal	*Small Urban Service*	*286,507*
RTRANSIT	General Public	80,146
RTRANSIT	Medical Transportation Program	21,848
RTRANSIT	Department of Aging and Disability	16,973
RTRANSIT	5310 Elderly & Disabled	4,601
RTRANSIT	JARC (Inteplast Service)	13,051
Subtotal	*Rural Service*	*136,619*
Total	Small Urban and Rural Service	423,126

Vehicles: Victoria Transit operates 34 vehicles, of which: two are 30-foot buses, thirty are under 30-foot buses, one is a service truck and one is a car. Eighty percent of the fleet is beyond it useful life, however, the GCRPC has received U.S. Federal stimulus funds through the American Recovery and Reinvestment Act (ARRA) that are being used to replace some of the fleet.

RTransit has 59 vehicles, of which: two are 30-foot buses, 43 are under 30-foot buses, 13 vans and one car. Like Victoria Transit, much of the aging fleet is scheduled to be replaced. Recently, funds from the ARRA were used to replace some vehicles, since 80 percent of the vehicles were beyond their useful life.

Technology: Recently, Route Match software was installed on Victoria Transit and RTransit vehicles. The Route Match software provided computer assisted scheduling, dispatching and routing. According GCRPC staff, the Route Match software has enhanced service in the region, however the software is still relatively new and has not yet been used to its full potential.[1] Other technology investments include installing cameras on all of the RTransit vehicles.

Funding: In FY2009, the GCRPC managed a $1.7 million budget. It receives funding from the FTA (Section 5307 Small Urban); and TxDOT (Section 5311 Rural, Section 5310 Elderly and Disabled, and Section 5316 Job Access Reverse Commute). Local funding is generated through cash contributions, in-kind contributions, Medicaid contract revenue, and other small contracts.

[1] Interview with Lisa Cortinas: GCRPC Transportation Director – February 20, 2010.

Table 3.2: FY2009 GCRPC Funding [2]		
Source	Type	Amount
Federal	S. 5307 and S. 5311	$665,373
State	S. 5307 and S. 5311	$238,496
Local	Passenger Fares	$107,274
Local	Cash Contributions	$233,224
Contract	Medicaid	$332,344
Contract	JARC	$120,620
Contract	Affectionate Arms	$12,909
Total		$1,710,240
Op Expenses		$1,692,239
Over/(Under)		$18,001

Section 5307 and Section 5311 is formula funding, which is allocated based on a combination of need and performance. Other funding, such as Section 5316 JARC, is competitive. For example, 50 percent of the funding for extended hours service in the city of Victoria is from a three year TxDOT JARC grant that expires in August 2010, which is matched with a 50 percent local share. GCRPC has submitted a grant application for additional JARC funding to continue to support the service, however without follow-on JARC funding, the service will likely be reduced or eliminated.

Challenges: GCRPC Transportation Division faces some challenges providing transportation service in the region. The agency has been facing high employee turnover. To address this, GCRPC increased salaries and hired more full-time employees. Another challenge is the ability to secure local funds to match federal funding. Local funding is scarce and often difficult to secure which has resulted in unused federal monies.

Lessons Learned: The GCRPC has some lessons that may be applied to Matagorda County services:

- Identifying, retaining, and growing sources of local share commitment are important for transit services to remain stable and respond to growing demand.
- New services that are funded through competitive programs, like JARC, face potential reductions or elimination if other sources of funding are not identified. This can happen despite a program's high ridership.
- Contract services, like Medicaid, can be an important source of local share revenue that enables grantees to fully draw down federal funding.
- Investments in technology, like Route Match, can enhance the delivery of service but it can be a challenge to fully exploit software capabilities as it requires training and a commitment to a new way of "doing business."

[2] TxDOT FY 2009 Urban and Rural PTN 128 Report.

Gulf Coast Center – Connect Transit

Organization: The Gulf Coast Center (GCC) is "one of thirty-nine mental health/mental retardation community centers in the state of Texas providing services, programs and employment assistance for individuals with mental retardation and mental illness, HIV outreach and substance abuse recovery services under the Texas Commission for Alcohol and Drug Abuse (TCADA)." It was initiated following the passage of the Texas Mental Health and Mental Retardation Act of 1965. The GCC serves individuals from Galveston and Brazoria counties and is overseen by a nine-member Board of Trustees.

Since 1985, GCC transportation services have been provided by Connect Transit. Connect Transit's original mission was to serve individuals in need of medical transportation to hospitals and medical facilities on Galveston Island and Houston's Texas Medical Center. Transit services have since expanded to provide demand response services within Galveston and Brazoria counties when not met by the City of Galveston's Island Transit.

Connect Transit is managed by a transportation director, who directly oversees a transit manager, technical assistant, financial analyst and a safety officer. The transit manger manages a road supervisor, customer service representatives, two schedulers, two reservationist and two fleet porters. The road supervisor manages 24 drivers, one dispatcher and one secretary. Of these employees, 35 are full-time and two are part-time.

Services: Connect Transit provides services Monday to Friday, from 8:00 am to 5:00 pm for Galveston and Brazoria counties. Historically, most trips have been demand response and provided directly by Connect Transit, however a small number are contracted to private taxis, under a ride voucher program. As of 2009, other service modes are becoming a larger part of the Connect Transit's services. Fixed route services have recently been introduced into Texas City/La Marque. It has also recently begun park-and-ride services from the Mall of the Mainland to the University of Texas Medical Branch (UTMB) and anticipates a future park-and-ride from League City at Victory Lakes.

In June 2010, Connect Transit will expand to offer fixed route services in southern Brazoria County. "An alliance of the southern Brazoria cities of Lake Jackson, Angleton, Freeport, and Clute along with Brazosport College and other regional stakeholders have successfully partnered with Connect Transit in developing the new service. . . . The long awaited service will provide hourly regional and local bus service to include the cities of Angleton, Clute, Freeport, and Lake Jackson, as well as Dickenson, Baycliff and San Leon. The new bus service will provide residents with links to employment, educational opportunities, medical facilities, county services,

shopping, and recreational venues." [3] Services to West Columbia and Sweeney are only funded to September 2010 through a community block grant but Connect Transit is currently seeking follow-on funding. See Table 3.3, Connect Transit Trips by Type.

Table 3.3: Connect Transit Trips by Type	
Trip Type	Number of Trips (FY 2009)
Demand Response	55,738
Fixed Route	15,740
Park and Ride (2010 est.)	14,816
Harris County Cab Service (2010 est.)	2,796
Total	89,090

Vehicles: Connect Transit operates approximately 27 medium size, 18-21 passenger vehicles, four vans, one 9-passenger bus, one work pick-up and one sedan. The vehicles are on average six years in age. The vehicles are used for demand response, fixed route, and park-and-ride service.

Funding: In FY2008, Connect Transit managed a $2.33 million budget. It receives Section 5311 funding on behalf of the rural areas of Galveston and Brazoria Counties and the small urban Section 5307 funding on behalf of Texas City and Lake Jackson. Local funding is generated through cash contributions and contract revenues. See Table 3.4, FY2008 Connect Transit Funding.

Table 3.4: FY2008 Connect Transit Funding		
Source	Type	Amount
Rural		
Federal	S. 5307 and S. 5311	$511,828
State	S. 5307 and S. 5311	$317,302
Local	Passenger Fares	$12,532
Local	Cash Contributions	$27,783
Contract	S. 5310, Elderly & Disabled	$21,418
Subtotal		*$890,863*
Lake Jackson		
Federal	S. 5307 and S. 5311	$192,589
State	S. 5307 and S. 5311	$338,522
Local	Passenger Fares	$12,336
Local	Cash Contributions	$38,119
Subtotal		*$581,566*

[3] Press Release – New Southern Brazoria Transit Service Begins June 1, 2010. Source: Project Consultant Alan Rodenstein.

Texas City		
Federal	S. 5307 and S. 5311	$411,738
State	S. 5307 and S. 5311	$338,161
Local	Passenger Fares	$35,202
Local	Cash Contributions	$36,795
Contract	S. 5316, JARC	$39,993
Subtotal		*$861,889*
Total		$2,334,318
Op Expenses		$1,935,282
Over/(Under)		$399,036

Technology: Connect Transit uses the Shah System for reservation, scheduling, and dispatch. It has Mobile Data Terminals (MDT) on-board their vehicles. MDTs are on-board computers, linked to the dispatching center that allows the drivers to receive real-time information about schedule updates, route changes, etc. The driver can easily access maps and directions, pick-up and drop-off and dispatching instructions. The MDTs also collects trip performance data. Connect Transit is still in the process of MDT training.

Challenges: According to Connect Transit staff, they are experiencing growing pains. The agency has recently started new fixed-routes services and is planning two park-and-rides. A ongoing study on the consolidation of services between Connect and Island Transit (City of Galveston) may result in the consolidation of these two agencies' demand response services Connect Transit is also waiting on back-ordered buses for additional fixed-route service in Brazoria County. Additional support to manage the new service and capital projects is needed.

Lessons Learned: Connect Transit differs from the GCRPC in a number of areas, which may offer insight into Matagorda County's plan. Specifically:

- Connect Transit provides more of its service directly, and less through sub-contractors. This may lead to a greater control over the consistency and quality of services across its region but it may result in higher costs since there is no competitive bidding.
- Like GCRPC, local cash contributions are important so that federal funds can be drawn down. In the case of Lake Jackson and Texas City, unspent federal funds had accumulated over several years that will now be used to provide expanded fixed route services.
- Reaching funding and service agreements among municipalities and counties can be difficult because of competition among the players. Routes may have to be modified to protect local interests while still achieving connectivity goals.
- Connect Transit used to have the Medicaid contract for its region. It lost this contract in 2006. While the initial reaction was one of concern, the loss of the contract has turned into a positive experience for the organization, allowing it to dedicate resources that were

previously focused on Medicaid to expanding services elsewhere. For example, the expansion of fixed route services in southern Brazoria County is a product of this change.

- Connect Transit's expansion of fixed services in southern Brazoria County offers a good opportunity for Matagorda County residents to connect to jobs, medical facilities and other services.

Colorado Valley Transit District

Organization: CVTD began service in 1986 with service to Colorado County and shortly thereafter, expanded to Austin and Waller counties. In 1989, CVTD included Wharton County in its service area. In 1995, the Texas State Legislature authorized the creation of the Colorado Valley Transit District.

CVTD is managed by an executive director that reports to the CVTD Board of Directors. The executive director manages an assistant director, dispatchers, 21 drivers, administrative assistant and mechanics.

Services: CVTD provides demand response service to its four counties. Demand response passengers are required to make a 24-hour advance reservation and the service is described as "curb-to-curb and door-to-door." It networks its region with a combination of "Loops" and "Links," which are the deviated fixed routes. CVTD defines this as, "a bus service which travels within the city limits, county, and/or county-to-county on a route and schedule." The Loops are local routes within the larger municipalities, Bellville and Sealy, and the Links are longer routes connecting Bellville and Sealy, as well as smaller municipalities, Wallis and San Felipe.

See Table 3.4: CVTD Trips.

Table 3.4: CVTD Trips

Trip Type	Number of Trips (FY 2009)
Demand Response	NA
Fixed Route	NA
Van Pool	NA
Total	61,132

In 2010, CVTD will implement a TxDOT Section 5316 JARC-funded Van Pool Pilot Program to serve Greenleaf Nursery in El Campo, Texas. CVTD contracted with 2Plus to provide the service. 2Plus is a turn-key contractor that sells and promotes van pool programs to employees and employers, recruits and screen drivers, compiles data for reports, etc. CVTD's participation will be limited to the collection and management of information and reporting. Prior to receiving the JARC funding, the CVTD worked with small, medium and large local employers to secure local share.

The CVTD holds only one contract for services and that is with the Workforce Development Board (WDB). The CVTD is in the third year of its three year contract to provide service through a Direct Referral/Voucher program, which provides between 1,400 and 2,500 trips per month. The Workforce Development Board (WDB) provides the CVTD with a lump sum and a per trip allowance for the program and then the WDB client can use any of the CVTD services.

Vehicles: CVTD has 22, Type III vehicles and 7 mini-vans for demand response and deviated and fixed route services.

Funding: In FY2009, the CVTD operated a $1.13 million program.[4]

Technology: CVTD will install new AVL technology on its fleet and is currently in the bid process. Currently, CVTD has surveillance cameras and little new technologies. The greatest challenge for CVTD is local funding for fleet upgrades and services.

Challenges: Like Connect Transit, the CVTD used to hold the Medicaid contract until 2007 when it was awarded to another organization. This made it more difficult for the CVTD to secure the local share that it needed to draw down federal funding. The CVTD has not expressed an interest in becoming more actively involved in Matagorda County. They have limited staff and the priorities within their current service area takes precedence over expanding into a new service area.

Lessons Learned: The following lessons may provide some insight into Matagorda County transit services:

- Organizations should be wary about becoming too dependent on a revenue resource, like Medicaid. They should be consistently developing other partnerships to bring other local resources to bear for the provision of transit. Relationship building is also "a slow, slow process." The CVTD is pleased with its relationship with the WDB but cautions that transit advocates must be patient.
- A Ride Voucher program may not work well for Matagorda County as it does not have a large enough pool of taxi cabs and other private providers to encourage competitive pricing.
- Like the previous agencies profiled, developing and retaining sources of local share is an ongoing concern.
- The deviated fixed route, or Loop/Link network, works well for CVTD and may work well for Matagorda County. Loops operate on an hour headway, except for the transfer point for the link, where there is a 30-minute headway. They would like to decrease the Loop headways to 30 minutes by introducing a reverse-flow route, but do not have the local funds for the operation.
- A turn-key operation for van pools may be an option for Matagorda County as it decreases the administrative burden and there are good options, such as VSPI and 2Plus, operating in this region. Also, these vans will be employee-driven, unlike the GCRPC program which is operated by RTransit drivers, further decreasing CVTD's commitment of resources.

[4] Limited detail for financial and performance data was made available for this study from CVTD.

Fort Bend County Public Transportation Department

Organization: Fort Bend County (FCB) formed a Public Transportation Department in June 2005. The County provides general public demand response, rural transportation for people with disabilities, and park-and-ride/commuter services. FBC is managed by a transit director that has an assistant director. The assistant director oversees operations, finance and planning for the department. Reservation and scheduling are performed directly by the County. Driving, dispatching, and all vehicle maintenance are contracted. Including contractors, FBC maintains 12 staff positions and 25 drivers for demand response, rural disability and commuter transportation services.

Services: FBC demand response services are provided through a contract agreement between the County and AFC Corporate Transportation. Demand Response and Section 5310 Elderly and Disabled Services are operated Monday through Friday to accommodate first drop-offs to destinations by 8:00 am and last pick-ups from destinations by 5:00 pm. Passengers may request service up to 30 days in advance of the need for service or as late as the day before service is needed.

FBC offers commuter services through a contract with TREK, a non-profit transportation management organization, to the Greenway Plaza and Galleria areas of Houston. It operates Monday through Friday (excluding holidays) from 5:10 am to 8:10 am and from 3:15 pm to 6:30 pm. Within Fort Bend County, each route begins in the City of Sugar Land where there are two park-and-ride lots: one is located at the University of Houston at University Boulevard and US59 Southwest Freeway and the other is located in the First Colony Mall AMC Theatre parking lot at Highway 6 at Highway 59. The Greenway Plaza route offers passengers the choice of 10 service times over a three hour period in both morning and evening while the Galleria Mall offers eight choices over the same period of time. The Greenway Plaza route offers four drop-off locations and the Galleria route offers 10 drop-off locations.

In FY2009, FBC transit began enhanced services for rural residents with disabilities that is funded through the Section 5317 New Freedom program. The New Freedom service is an expansion of the demand response and is only offered to residents that are disabled. The total FY2009 trips by type are shown in Table 3.5: FBC Trips by Type.

Table 3.5: FBC Trips by Type in FY2009

Trip Type	Number of Trips (FY 2009)
Demand Response	108,869
Fixed Route	62,866
New Freedom	3,927
Total	175,662

Vehicles: FBC maintains vehicles for its demand response, rural disability, and commuter services. Typically, services are provided on 6 to 21-passenger vehicles that are all wheelchair accessible. Commuter services use a fleet of nine wheelchair accessible vehicles. Five vehicles are dedicated to the service accessing the Greenway Plaza area of Houston and four vehicles are dedicated to the service accessing the Galleria area of Houston.

See Table 3.6: FBC Vehicles.

Table 3.6: FBC Vehicles

Demand Response Vehicles	**Number**
2001 Eldorado Aerolite, 11 passenger	2
2005 Eldorado Aerolite, 8 passenger	1
2006 Eldorado Aerotech, 21 passenger	3
2007 Gosen GCII, 15 passenger	4
2010 Eldorado Aerotech, 18 passenger	3
Subtotal	15
New Freedom / Rural Disability Vehicles	
2008 Chevrolet Uplander, 6 passenger	3
Commuter Services	
Varies, 28-passenger with ADA lifts	9
Total	27

Funding: Demand response services are funded from the TxDOT Section 5310 Elderly and Disabled Transportation program, TxDOT Section 5311 Rural Public Transportation Program, New Freedom (Rural) Program Funding and Federal Transit Administration (FTA) Section 5307 Urban Area Program Funding.

Technology: FBC currently utilizes Trapeze for scheduling and dispatching its demand response and New Freedom services. Trapeze is wireless network with "mobile applications, including data, voice, video, and real-time location services." [5] FBC is seeking proposals to provide vehicle tracking, automatic pay, and voice and data communications. The County is also pursuing automatic vehicle locator technology.

Challenges: FBC is currently working on expanding its commuter/park-and-ride services throughout Fort Bend County. A third commuter service to the Texas Medical Center in Harris County will begin in 2010. In conjunction with this service, the County will build a new park-and-ride facility at the Fort Bend County Fairgrounds located on Highway 36 in Rosenberg. The

[5] Trapeze Network: Retrieved February 9th, 2010: http://www.trapezenetworks.com/about_trapeze/company_overview

County is currently working to find additional locations within the county both east and west of the existing commuter routes where additional park-and-ride facilities can be established.

In addition, FBC is working with the City of Sugar Land to develop a circulator bus service in the downtown and shopping areas of the city. Like Connect Transit, FBC transportation services are growing fast and the department is adjusting to the growing pains.

Lessons Learned:

- The FBC has a well-developed park-and-ride system that connects to the Greenway Plaza and Galleria area. A future park-and-ride to the Texas Medical Center may offer Matagorda County greater connectivity to Houston through FBC's park-and-ride system.
- The FBC contracts the majority of its functions, with the exception of reservations and scheduling. This decreases the administrative burden of managing a larger transportation organization while still ensuring that services can be delivered.
- The FBC is organized under Fort Bend County. A similar organization structure could be an option for Matagorda County if it wished to operate and manage its transit systems. However, this will increase the administrative cost and burden. A more cost-effective approach is to maintain a relationship with an existing transit provider, like the GCRPC or the GCC, and existing contractors, like the FOEC.

Peer Review: Cost Effectiveness and Service Efficiency

Matagorda County may expect a similar cost and service effectiveness and service efficiency to its peer regional transportation providers. TGC reviewed statistics for each of these service providers for FY2008 and calculated service efficiency, and cost and service effectiveness measures

See Table 3.7: Peer Comparison of Service Efficiency, Cost Effectiveness, and Service Effectiveness.

Table 3.7: Peer Comparison of Service Efficiency, Cost Effectiveness, and Service Effectiveness

	State Average for Non-urbanized Area Programs	GCRPC	GCC	CVTD	FBC
Operating Expense	$1,799,304	$1,838,445	$1,935,282	$1,333,193	$1,569,333
Annual Vehicle Revenue Miles	659,308	867,558	519,106	598,510	825,413
Annual Unlinked Trips	126,854	124,738	50,622	76,306	159,304
Annual Vehicle Revenue Hour	37,766	47,648	28,960	38,397	38,713
Total Revenue Vehicles	34	42	50	35	22
Service Area Population	147,130	160,333	140,616	117,124	37,891
Service Efficiency					
Op Exp / Vehicle Rev Mi	$ 2.73	$ 2.12	$ 3.75	$ 2.23	$ 1.90
Op Exp / Vehicle Rev Hr	$ 47.64	$ 38.58	$ 66.83	$ 34.72	$ 40.54
Cost Effectiveness					
Op Cost / Passenger Trip	$ 14.18	$ 14.74	$ 38.23	$ 17.47	$ 9.85
Service Effectiveness					
Trips / Vehicle Rev Mile	0.19	0.14	0.10	0.13	0.19
Trips / Vehicle Rev Hr	3.36	2.62	1.75	1.99	4.12
Source: 2008 TxDOT PTN Data					

Service Efficiency measures the cost of operating the transit service (labor, cost of fuel, maintenance, etc.) compared to the number of hours and the number of miles during which the vehicles were providing service. The measure reflects how cost effectively the provider operates its vehicles, regardless of ridership, with lower ratios indicating better performance. In the above analysis, those agencies which contracted services, GCRPC and FBC, reflect higher service efficiency than those agencies which directly provide services, GCC and CVTD. Based on peer performance, Matagorda County may expect an estimated operating cost per vehicle revenue mile of $2 to $4 and per vehicle revenue hour of $34 to $68.

Cost Effectiveness measures the cost of operating the transit service compared to the number passenger trips. In rural areas, the cost per trip will be higher because of the limited ridership and

longer trip lengths. Based on the peer costs, Matagorda County's estimated operating cost per passenger trip is $9.85 to $38.23. Within the peer group, cost effectiveness varies considerably. FBC has the best cost effectiveness, delivering a trip for less than $10.00. The source of its advantage is not known but it may be related to lower costs through competitive bidding and high utilization rates of its commuter services. GCC/ Connect Transit reflects the lowest cost effectiveness, delivering a trip for less than $40.00. Similarly, the source of the disadvantage is not known but it may be related to the lower utilization of its vehicles for demand response trips.

Service Effectiveness measures how well the system delivers service to passengers, regardless of the cost. A high ratio indicates high service effectiveness. Based on the peer costs, Matagorda County's estimated passenger trips per vehicle revenue mile is 0.10 to 0.19 and 1.75 to 4.12 per vehicle revenue hour.

Overview of Matagorda County Transportation Providers

Friends of Elder Citizens

Organization: Friends of Elder Citizens, Inc. (FOEC) is a 501c(3) nonprofit organization with a mission to provide needed services to the people 60 years and older in Matagorda and Jackson counties. The FOEC began providing nutrition and activities in 1979. In order to meet its mission, the FOEC offered transportation services to its clients. From this beginning, the FOEC's expertise in transportation grew and in 1995, it began providing general public transit service. At that time, the FOEC became a sub-contractor to the GCRPC to provide demand response services in Matagorda County. It later became a sub-contractor, first to the GCRPC, and then the American Medical Response (AMR), to provide Medicaid trips.

Outside of its public transit and Medicaid services, the FOEC provides transportation services to its senior clients that are not open to the general public or Medicaid clients. Under its FOEC senior program, it provides transportation for its nutritional program to bring individuals to the center for communal meals or to take meals to home-bound individuals. It also provides transportation for activities and outings. This study focuses on only the public and Medicaid portions of FOEC's service.

The FOEC is led by an executive director who oversees all of its operations, including the Thrift Shop and Food Pantry, nutrition and activities programs, as well as the transit services. Assigned to Matagorda County are five drivers and two reservation/scheduling and dispatch (RSD) personnel. The drivers provide both general public and Medicaid trips. The RSD personnel are located in the FOEC facilities in Bay City and Palacios.

Services: As the demand response provider, the FOEC delivers transit services to the general public. The FOEC requires a 24-hour advance reservation but encourages a 48-hour reservation. It is a curb-to-curb service. No scheduled services are provided and it limits its trips to Houston on Tuesdays and to Galveston on Thursdays. The FOEC provides subscription service to the Texas Mental Health Mental Retardation (MHMR) Edith Armstrong Center in Bay City for eight riders out of Bay City and nine riders out of Palacios. No other subscription services are provided.

The FOEC provides service Monday through Friday from 8:00 am to 5:00 pm. Fares are $1.50 for in-town trips; $3.00 for in-county trips; $22.50 for county-to-county trips to Lake Jackson, Angleton, Wharton, and El Campo; and $45.00 for regional trips to Houston, Galveston, Port Lavaca, Missouri City, and Victoria. Fares are half priced for seniors, people with disabilities, and children.

From FY2007 to FY2009, the FOEC provided between 25,000 and 36,000 trips each year. During this time, not only did the number of trips fluctuate considerably, but the composition of what type of trips provided changed as well. In 2007, general public trips accounted for about 74 percent of the service being supplied, or about 22,000 of 29,000 trips. In 2008, this increased to 23,400 trips before decreasing to 11,000 trips in 2009, or about 43 percent of all trips.

Table 3.8: FOEC Trips[6]

Trip Type	2009	2008	2007
General Public	10,836	23,399	21,742
Medicaid	5,635	5,009	4,997
Department of Aging and Disability	8,876	7,511	2,607
Total	**25,374**	**35,919**	**29,346**

According to FOEC staff, the FY2007 to FY2008 increase in general public trips was the result of service advertising and promotion. However, this increase in awareness did not carry forward into FY2009, when average monthly trips dropped from approximately 1,900 per month to 900 per month. In fact, the number of monthly trips dropped from about 2,200 at the end of FY2008 to 900 at the beginning of the next month in FY2009, a period of one month.

During this same period, the number of Medicaid trips increased from 17 percent of all trips in FY2009 (or 4,997 trips) to 22 percent (or 5,635 trips) in FY2009. The FOEC also increased its trips under the Department of Aging and Disability from about 2,600 in FY2007 to almost 9,000 in FY2009.

The variability in the types of trips provided is a concern. First, the number of general public trips has decreased substantially over the three year period. While it is recognized that the burden of meeting Medicaid trips can be substantial, the provision of financial and vehicle support from the TxDOT Public Transportation Division comes with the requirement that these same resources be used to deliver general public transportation. It appears that general public transportation has not been given the same level of priority as Medicaid trips in recent years.

Despite this, the County benefits from both programs because, to some extent, each program is dependent on the other. The public transit program would be difficult to operate without the addition of Medicaid revenue to help fund operations. Likewise, the Medicaid contract would be difficult to fulfill without the public transportation funding and vehicles.

[6] Texas Department of Transportation, FOEC PTN128 Reports for FY2007 to FY2009

Like the regional providers, the FOEC's service efficiency, cost effectiveness, and service effectiveness was reviewed. In general, its performance statistics are better than its regional peers for Service Efficiency and Cost Effectiveness and on par for Service Effectiveness.

Table 3.9: FOEC Service Efficiency, Cost Effectiveness, and Service Effectiveness 2007-2009

	2007	2008	2009	Peer Average
Operating Expense	$ 266,277	$ 284,544	$273,143	
Annual Vehicle Revenue Miles	196,861	186,393	199,162	
Annual Unlinked Trips	29,346	35,919	25,374	
Annual Vehicle Revenue Hour	9,659	9,383	9,094	
Total Revenue Vehicles	5	5	5	
Service Area Population	~50,000	~50,000	~50,000	
Service Efficiency				
Op Exp / Vehicle Rev Mi	$ 1.35	$ 1.53	$ 1.37	$2.57
Op Exp / Vehicle Rev Hr	$ 27.57	$ 30.33	$ 30.04	$46.00
Cost Effectiveness				
Op Cost / Passenger Trip	$ 9.07	$ 7.92	$ 10.76	$19.19
Service Effectiveness				
Trips / Vehicle Rev Mile	0.15	0.19	0.13	0.15
Trips / Vehicle Rev Hr	3.04	3.83	2.79	2.76
Source: 2007-2009 TxDOT PTN Data				

Vehicles: The FOEC maintains five service vehicles in Matagorda County and has two vehicles in reserve. Of these, two vehicles were purchased with private funds and five were purchased with TxDOT funds. See Table 3.10, FOEC Vehicle Inventory.

Table 3.10: FOEC Vehicle Inventory

Type	Year	Purchased	Fuel	Mileage	Funding	Cost	Federal	State	Local	Remaining Useful Life	Remaining Local Value
PRIVATE PURCHASE											
Ford Van	2003	Jun-04	Gas	235839	Private	NA				0 years	
Chrysler Car	2006	May-07	Gas	119358	Private	NA				2 years	
Ford E350	2009	Apr-09	Gas	15,950	Private	NA				4 years	
Ford Taurus	2006	Apr-09	Gas	80,140	Private	NA				1 year	
TXDOT PURCHASE											
Ford Eldorado	2002	NA	Gas	246,680	TxDOT	$ 48,630	80%	0%	20%	0 years	$ -
Ford E350	2008	2008	Gas	18,494	TxDOT	$ 42,393	98.3%	TDCs	1.7%	3 years	$ 288
Ford Eldorado	2002	NA	Gas	260,885	TxDOT	$ 48,630	80%	0%	20%	0 years	$ -
Goshen Pacer	2009	2009	Diesel	1,517	TxDOT	$ 56,880	100%	0%	0%	4 years	$ -
Goshen Pacer	2010	2010	Gas	1,472	TxDOT	$ 49,138	80%	0%	20%	5 years	$ 9,828

Funding: The FOEC receives federal, state, local, and contract funding for its transit services through the GCRPC, which is the grantee for Matagorda County.

Table 3.11: FOEC Transit Financial Resources			
	FY2007	**FY2008**	**FY2009**
Federal	$ 71,808	$ 61,100	$ 79,034
State	$ 54,107	$ 44,623	$ 48,269
Local			
Fares	$ 9,416	$ 12,080	$ 17,766
Other	$ 10,897	$ 17,000	$ 5,864
Medicaid Contract	$ 168,978	$ 159,220	$ 177,157
Dept. of Aging	$ 18,583	$ 0	$ 11,989
Total	$ 333,789	$ 294,023	$ 340,079
Cost to Operate	$ 266,277	$ 284,544	$ 273,143
Over/(Under)	$ 67,512	$ 9,479	$ 66,936

Federal Funding: The FOEC receives Federal Section 5311 Non-urbanized Area Formula Funding through the GCRPC, which allocates a percentage of this funding to Matagorda County. The Section 5311 program provides support to rural areas and urbanized areas with populations less than 50,000. In FY2009, the GCRPC received $619,002 to support rural services. Of this, $79,034 (or 12.77 percent) was allocated to Matagorda County. The GCRPC receives funding through a formula allocation based on performance and need, and then allocates these funds using an internal allocation system. See Figure 3.2: TxDOT Rural Funding Allocation Formula.

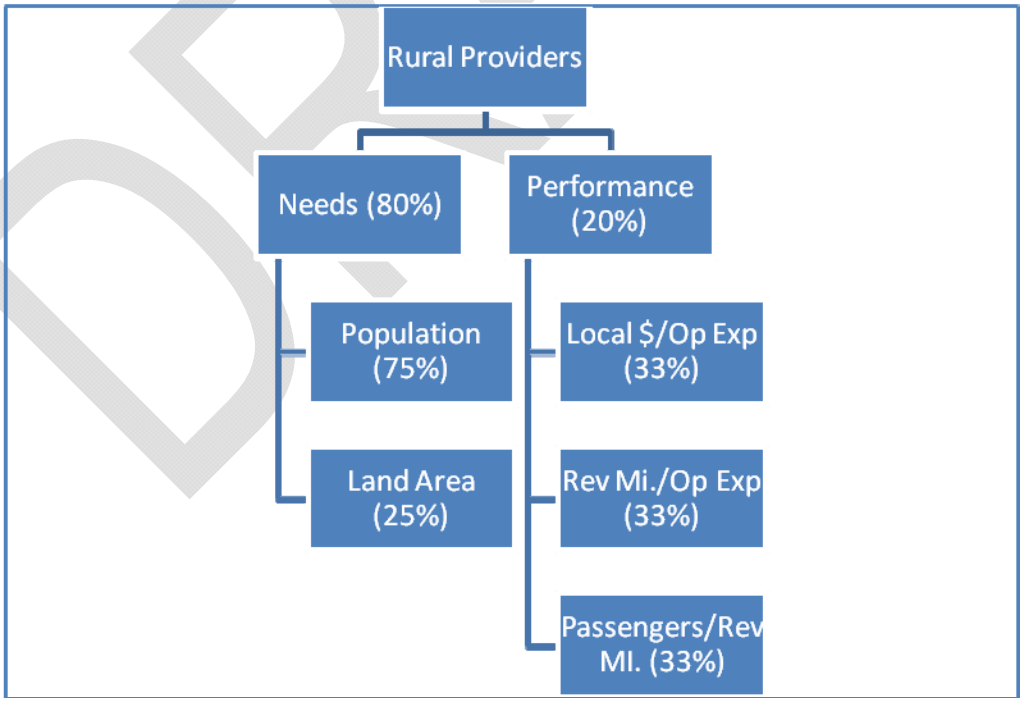

Figure 3.2: TxDOT Rural Funding Allocation Formula

State Funding: Similar to the federal funds, the FOEC receives State Public Transportation Funding through the GCRPC. In FY2009, the GCRPC received $535,018 to support services. Of this, $48,269 (or 9 percent) was allocated to Matagorda County. The state funds are also distributed using a funding formula based on Needs and Performance and then re-allocated internally by GCRPC.

Local Sources

Fares: In FY2009, the FOEC supported 6.5 percent of its cost of operations with fares. This is slightly above the state average of 6 percent and an improvement over a 4.2 percent farebox recovery rate in FY2008 and a farebox recovery rate of 3.5 percent in FY2007.

Medicaid: The Medicaid contract is a significant source of funding and local share. Between FY2007 and FY2009, over fifty percent of its total revenue was generated by the Medicaid contract. Because federal funds must be matched by local funds, it is important to have sufficient an equal or greater amount of local funds in order to "draw down" all the federal funds allocated to the area.

Therefore, an important consideration to general public transit in Matagorda County is the Medicaid contract. If the FOEC's contract to provide Medicaid were removed from the funding equation, the FOEC would not be able to draw upon its full allocation of federal funding, unless other local share sources were secured. The funding impact of the Medicaid contract extends beyond the financial value of the contract because it does contribute local share, enabling federal funds to be drawn down. With its loss, what is currently a funding balance of about $60,000 becomes a funding deficit between $100,000 and $150,000 annually.

See Table 3.12: FOEC Funding Balance with Medicaid Contract and Table 3.13: FOEC Funding Balance without Medicaid Contract.

	Table 3.12: FOEC Funding Balance with Medicaid Contract				
			FY2007	FY2008	FY2009
A	Operating Cost		$ 266,277	$ 284,544	$ 273,143
B	Less Fares		$ 9,416	$ 12,080	$ 17,766
C	Net Operating Cost		$ 256,861	$ 272,464	$ 255,377
D	Federal Share (C X 50%)	50%	$ 128,431	$ 136,232	$ 127,688
E	Local Share (CX 50%)	50%	$ 128,431	$ 136,232	$ 127,688
	FEDERAL RESOURCES				
F	Section 5311		$ 71,808	$ 61,100	$ 79,034
G	Federal Resources Total (=F)		$ 71,808	$ 61,100	$ 79,034
H	Federal Share Unfunded (D-G)		$ 56,623	$ 75,132	$ 48,654
	LOCAL RESOURCES				
I	Section 5311_TXDOT		$ 54,107	$ 44,623	$ 48,269
J	Medicaid Contract Revenue		$ 168,978	$ 159,220	$ 177,157
K	Aging and Disability Contract Revenue		$ 18,583	$ -	$ 11,989
L	Other		$ 10,897	$ 17,000	$ 5,864
M	Total Local Resources (I+J+K+L)		$ 252,566	$ 220,843	$ 243,279
N	Local Share Unfunded (M-E)		$ -	$ -	$ -
O	Local Share Supporting Federal Share (=H)		$ 56,623	$ 75,132	$ 48,654
p	Total Over/(Under) (M-E-O)		$ 67,512	$ 9,479	$ 66,936

With the Medicaid contract, the FOEC is able to use these resources to subsidize operating costs for which there is insufficient federal funding. Between FY2007 to FY2009, the federal share for the cost of operations ranged from $128,000 to $136,000. However, there was only approximately $71,000 on average in available federal funding. The deficit, which ranges from $48,500 to $75,000, is being absorbed by local resources, such as Medicaid revenue.

As mentioned, without the Medicaid contract, the FOEC would operate under a funding deficit and would be faced with decreasing its services. Without the Medicaid contract, there is insufficient funding to subsidize the unfunded federal portion of the services, or between $48,500 and $75,000 annually. Assuming that an hour of service costs the FOEC about $30.00, that is a decrease equivalent to 1,600 and 2,500 hours of service annually.

	Table 3.13: FOEC Funding Balance without Medicaid Contract				
			FY2007	FY2008	FY2009
A	Operating Cost		$ 266,277	$ 284,544	$ 273,143
B	Less Fares		$ 9,416	$ 12,080	$ 17,766
C	Net Operating Cost		$ 256,861	$ 272,464	$ 255,377
D	Federal Share	50%	$ 128,431	$ 136,232	$ 127,688
E	Local Share	50%	$ 128,431	$ 136,232	$ 127,688
	FEDERAL RESOURCES				
F	Section 5311		$ 71,808	$ 61,100	$ 79,034
G	Total Federal Resources		$ 71,808	$ 61,100	$ 79,034
H	Federal Share Unfunded		$ 56,623	$ 75,132	$ 48,654
	LOCAL RESOURCES				
I	Section 5311_TXDOT		$ 54,107	$ 44,623	$ 48,269
J	Medicaid Contract Revenue		$ -	$ -	$ -
K	Aging and Disability Contract Revenue		$ 18,583	$ -	$ 11,989
L	Other		$ 10,897	$ 17,000	$ 5,864
M	Total Local Resources		$ 83,588	$ 61,623	$ 66,123
N	Local Share Unfunded		$ 44,843	$ 74,609	$ 61,566
P	Total Over/(Under)		($ 101,466)	($ 149,741)	($ 110,220)

Challenges: One of the challenges for FOEC is that transportation is secondary to the organization and it has indicated that any additional transit service would be difficult to manage and operate, given its other priorities. Furthermore, the FOEC has stated that its provision of public transit is dependent upon its Medicaid contract; should it lose this contract, it would likely cease its public transportation services. Another challenge is hiring qualified drivers for various services FOEC manages, including transit. The pool of qualified drivers in Matagorda County may be small and outside training may be necessary. FOEC does not have any newer technology for its vehicles and is not currently seeking to initiate any new large-scale projects.

A benefit to expanding FOEC's role in Matagorda County's transit is its ability to leverage local resources, such as Medicaid revenue, to attract more federal resources. One of the most persistent and difficult to solve problems for local transit providers is local share; without it, communities are not able to take advantage of state and federal programs that are focused on increasing transit for high-need individuals, such as those with disabilities, low-income workers, and job-seekers.

Other Providers

Taxi Service: There is a single taxi service in Bay City and none in Palacios. Currently, Jitney Taxi Service and Delivery operates two vehicles in Bay City, neither of which are wheelchair equipped. Prior to this, it managed a six-van operation for trips to the STP. That service dwindled over the years and was discontinued in 2001. Jitney Taxi has expressed an interest in being a part of Matagorda County's future transit plans. A taxi had previously operated in Palacios but it was discontinued when the individual chose to change careers. Another taxi driver has not established a business there and many residents of Palacios indicated that they would like to see a taxi return.

Greyhound: Greyhound, operating as Valley Transit Pool, is the inter-city bus company in Matagorda County. It leaves for Houston at 2:40 pm daily, returning at 5:00 pm. The cost per trip is between $23 and $31, one-way. Some transit agencies "inter-line" with carriers like Greyhound for their regional trips. However, Greyhound's schedule does not meet the need of many regional passengers who are going to Houston for early day medical appointments.

Greyhound leaves from Bay City for Victoria at 1:10 pm, and arrives a 6:00 pm; or leaves from Bay City at 2:40 pm and arrives at 8:40 pm. Similarly, this schedule does not meet most day-trips needs as the arrival times are too late to make appointments made during normal business hours.

Health and Human Service Agencies: The following is a review of other transportation services provided by specific agencies:

- Workforce Solutions of Matagorda County: The Workforce Solutions provides gas vouchers for its customers with a need for transportation assistance.
- Red Cross of Matagorda County: The Red Cross coordinates transportation in the event of emergencies and/or evacuations. They do not provide or support a regularly scheduled service.
- Division of Aging and Disability Services (DADS): The FOEC provides services under contract to the DADS.

- Mental Health and Mental Retardation Center/Edith Armstrong Center: The FOEC provides subscription services to 17 passengers to a sheltered workshop under contract to the MHMR Center.

- Veterans Affairs Administration: The VA provides trips to the VA Hospital in Houston, Monday through Friday. Only veterans going to the hospital are eligible to ride. It leaves from Bay City at 5:30 am and returns in the afternoon.

Conclusion

Matagorda County is located in a region that is generally well served by transit, but the County itself lacks options beyond basic demand response. The GCRPC has demand response services throughout its seven county region, a fixed route in the City of Victoria, and a vanpool that includes pick-ups in Bay City, Blessing, and Palacios. The CVTD serves the four counties to the north with a "Loop and Link" system that networks its service area through a combination of shorter and longer routes that connect at transfer stations. Like the GCRPC, it will begin operating a vanpool that will serve some employees that are based in Bay City. In June 2010, Gulf Coast Center/Connect Transit began fixed route services in southern Brazoria County, expanding its service from one that had been focused exclusively on demand response. Lastly, the FBC Public Transportation Division is expanding its park-and-ride system to provide more connectivity from its county into Houston and is expanding its demand response services to better serve people with disabilities.

Chapter 4: Transit Need and Service Gaps

This chapter outlines transit services needs and gaps in Matagorda County. Transit needs are classified by type. The location of transit need is measured using a Transit Needs Index. The transit gap for rural areas is measured using average trips per capita measurement. This gap is most appropriately filled by demand response service. Comments regarding general public transit need are reflected in General Public Surveys section. Work-related trips are evaluated using the 2000 U.S. Census Journey-to-Work data, the Longitudinal Employer-Household Dynamic database (LEHD), and general public and employer survey responses. These trips may be most appropriately filled by a combination of fixed/flex route service in Bay City, van pool or park and ride to surrounding industrial employers. Education trips to Wharton County Junior College and University of Houston at Victoria are reviewed as are local public school trips to Bay City ISD. Lastly, Medicaid trips are analyzed for their impact on the provision of transit services in Matagorda County.[1]

Location of Transit Need

Transit Needs Index

While the Trips per Capita metric may establish a range for unmet trips, it does not provide information as to where those trips are located. The Transit Needs Index (TNI) is another tool to assess an area's transit need. It relies on a weighting of demographic characteristics to formulate a score for the relative need of transit. To calculate the TNI scores for the region and within Matagorda County, data for population density, median household income, minority population, zero car households, senior population, and disability were weighted according to their impact on transit and concentration within each study area. The weights were formulated based on the experiences within small Texas cities in the 1990's and updated with 2000 U.S. Census data. See Table 4.1: TNI Weights.

Table 4.1: TNI Weights

	Rural (Demand Response)
Population Density	1.00
Low Median HH Income	2.50
Minority Population	1.00
Zero Car Households	1.50
Senior Population	2.00
Workforce Disability	2.00

The TNI results for the region are illustrated in Figure 4.1: Regional TNI. The highest transit demand is reflected in Fort Bend County, largely driven by a population density that is four to five times that of the region. Matagorda County reflects an average transit demand (7.76 v 7.69),

[1] Refer to the Public Involvement Plan for more information and comments from the General Public Survey and the Employer Survey.

but has a relatively higher incidence of households with less than median incomes and no cars, more minorities, and a higher incidence of disabilities.

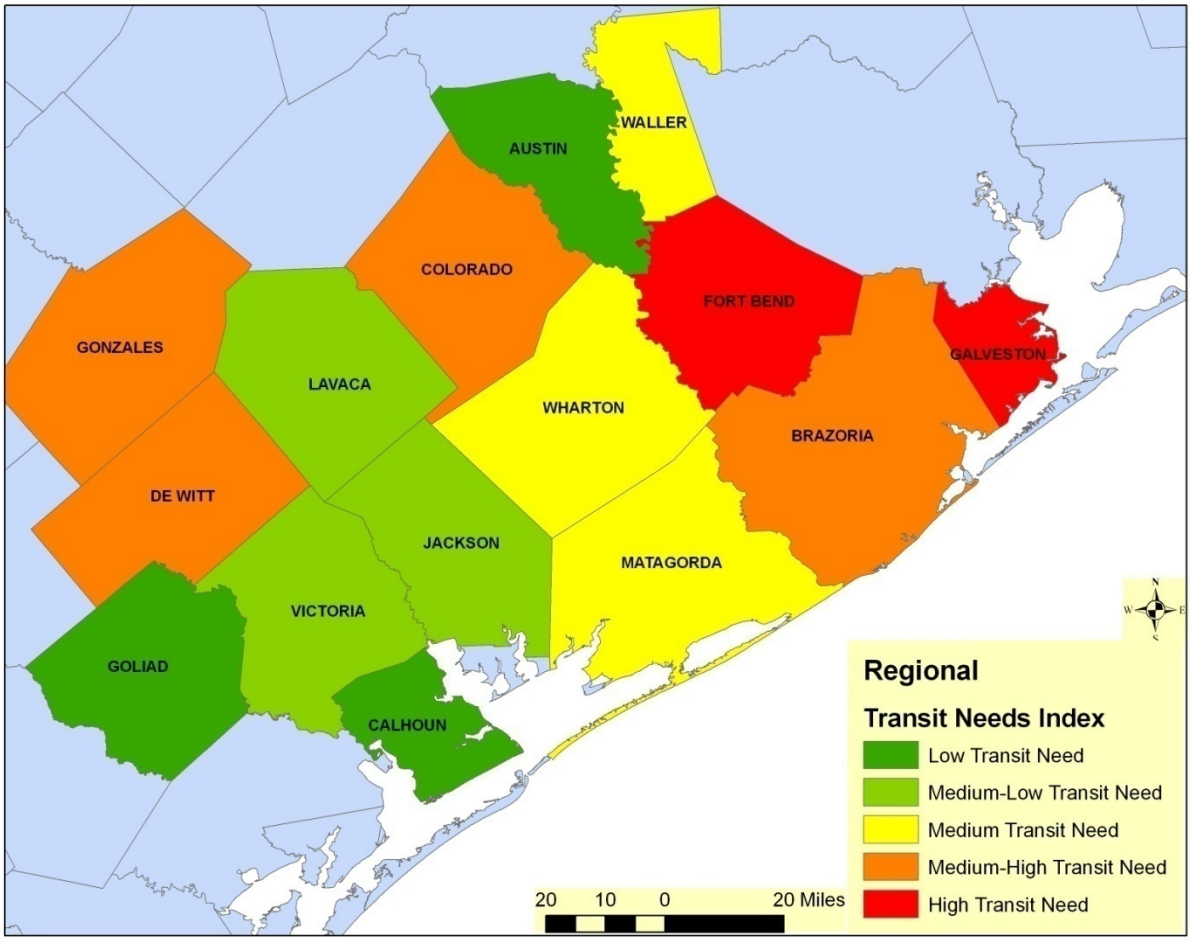

Figure 4.1: Regional TNI

The TNI results for Matagorda County are illustrated in Figure 4.2. This map shows where the transit need is the highest in the county. Like the region, the need is largely driven by population density and is heaviest in Bay City, followed by Palacios.

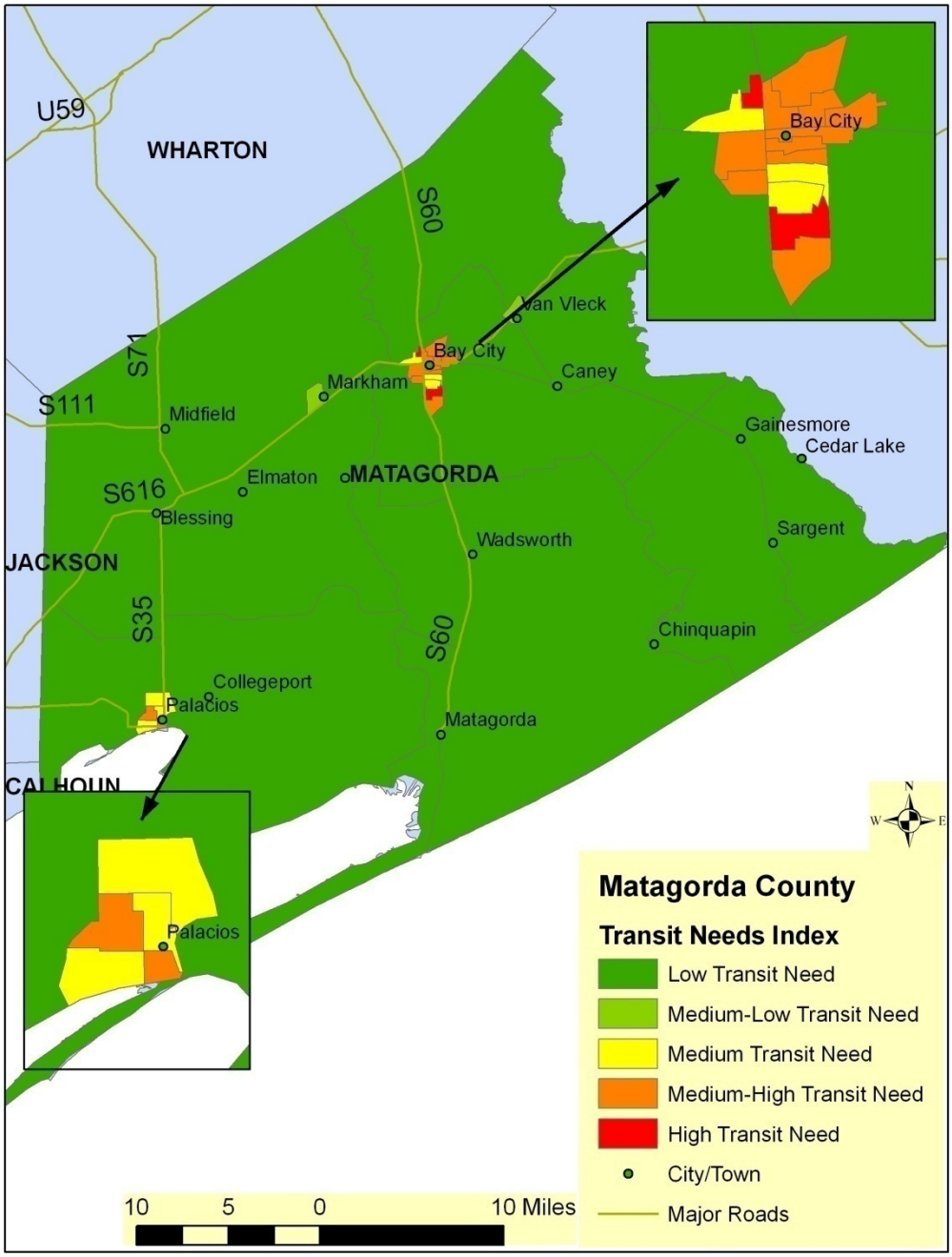

Figure 4.2: Matagorda County TNI

Demand Response Transit Gap

The number of trips per capita is an easy and quick way to see if the number of trips being provided is more or less than those provided by peer systems. As mentioned in Chapter 3, Transit Service Providers, the Friends of Elderly Citizens, or FOEC, provides demand response service under contract to the Golden Crescent Regional Planning Commission (GCRPC). TGC reviewed the number of trips (includes all trip types: General Public, Medicaid, contract, etc.) provided between FY2007 and FY2008 and compared it to a peer group (GCRPC, GCC/Connect Transit, CVTD, and FBC). This data is submitted by transit agencies to TxDOT as part of their standard reporting requirements.

Using this approach, it reflects that the level of transit currently provided in Matagorda County is below that provided by peer systems and substantially below the state average. The FOEC provided 0.80 trips per capital in 2007 and 0.96 trips per capita in 2008. By comparison, the peer group averaged 1.12 trips, and 1.44 trips; and the state averaged 4.09 trips and 4.45 trips, in FY2007 and FY2008 respectively.[2]

If the same ratio of trips per capita were to be provided as the peer group, an additional 11,753 trips in FY2007 and 17,649 trips in FY2008 would be delivered in Matagorda County. If the same ratio of trips were to be provided as the state average, an additional 114,838 trips in FY2007 and 140,455 trips in FY2008 would be delivered. See Table 4.2: Matagorda County, Unlinked Trips per Capita.

Table 4.2: Matagorda County, Unlinked Trips per Capita		
	FY2007	FY2008
FOEC	0.80	0.96
Peer Transit Providers	1.12	1.44
All 5311 Texas Providers	4.09	4.45
Additional trips if were to deliver at level of peer providers	11,753	17,649
Additional trips if were to deliver at level of Texas providers	114,838	140,455

[2] Research by the Transportation Research Cooperative, "TRCP Project A-3: Rural Transit Demand Estimation Techniques," posits four persons per capita as a reasonable maximum level of travel demand for highly rural areas. Four persons per capita are referred to as a maximum adequate demand level. One person per capita can be viewed as a minimum service level where basic demand is being met.)

General Public Survey Results

To better understand mobility needs within Matagorda County, TGC distributed a ten-question survey in both English and Spanish to area residents. In total, 157 surveys were returned. The following comments are a synopsis of the major results. For a full report on the survey, please refer to Appendix A: Matagorda County Transit Plan, Public Involvement Plan Report

Survey Respondents: Most respondents to the survey were between the ages of 51 and 65 and reside in the Bay City (77414) zip code. Most reported to be employed or retired, which corresponds to the age demographic. Places of employment that were most frequently cited are located in or near Bay City and include Matagorda Regional Hospital, self-employed, STPNOC, and United Way.

Service Needs: It is likely influenced by the large number of Bay City respondents that the highest need is demonstrated in Bay City. Questions related to Need for Service show a potential demand for bus service on a daily or weekly basis within Bay City for work and shopping trips. Bus trips outside of Bay City to other areas within the county or to other counties are limited to interest on a monthly basis. Some of these trips may be able to be accommodated within RTransit vehicles that are currently making regular trips to Houston and Galveston. See Table 4.3: Question #5, How likely are you to use a bus to take a trip?

Table 4.3: Question #5, How likely are you to use a bus to take a trip?

Answer Options	Within Bay City	To and from Bay City and Palacios	To and from Bay City and other places in the county	To and from other places in the county	From Matagorda to another county	Other
Never	17.8%	19.1%	18.8%	18.4%	17.4%	8.6%
Daily	45.2%	7.1%	9.5%	11.9%	16.7%	9.5%
Weekly	27.6%	15.3%	18.4%	16.3%	15.3%	7.1%
Monthly	13.7%	21.6%	18.6%	22.5%	18.6%	4.9%
Less Than Monthly	14.5%	18.8%	16.7%	17.4%	26.8%	5.8%

Respondents also indicated that demand for medical and shopping trips would be frequented on a weekly and monthly basis. Bus trips related to school showed the least interest; this is likely due to the type of respondent (older and working or retired), rather than a lack of need. See Table 4.4: Question #6, How likely are you to use a bus to make these kinds of trips?

Table 4.4: Question #6, How likely are you to use a bus to make these kinds of trips?

Answer Options	Work	School	Medical	Shopping	Other
Never	24.1%	28.5%	17.0%	18.5%	11.9%
Daily	38.2%	14.7%	8.8%	32.4%	5.9%
Weekly	14.1%	3.1%	23.4%	46.9%	12.5%
Monthly	8.6%	8.6%	50.0%	28.6%	4.3%
Less Than Monthly	14.8%	6.6%	39.3%	26.2%	13.1%

The most important attributes for bus service noted by respondents is distance to bus stop, fare price, and frequency of service. By comparison, respondents felt service after 5:00 pm or on the weekends was not an important attribute of the system.

Availability of Service: About 60 percent of respondents indicated that they were not aware that local bus service is available in Matagorda County. This result is similar to one reached for the 2006 Gulf Coast Regional Transportation Coordination Plan where a lack of awareness of service was cited as a need to be addressed. Better information and outreach to communities is needed to close this gap.

Work Trips

Looking at transit need from the perspective of different types of users can be helpful because different types of service may be more appropriate than others, depending on the market. For example, commuters are one of the most important transit markets and one that can be fairly well-defined. Work trips typically take place within a fairly well-defined window of time; most morning commutes occur between 6:00 am and 9:00 am in the morning and 4:00 pm to 7:00 pm in the evening. Transit services that target these travel times may be more cost-effective than a service that runs all day. Likewise, some employment centers may have a very definitive transit need that could be served well with van pools serving only that employment site. By understanding work travel patterns, Matagorda County stakeholders have the opportunity to provide more cost effective, targeted transit programs.

Journey-to-Work

The 2000 U.S. Census collects data on inter-county work trips and the data for trips originating in Matagorda County was analyzed. The total number of people recorded as making work trips is 14,762 (or about 40 percent of the county's population.). Of that, 76 percent, or 11,762 people commute within Matagorda County. The top five destinations outside of Matagorda County are:

- 10.83 percent, or 1,600 people commute to Brazoria County;[3]
- 3.5 percent, or 517 people, commute to Harris County;
- 3.25 percent, or 482 people, commute to Wharton County;
- 2.40 percent, or 358 people, commute to Calhoun County; and
- Less than one percent, or 145 people, commute to Fort Bend County.

The remaining 34 destinations represent less than one percent of commuters, or 613 people.
The Journey-to-Work data is useful in measuring the transit gap. In peer regions, transit agencies provide between 0.5 percent and 1.66 percent of all work trips. Using these averages to estimate low and average demand and 3 percent for high demand, the work-related transit gap is as follows.

Table 4.5: Work-Related Transit Gap		
Modal Split	Riders	Estimated Annual Trips
Low or 0.5 percent	74	37,000
Medium or 1.50 percent	221	110,500
High or 3.00 percent	443	221,430

[3] Large single-site Brazoria County employers include Concoco Phillips, Dow Chemical, Texas Department of Criminal Justice, and Wal-Mart. Information from: http://www.eda-bc.com/demographics/employment.asp

The data is also useful for determining where commute services between counties can be supported. Assuming that Matagorda County would achieve the same average public transit ridership for work trips as other regional providers, about one percent of these trips, or 143 riders may use public transit for work trips, or the equivalent of 71,500 trips annually.

Some of these riders are already being served by RTransit's van pool service to the Inteplast facility in Lolita, Texas and will be served by CVTD's van pool service to Greenleaf Nursery in El Campo, Texas. However, there is a service gap within Matagorda County and between Matagorda County and Brazoria County. Peak-period services within Bay City where many employers are located as well as inter-county connections to the large industrial employers, like STP, are options for closing this gap.

The Journey-to-Work data supports peak-hour fixed route service in Bay City, the site of most employment, van pool or park-and-ride service to surrounding industrial employers, and a potential commuter connection between Matagorda County and Brazoria County.

- Bay City Employment: No data is available on the total employment in Bay City. However, based on limited sample of 2002 U.S. Economic Census data for retail, food service, and accommodations, there are about 1,900 employees in Bay City. These are positions which are more likely to offer lower wage positions and which may be higher frequency users of transit. Assuming a 0.5 percent to 3 percent modal split, this employment base may generate between 10 and 57 daily riders.
- Local Industrial Employers: Local industrial employers considered for this study include STP, OXEA, Celanese, LyondellBassell, and White Stallion. Located approximately 10 miles south of Bay City, they represent an industry cluster that may be well served by van pool or park-and-ride services. Together, they represent an employment of about 1,700 individuals (See Chapter 2, Existing Conditions). Assuming a 0.5 percent to 3 percent modal split, this employment base may generate between 9 and 51 daily riders.
  (Future demand for transit services from STP and White Stallion may skyrocket due to an influx of up to 8,000 short-term construction positions over the next five years. The stakeholder committee for this report indicated a strong interest in strategies to serve these workers as a way to address roadway congestion. As of this report, neither STP nor White Stallion had expressed an interest in partnering to bring transit to these workers. As part of this study, TGC contacted Alexandria, Louisiana, which is a community that faced a similarly large influx of short-term residents, to learn how it addressed this situation. In short, the community relied on the employers to provide these services and did not invest the community's resources.)
- Regional Employers: Excluding Matagorda County, Brazoria County draws the highest number of residents for employment. As part of this study, contacted Brazoria County employer ConocoPhillips to learn of its interest in transit services. According to the Human Resources office at their facility in Sweeney, Texas, there are an insufficient

number of Matagorda County-based employees to warrant a van pool at this time. Despite this response, future transit connections between Matagorda and Brazoria counties are supportable by the data. Assuming between 0.5 percent and 3 percent of the commuters would be interested in using transit services, there is a potential market of 8 to 48 individuals who would use a transit service. This is a sufficient number to form a van pool service. See Figure 4.3: Daily Journey-to-Work Trips.

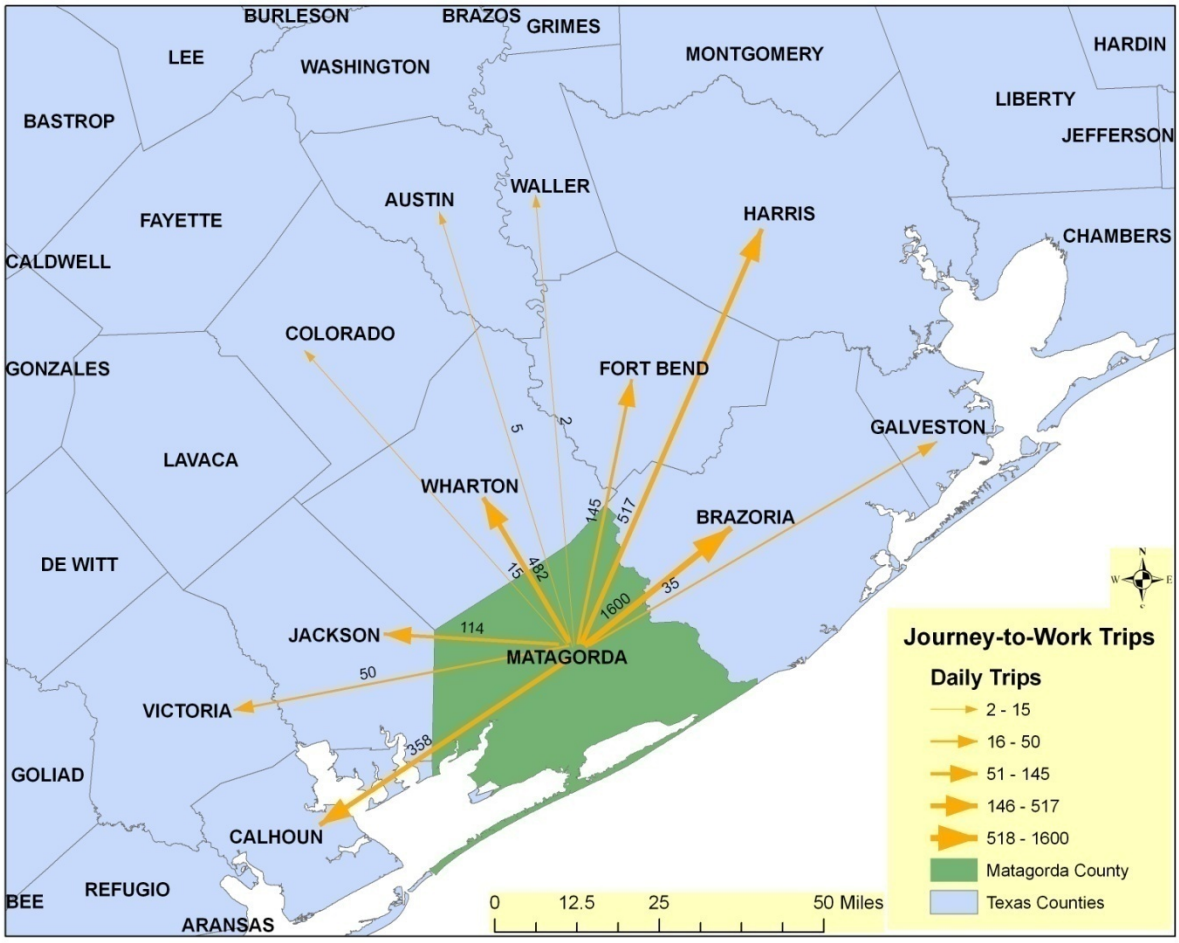

Figure 4.3: Daily Journey-to-Work Trips

Synopsis of Results: Employer Survey

TGC distributed a 20 question survey to employers whose employees may benefit from van pool or park-and-ride services. (Employers who would benefit from fixed route service were forwarded the general public survey for distribution.) In total, 87 surveys were completed. Over 90 percent were from industrial manufacturers, OXEA and Celanese. The survey collected

information about respondents' history of transit use, and their interest in using either a van pool service or park-and-ride service for their daily work commute.

Survey Respondents: Most respondents to the survey were between the ages of 45 and 59 and reside in the Bay City (77414) zip code. Most were employed by OXEA, Celanese, or firms associated with OXEA (Mustang Engineering, Mundy Corporation).

Service Needs: Forty-four (44) respondents indicated an interest in van pools. The shift with the highest concentration of potential van pool participants was from 7:30 am to 4:30 pm (7 respondents), followed by 7:00 am to 4:00 pm (5 respondents), and 8:00 am to 5:00 pm (4 respondents). Most of the respondents who indicated an interest in van pools are located in Bay City.

Thirty-five (35) respondents indicated an interest in park-and-rides. Similar to the responses for van pools, the highest concentration of demand was from 7:30 am to 4:30 pm (8 respondents), followed by 8:00 am to 5:00 pm (3 respondents).

Many who expressed interest in transit services also work longer, 10 to 12 hour shifts, beginning as early as 5:00 am. The extended shift with the highest concentration of demand for both van pool and park-and-ride services is from 7:00 am to 5:30 pm.

These trips may be served by either fixed or flex route service in Bay City; van pool or park and ride services to surrounding industrial employers in Matagorda County; and van pool services to adjacent counties' job sites.

- Fixed Route: Employment within Matagorda County is concentrated in Bay City, where an estimated 8,000
- Matagorda County Van Pool or Park and Ride
- Adjacent County Park and Ride

Education Trips

Regional Campuses: Like commuters, students are a potentially strong user of transit services. TGC looked at the need for inter-county trips to Wharton County Junior College (WCJC) in the city of Wharton and the University of Houston (UH) at Victoria in the city of Victoria.[4] In 2009,

[4] Wharton County Junior College Fall 2009 Student Demographics: http://www.wcjc.edu/about_n/Facts&Statistics_Fall-2008/Fall%20Enrollment.pdf

there were 669 students from Matagorda County attending WCJC and 55 students from Matagorda County attending UH at Victoria. At this time, these concentrations of students are insufficient to support a public transit service link.

Bay City Campus: TGC discussed the need for transit access for WCJC students who attend the Bay City campus. The campus director expressed the greatest interest in providing transit to those potential students who are candidates for the WCJC programs but cannot attend because they do not have transportation. The WCJC does not have an estimate of how many potential students this represents or where they may be coming from.

Currently, the WCJC draws most of its student body from the Bay City area, followed by Matagorda County and Wharton County. The WCJC has an enrollment of about 450 students per year and it is anticipating 10 percent annual growth. A typical student of the program is between 18 and 26 years old, and a part- to full-time worker. Therefore, the majority of programs are offered after normal work hours, either on a Monday to Wednesday or Tuesday to Thursday schedule. (These extended hours may create a challenge to serving the campus as some classes last until 9:00 pm and extending hours could become financially unsustainable in the long run.[5]) The WCJC expressed that it may be able to provide some local financial support, possibly through a student fee, for transit services if the services would obviously benefit the college.

Public Schools: Public school trips are another source of transit demand. The State of Texas will provide funding support for a school's transportation services for those students who reside farther than two miles from the school. According to the Bay City ISD Transportation Director, there are approximately 200 students who live within this "No Transportation Zone," and would benefit from transit service to school. The Bay City ISD Transportation Director indicated that the district did not have any financial resources that it could dedicate to local transit to support these services but that the parents of some children may be able/willing to pay for transportation services.

Under most circumstances, public transit cannot be used to exclusively provide school transportation. However, school children can ride the public transit vehicle that provides regularly scheduled service to the public and that is open to everyone:

> The school bus regulations define school tripper service as regularly scheduled mass transportation service that is open to the public, is designed or modified to accommodate the needs of school students and personnel, and uses various fare

[5] There are specialized funding categories, such as Job Access Reverse Commute, that will support the extension of service hours with the intent that it benefits workers and students. However, these funding sources are competitive and applicants are strongly encouraged to find alternative funding sources after 3 years.

> collections or subsidy systems. Buses used in tripper service must clearly be marked as open to the public and may not carry designations such as "school bus" or "school special." These buses may stop only at a regular bus stop. All routes traveled by tripper buses must be within the regular service area as indicated in published schedules. Schedules listing tripper routes should be on the grantee's regular published schedules or on separately published schedules that are available to the public with all other schedules. School tripper service should operate and look like all other regular service.[6]

The Bay City ISD provides transportation to seven campuses. The schedule for start and stop times is as follows:

- Bay City High – 7:45 am to 2:40 pm
- Bay City Junior High – 8:00 am to 3:30 pm
- Bay City Intermediate and McAlister Middle School – 8:00 am to 3:30 pm
- Holmes Junior High – 7:55 am to 2:55 pm
- Cherry, Linnie Roberts, and Tenie Holmes Elementary – 7:55 am to 2:55 pm

Figure 4.5: Bay City ISD No Transportation Zone illustrates that the schoolchildren that live within the core of Bay City, no matter what school they attend, do not receive transportation services. Approximately, these boundaries are Nancy Avenue to the west, Nichols Avenue to the east, 12th Street to the north, and Hillcrest Drive to the south. According to the 2000 U.S. Census, there are approximately 2,573 households in area and 1,711 school age children.

[6] http://www.fta.dot.gov/FY2007TriReview/17school.htm

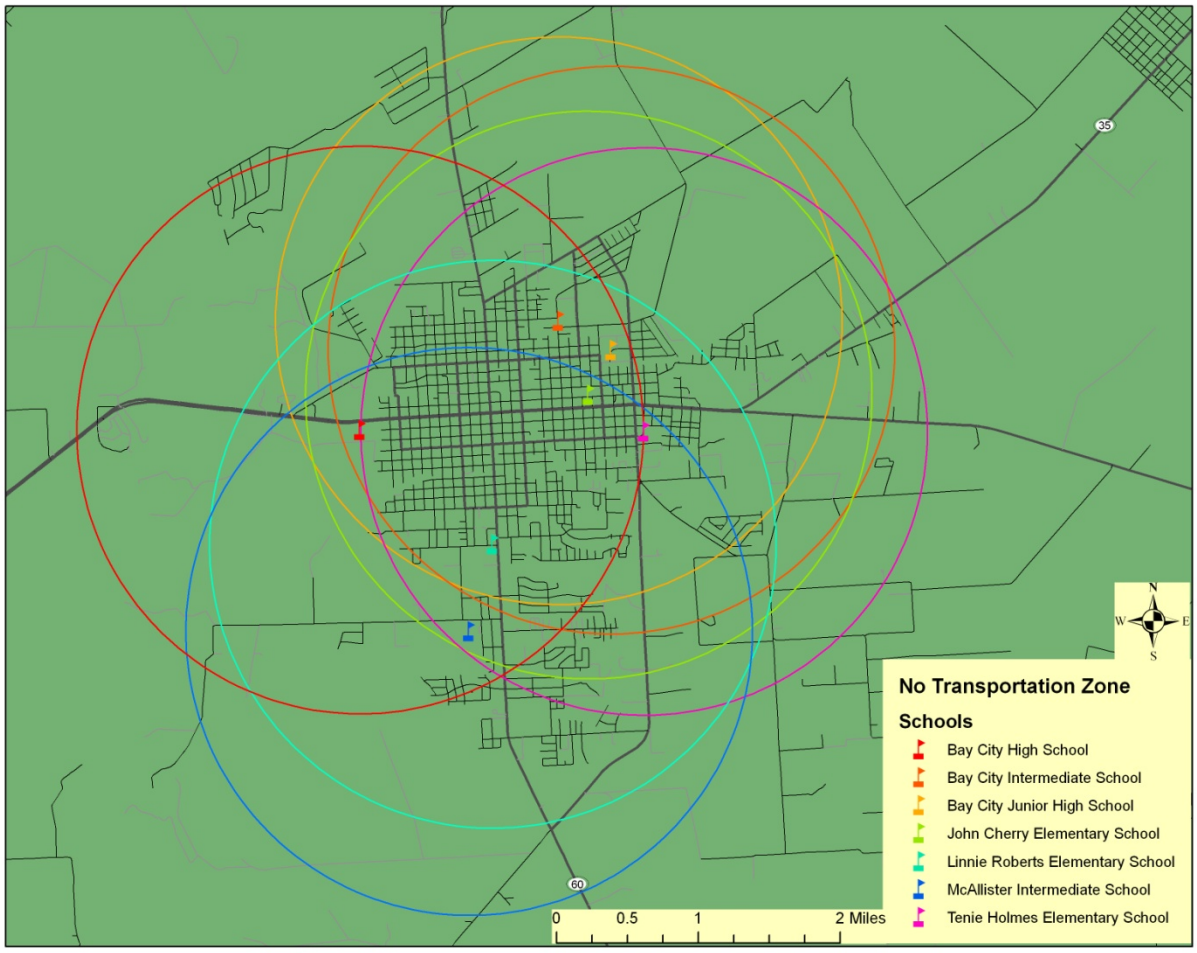

Figure 4.5: Bay City ISD No Transportation Zone

Medicaid Trips

In FY2008, the FOEC delivered 6,515 Medicaid trips and was reimbursed $159,220 or $24.44 for each trip it provided. Figure 4.5: FY2008 Medicaid Trips, illustrates the origin of Medicaid trips by color and by zip code.

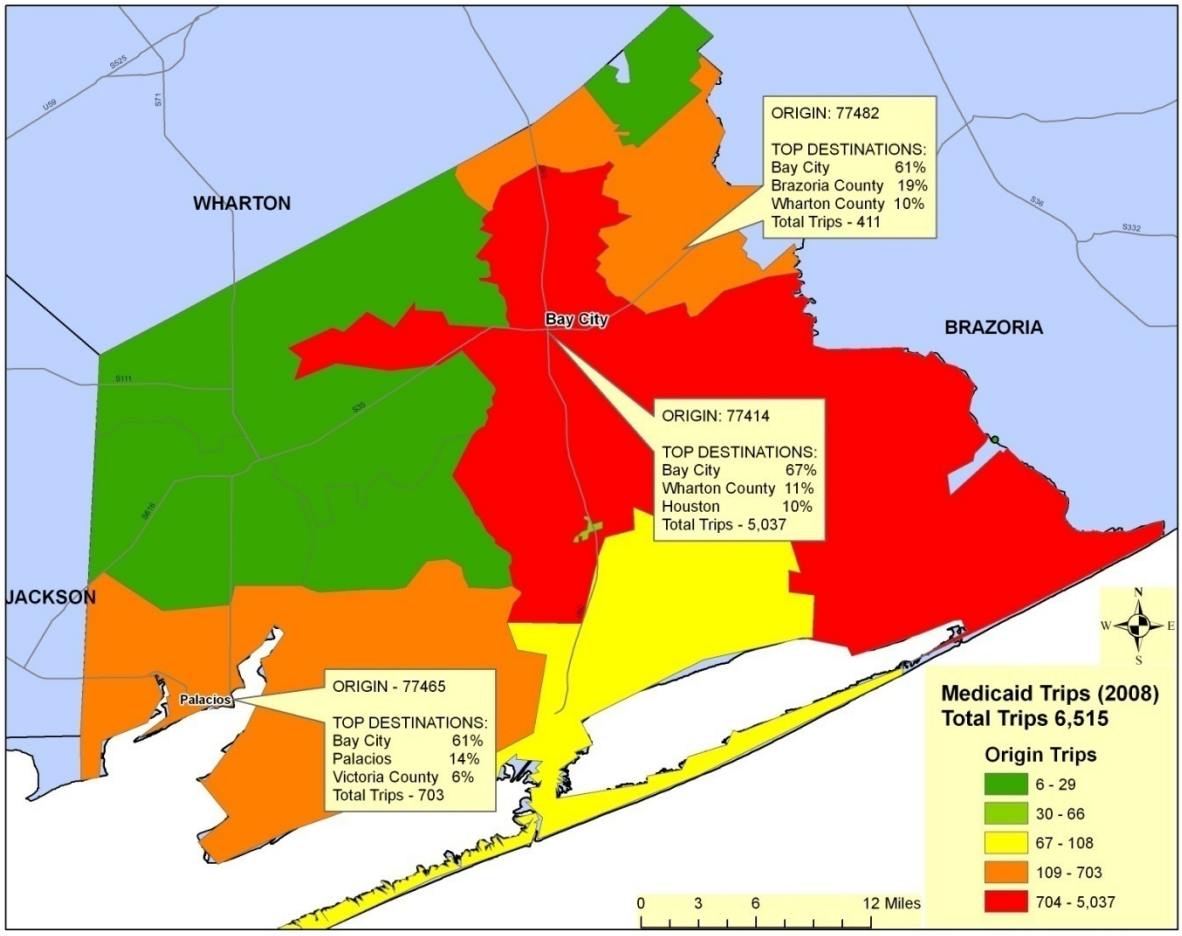

Figure 4.5: FY2008 Medicaid Trips

For the most productive three zones (representing 6,151 or the 6,151 trips provided), top destinations are noted. These are as follows:

- Bay City: 62 percent, or 4,054 trips
- Wharton County: 9.13 percent, 595 trips
- Houston: 7.74 percent, or 504 trips
- Palacios: 1.5 percent, or 98 trips
- Brazoria County: 1.2 percent, or 78 trips

- Victoria County: Less than one percent, or 42 trips

Because Medicaid requires that its contractor deliver the trip itself, there is little opportunity to benefit from regional connectivity. In other words, FOEC cannot transfer its Medicaid riders to another vehicle traveling to Houston, even if the destinations are the same and both providers are Medicaid contractors. However, Medicaid riders can be joined by general public/demand response riders, as long as the Medicaid trip is not denied. So, vehicles that are providing Bay City Medicaid trips, which are the majority, can also provide general public transit.

There are five vehicles that serve Matagorda County; two of these vehicles serve Palacios and three vehicles serve Bay City. According to FOEC staff, these vehicles are frequently being dispatched on Medicaid trips although FOEC tries to leave at least one vehicle in each city for public trips. It is the FOEC's practice to use its vehicles for both types of trips but there may be under-utilized capacity on Medicaid-trip vehicles that could be used to fill Bay City transit gaps.

Conclusion

The Existing Conditions report (Chapter 3) and Transit Need and Service Gaps (Chapter 4) provide a good basis upon which to decide what types of service are appropriate and to estimate the potential ridership these services may attract. The following are key points:

- Unmet Need: Compared to the per capita delivery rate of the region's peer transit systems, Matagorda County is underserved by approximately 20,000 trips annually. This shortfall represents an almost doubling of the 25,000 trips provided in FY2009. These trips represent unmet need within all types of service: fixed/flex route, demand response, commuter, etc.
- Location of Need: Population density largely drives need within the county. The highest need is within Bay City, and followed by Palacios.
- Service Gaps: The following are highlights noted in this review:
    - Lack of information on the availability of transit remains a barrier to service delivery. In the General Public Survey, over 60 percent of respondents indicated that they did not know there was public bus service available in the county.
    - According to the General Public survey, daily or weekly service within Bay City is the highest scoring need. The next highest scoring need is weekly or monthly service between Bay City and Palacios. These trips are most likely to be work trips. After that, trips for medical and shopping are high scoring.

- Bay City employers, in particular, the hotels, have indicated a need for transit service that would benefit their employees.

- Based on the tepid response to the Employer's Survey from most of the region's large industrial and energy employers, there is little active interest on behalf of the employer in commuter or van pool services at this time. However, where responses were collected, between 35 and 43 employees indicated interest in either van pool or park-and-ride services.[7]

  If commuter services were offered in the county, and these services attracted the region's average market share (about one percent), approximately 115 commuters may be served.

- Regionally, commuter connections are strongest between Matagorda and Brazoria counties. Brazoria County attracts the second-highest number of Matagorda County workers, or about 1,600 people. A one percent market share represents 16 commuters, a number that can be most effectively served by van pool. Attempts to survey employees of one Brazoria County employer, Conoco Phillips, were unsuccessful but other large employers of the region include Dow Chemical, the Texas Criminal Justice System, and Wal-Mart.

- Education trips may be needed to the WCJC – Bay City campus and to Bay City ISD public schools. The WCJC does not have an estimate on those students lacking transportation to the campus but that is the market that the WCJC is interested in reaching with any new transit service.

  The Bay City ISD estimates that there are about 200 students that do not qualify for school-provided transportation services. These trips must get students to school between 7:45 am and 8:00 am and return them home between 2:40 pm and 3:30 pm.

[7] This estimate is based on the Journey-to-Work data for trips both originating and ending within Matagorda County (11,672), and the regional average for Means to Work - Public Transportation.

Chapter 5: Comparison of Transit Service Alternatives

Introduction

Matagorda County's commitment to providing transportation should include an understanding among decision-makers that traditional transit options are likely not cost-effective and service options may need to be redefined to better suit low density communities. For example, traditional fixed route may not meet many passenger mobility and accessibility needs because of the infeasibility of locating stops close enough to home – a service attribute that was cited as the most important among respondents to the General Public survey. Similarly, some decision-makers may feel that traditional demand response costs too much for the number of trips provided. The challenge for any community is finding the right balance between cost and quality of service.

This chapter examines how various alternative transit modes may each achieve the right balance for Matagorda County. Four transit modes are reviewed: fixed route, flex route, demand response, and car pool/van pool. To allow a systematic evaluation of all modes, a set of transit system requirements and standards is used for cross-modal comparison. These requirements are classified into three categories of interest, each having somewhat of a different set of requirements. The first, and most important category, passengers, use transit based on reasonable pricing and convenience. The second category, the operator, provides the service, attracts passengers, maximizes efficiency of operations, while minimizing costs and maintaining an acceptable level of service quality. The third category, the community or city, encompasses all citizens affected by the level of transit and its impacts on the economy and land-use patterns. This category is interested in how transit may promote an economical and socially viable environment. A quick review of each of the five modes follows. The modes are then compared across the following:

- Five passenger requirements: availability, frequency, convenience, travel time and user cost;
- Four operator requirements: coverage, flexibility, speed, operations cost; and
- Four community requirements: service quality, social and environment objectives.

Fixed-Route Bus Service

When many individuals think of transit, fixed-route is frequently what comes to mind. Where appropriate, fixed-route bus service can be an effective and efficient means of providing

transportation to meet a broad range of mobility needs; however, fixed route works best in communities of sufficient size and density.

Fixed route buses travel along predefined paths and stops, while adhering to a specific schedule. The Federal Transit Administration (FTA) requires that a complementary Americans with Disabilities Act (ADA) para-transit service be provided to qualified individuals who are unable to use the fixed route system. This ADA requirement can add to the cost of operations significantly.[1]

Variation: Circulator bus service is a variation of fixed-route service; however, the route is generally shorter and circular, rather than linear. Circulator buses work well for distances between ½ mile and 2 miles. They are commonly used to provide connectivity and access among commuter services, major shopping outlets, employments destinations, and large events. Generally, circulators do not directly connect with a high number of home-based origins.

Figure 5.1 – Typical Circulator Bus

Application to Matagorda County: Based on survey responses, journey-to-work data, and demographic characteristics, Bay City reflects just above the minimal requirements for a limited daily fixed route service. Demand is likely to peak during morning and evening commutes but also exists for shopping and medical trips during the mid-day. Initial service may focus on peak periods with limited to no mid-day service. Expansion to mid-day is possible if the demand for more service is evident and financially feasible. General public survey respondents indicated that limited fixed routes to Palacios would be used on a weekly or monthly basis; however, given Palacios' low population and density, fixed route is not a cost-effective option.

[1] ADA Para-transit: Agencies providing fixed route service have been required since 1990 by the American with Disabilities Act (ADA) to provide equal access to transit services for persons with disabilities. The ADA complementary para-transit service is required when individuals are unable to use the fixed route service as a result of a disability. Developing a fixed route bus service means that ADA complementary para-transit needs to be provided within 3/4 mile of the bus route and has strict requirements regarding service levels that result in ADA complementary para-transit being more costly and less flexible than other demand response type services. Therefore, when adding new fixed route service, it is necessary to consider the additional cost of the ADA complementary para-transit service must be considered. Flex route and commuter services are exempt from the ADA requirement as long as they meet the definition of such service.

Flex Route Bus Service

Flex route service combines the strengths of fixed-route service and demand-response service. The concept behind flexible routing is the provision of regular fixed-route service, with the flexibility of demand response to pick up and drop off ADA-eligible passengers at their origins and destinations. Typically, flex route service has regular stops along its path, but time is added to the schedule for the vehicle to deviate off route to points within the immediate vicinity (normally up to 3/4 mile) to pick up or drop off passengers. Other key characteristics include:

- Flex route service is able to cover a larger area than fixed-route service and provide curb-to-curb service to persons with disabilities. In less dense communities, it can be a better choice than fixed route;
- Unlike fixed route, flex route does not require an ADA complementary para-transit service. Instead it combines elements of both fixed and ADA para-transit service into one;
- Agencies may limit deviations to qualified individuals who meet ADA or other criteria; and
- Flex route service is more difficult to operate due to the need for good decision-making by the drivers to keep the fixed route schedule, while also fulfilling deviation requests.

Variations: Route deviation, the most common type of flex routing, follows a fixed path, but can deviate up to a 3/4 mile off route upon request by a rider or dispatch; after which, the vehicle returns to the fixed route. Route deviation provides better service for mobility-impaired individuals, but may be more difficult to operate than other flex-route options.

Point deviation, which can be easier to operate than route deviation, is another variation where vehicles operate within a zone, while serving a limited number of pre-determined stops. However, the vehicle does not follow a pre-determined path within the zone.

Other types of flexible routing includes a demand response connector, which is used in conjunction with a fixed-route service, and a "request stops" service that operates in fixed route/fixed schedule mode with limited number of pre-determined stops near the route in response to passenger requests.

Despite its benefits, flex route is not widespread in Texas. A few agencies that operate flex route include Wichita Falls, Rio Metro/McAllen and Abilene; they have instituted flex route to replace fixed routes and/or provide general-service transit. Each of these systems operates in less dense environments and operators report that riders are satisfied with the level of service. In Wichita Falls and Rio Metro, the services are managed in-house; whereas, in Abilene, the city contracts with MacDonald Transit.

Application to Matagorda County: A flex route service is appropriate for Bay City; however if a provider is unavailable or unqualified to operate flex route for Matagorda County, then the County may be prevented from exercising this option, unless it chooses to provide transit services in-house and hire and train for this capability.

Figure 5.2: Bay City Flex Route Coverage illustrates the extent of potential service coverage, assuming fixed destinations along the SH35 and SH60 corridors and ¾ mile buffer zone.

Figure 5.2: Bay City Flex Route Coverage

Demand-Response Service

Matagorda County currently provides demand response service through the FOEC. Demand response service works well in low density, rural areas, or where other transit alternatives are impractical. Similar to a taxi, service is provided "curb-to-curb." In contrast to taxi service, rides are often shared to transport as many people as possible. Advance reservations are required and

riders may expect to negotiate a pick-up time that both serves their needs and the need of the transit service to meet the requests of other riders. In Matagorda County, the FOEC's demand response service provides trips to the general public for $1.50 in town, $3.00 in county, and $2.50 for out-of-county trips. Based on survey responses, it is the conception of some of the public that the service is limited to the elderly or people with disabilities.

Variations: Demand response may be supplemented by a private carrier under contract, including non-profit carriers and for-profit carriers, like taxi companies, through a "user-side subsidy" model. When a user-side subsidy model is used, the passenger will purchase reduced rate coupons or "trip script," that they use to pay for a ride. The balance of the cost may be supported by a sponsoring agency or a government entity, like the county, or a human services organization. The subsidizing agency purchases coupons or "trip scripts" that allow a rider to take a taxi at a discounted rate. For example, the passenger pays a base fare of $5.00 and receives a trip script worth $10.00. Taxicab companies then accept the script as payment and provide the passenger a trip valued up to $10.00. If the passenger requires a trip that costs more, then the passenger pays the additional amount. Combining the user subsidy and its funding resources, the subsidizing agency reimburses the taxi company the full amount of the trip, up to $10.00. One consequence of this system is passengers are discouraged from taking costly trips. The system has advantages for trips that are difficult to group (for example, they fall outside of normal transit operating hours) and in sparsely populated areas.

Application to Matagorda County: Driven primarily by low population density, demand response will remain the primary service mode for the majority of the county. Most trips can be well served under contract by existing or similar providers. The addition of private carriers, like taxis, can provide an additional element of service not currently available. However, this will require coordination and management of the program, participation by health and human services agencies, and the participation by private taxi companies.

In a fiscally constrained system, a user-side subsidy system could increase service efficiency and allow more trips to be provided and more people to be served. However, it functions best where there is an active market of transportation providers to keep prices low. Matagorda County, which has only one taxi provider currently, would be encouraged to attract other private companies to participate in the program through a Request For Proposal (RFP) process.

ADA Complementary Para-transit Service

ADA complementary para-transit service is similar to demand response service. Like demand response, the ADA service is curb-to-curb. However, ADA service differs in some important ways.

- First, ADA service is a federal requirement where fixed route is in place. Agencies providing fixed route service have been required since 1990 by the American with Disabilities Act (ADA) to provide equal access to transit services for persons with disabilities. The ADA complementary para-transit service is required for individuals who live within ¾ mile of a fixed route corridor and are unable to use the fixed route service as a result of a disability.
- Developing a fixed route bus service means that ADA complementary para-transit needs to be provided within 3/4 mile of the bus route and has requirements regarding service levels that result in ADA complementary para-transit being more costly and less flexible than other demand response type services. Therefore, when adding new fixed route service, it is necessary to consider the additional cost of the ADA complementary para-transit service.
- Flex route and commuter services are exempt from the ADA requirement as long as they meet the definition of such service. Figure 5.3 shows para-transit vehicles used in Tampa, Florida, and San Antonio, Texas, respectively.

Figure 5.3 – Typical Demand Response Vehicles

Application to Matagorda County: Assuming a fixed route is established in Bay City, an ADA Complementary Para-transit service can either be combined with the fixed route into a single flex route service, or it can be provided by existing demand response vehicles that are stationed in Bay City. If the ADA service were to be provided by the existing demand response provider, it should be stressed that ADA requirements for service must be followed. For example, compliance issues include:

- All ADA trips must be met by vehicles that are wheelchair equipped;
- Requires the establishment of an eligibility screening and notification process to ensure only ADA eligible riders use the para-transit service; and
- All requests for next day service must be met and within one hour of the time requested

Car-, Van-, or Bus pool Service

Car pools generally consist of two to four people who commute together and rely on a volunteer driver. Usually, these are informal arrangements with little to no management or institutional support. However, employers or communities may support ride-matching efforts.

Van pools generally consist of five to 15 people who commute together and rely on a volunteer driver. They are different from carpools as they serve more people and typically require a higher degree of management and involvement from partnering institutions. Some vanpools designate a meeting place to reduce the amount of pick-up/drop-off time. Typically, programs that add more than 12 minutes to commuting times are unsuccessful. Successful programs generally serve commuters who do not require their cars during the day, rarely work overtime or erratic schedules, and travel relatively long distances (15 or more miles).

Bus pools are similar to van pools except they rely on professional drivers or volunteer drivers with a commercial license. A bus pool is similar to a park-and-ride with the exception that it serves a single destination. Organizational strategies consist of very informal arrangements between neighbors and co-workers, to more formal employer-sponsored programs where the employer purchases or leases a vehicle. Third-party public or non-profits may also sponsor vanpools. In this case, a third party, such as a transit agency enters into an agreement with a driver. Third-party "for-profit" vanpools operate similarly, but can require about three times the ridership because of higher administrative costs.

Application to Matagorda: The Stakeholder Review Committee expressed a strong interest in the establishment of van pool services to employers like STP that anticipate large-scale future construction project employing between 5,000 and 6,500 additional workers. As of the writing of this report, the STP has indicated that it will contact the Bay City Chamber of Commerce if it is interested in partnering with the county to provide these services. If it chooses not to partner, the STP may choose to provide transportation on its own. For example, a similarly large project was constructed in Alexandria, Louisiana, by Shaw Construction, the same firm working with STP on its construction project. Here, Shaw established park and ride lots on the periphery of the site (5 to 6 miles away) and bused its employees from these sites. The parish and local community did not financially contribute to this service.

Van or bus pools to the county's other large industrial manufacturing and energy employers may be viable. However, there was a weak response from these employers to survey requests. Consequently, the survey was administered for only two employers, Celanese and OXEA. The results indicate that between 35 and 43 individuals are interested in van pool or park-and-ride services. OXEA employs about 140 people and Celanese employs about 45 people. So this represents interest on behalf of approximately 23 percent of the workforce. Assuming that this

response level is representative of what the response would be at other facilities, there is sufficient demand for van pool or park-and-ride services.

Transit Mode Comparison Assumptions

The next section compares all four modes across thirteen requirements. The comparison is based on the assumption that the transit system will be fiscally constrained. When discussing fixed or flex systems in the following section, the comparison assumes a simple network of one to two routes with one to two service vehicles.

Transit System Category: Passenger

Transit System Requirement: **AVAILABILITY** Definition: Availability includes two aspects. First, are transit stops located reasonably close (within a 10 minute walk) to both passenger's trip origins (usually home) and destinations? Second, is the service available during times when it is needed? Due to relatively low demand and the high cost of providing service, it is likely that any service initially offered in Bay City would be provided by a limited number of vehicles and possibly only during peak commuting hours. Weekend, mid-day, or evening hours may not be available. Limited number of bus stops and limited hours would negatively affect availability. These are typical issues confronted by small urban transit systems.		
Fixed Route	**Poor**	Poor coverage for most residential origins likely. Many originating stops will likely be greater than a 10 minute walk. Destination stops will tend to cluster around State Highway 35 and State Highway 60. Initially, service may be limited to peak commuting hours (ex: 6:30 am to 9:30 am; 3:30 pm to 6:30 pm).
Flex Route	**Fair**	Riders who need a special pick-up will likely need to schedule in advance. Flex routing can increase the penetration into surrounding neighborhoods. A 3/4 mile corridor along major corridors Highway 35 and State Highway 60 will capture most major destinations.
Demand Response	**Fair to Good**	All pick-ups and drop-offs will be at the location requested by the rider. Trips requests may not be able to be met at the times desired.
Van- or Bus Pool	**Good**	Van- and bus pooling are tailored to fit the participants' schedules. In order to decrease the time spent picking up and dropping off passengers, all individuals can meet at a pre-determined location.

Transit System Category: Passenger

Transit System Requirement: **FREQUENCY** Definition: Frequency is related to how long riders have to wait to catch a bus. For short trips, passengers will not tolerate long waits. In general, service with headways of 12 minutes is considered satisfactory for trips of 2 to 5 miles. For long regional trips, headways of 20 to 30 minutes are acceptable. Headways over 30 minutes are unattractive, particularly for people who have a private vehicle as an alternative. In Bay City, it is possible that any fixed route or flex system will have longer headways (between 30 minutes and 1 hour) depending on the number of vehicles operating.		
Fixed Route	**Poor**	Due to cost concerns, many suburban systems run every 30 minutes to 1 hour. Headways over 30 minutes are considered very unattractive, particularly for those with an auto as an alternative.
Flex Route	**Poor**	Similar to fixed route with headways expected to range from 30 minutes to 1 hour.
Demand Response	**Fair to Good**	Riders may need to negotiate pick-up and drop-off times with the transit agency. Riders may have to wait on other riders for the trip home. If demand for service is too high, some passengers may be frustrated with attempts to schedule a ride. For regular trips, subscription service may be offered.
Van- or Bus Pool	**Fair to Good**	Although the terms *headway* and *frequency* do not apply to van- or bus pools, the issue of time spent waiting still exists. Depending on the number of riders, the time it takes to pick-up or drop-off passengers can add substantially to the time spent on the vehicle, especially for those that are last in line. A solution to this problem can be the designation of one location where everyone meets. Successful programs match individuals with the same work schedule to eliminate any unnecessary waits at the workplace.

Transit System Category: Passenger

Transit System Requirement: **CONVENIENCE** Definition: Convenience is related to the level of comfort, understandable information, regularity of schedule, availability of parking near to system, directness of travel and ease of transfer. Comfort includes the existence and appearance of shelters, availability of a seat, and the adjacent walking environment. Understandable information means that transit information is easy to access and understand, and is accurate. Directness of travel relates to how directly a passenger can be taken from his/her origin to destination. In the event a transfer is needed, ease of transfer relates to those that are well -timed and placed.		
Fixed Route	**Good**	No need to make an appointment in order to access transit. Information is easy to understand and accessible. Fixed route system could provide link to limited schedule county service. Matagorda County could install bus stops without bench or shelter for approximately $750 each or a bus shelter with bench and covering for approximately $8,000 each. Sidewalk access may be limited in many areas. Directness of travel is likely to be poor due to a limited network/number of vehicles.
Flex Route	**Good**	Passengers may need to request route deviations in advance or requests may be made when boarding the bus. The flexible nature of the service may make it difficult to provide succinct yet accurate schedule information. Ability to flex improves directness of travel. Like fixed route, bus stops and/or shelters may be advised, especially in locations that serve large numbers of elderly or medically fragile populations.
Demand Response	**Good**	Requires reservation in advance. Service is curb-to-curb so shelters and access are not concerns. If no other passengers are aboard the vehicle, directness of travel will be very good. However, this cannot be guaranteed and riders may need to accompany others on their trips.
Van- or Bus Pool	**Fair to Good**	Directness of travel is "good." Availability of parking is unknown. Potential sites include the Bay City Chamber of Commerce lot on SH35, west of town, or the STP Administration/WCJC Campus on SH60, south of town. Comfort will be largely determined by the type of vehicle used in the program. Availability of shelters, and transfers are not issues. One concern expressed for off-site parking included the security of the site. Therefore, parking lots should be established in locations where there is other activity. The presence of other people can help to monitor the site.

Transit System Category: Passenger

Transit System Requirement: **TRAVEL TIME** Definition: Passengers typically consider the total door-to-door travel time. This time consists of accessing transit stop, waiting for the bus, traveling on vehicle, possibly transferring to another vehicle, de-boarding vehicle and walking to final destination.		
Fixed Route	**Poor to Fair**	Depending on the number of vehicles in operation, travel times may be long due to a circuitous route. Walking time to and from bus stops is likely to be too long for some passengers, especially from home origin.
Flex Route	**Fair**	Similar to fixed route. Some riders may not have direct travel. Additional time may be required to serve deviation requests of other passengers. On the positive side, flex route may reduce the amount of time spent walking to origins or destinations.
Demand Response	**Fair to Good**	Similar to *Convenience*: If no other passengers are aboard the vehicle, directness of travel could be very good. Rider may need to accompany others on their trips, thus increasing travel time. No need to walk to access service since it is "curb-to-curb."
Van- or Bus Pool	**Excellent**	Van- and bus pools should provide direct access to destination. Per previous comments, time spent picking up and dropping off other passengers may negatively affect travel time but can be circumvented by establishing a van- or bus pooling parking or drop-off lot.

Transit System Category: Passenger

Transit System Requirement: **USER COST** Definition: User cost is defined as the cost of travel expenses for the passenger. It typically consists of a fare, but can include a cost for parking as well.		
Fixed Route	**Excellent**	Fares for suburban services typically can range from 50 cents to $1.00 per trip. Additional discounts may be available if monthly passes are purchased. Most systems discount trips for the elderly, students, or people with disabilities.
Flex Route	**Good to Excellent**	Similar to fixed route (50 cents to $1.00). Agencies may ask a surcharge for flex service to limit the demand.
Demand Response	**Good**	FOEC, the demand response provider for Matagorda County, charges $1.50 for in-town trips; and $3.00 for in-county trips. In the case of ADA para-transit service that must complement fixed route service, the fare is limited to twice the charge for a fixed route trip. There is no fare limitation for a stand-alone demand response system.
Van- or Bus Pool	**Good to Excellent**	Vanpools may charge related to the length of the lease on the vehicle, the quality of the vehicle (e.g. luxury van or bench seating), the degree of management required to organize program. In the event a vehicle is leased, typical monthly charges for a leased vehicle range from $1,500 per month to $2,000 per month. Fuel and administration expenses would be in addition to this. Assuming a 20 mile trip, $5.00 per gallon for gas, expected costs would be approximately $6.00 one-way or $12.00 round-trip if seven people shared a van trip.

Transit System Category: Operator

Transit System Requirement: **COVERAGE** Definition: Primary transit coverage is usually defined as the area within a 5-minute walk. Secondary coverage includes the area within a 5- to 10-minute walk (approximately 1/4 mile). A good transit system will cover about 75 to 80 percent of the population. In Bay City, many destinations are located along SH35 and SH60. Any fixed route system is likely to travel along these corridors and to make a route.		
Fixed Route	**Poor**	In order to connect with enough residences, a Bay City fixed route would need to penetrate the neighborhoods, particularly those shown to be high need; however, residential household density is not sufficient to connect with enough potential riders to make the service of both high quality and economically feasible.
Flex Route	**Fair to Good**	Route deviation significantly improves area coverage compared to fixed route. Assuming a 3/4 mile service corridor along either side of a SH35 and SH60, the majority of Bay City residences would be covered. However, according to the Transit Need Index, the south east and north west demonstrate more potential demand for transit services than other neighborhoods.
Demand Response	**Excellent**	Typically, demand response services are made available throughout the sponsoring entity's area.
Van- or Bus Pool	**NA**	

Transit System Category: Operator

Transit System Requirement: **RELIABILITY** Definition: While passengers experience transit system reliability as punctuality of service, operators analyze this requirement according to how much interference from other traffic is likely to impact the system's performance, how well technology responds to changing operating conditions, especially as related to weather, road closures, etc., and how mechanical breakdowns will affect the system.		
Fixed Route	**Good**	A transit system operating along the roadways in Bay City will be little impacted by traffic congestion. With planning, fixed route can adjust its routing to avoid traffic interference. A good maintenance program will prevent most mechanical breakdowns.
Flex Route	**Good**	Similar to fixed route, flex route service may be affected by traffic, inclement weather, and vehicle breakdowns. However, a flex system may be able to circumvent some traffic hazards more quickly. Automatic vehicle locators, or AVLs, may be useful for real-time dispatching, allowing a flex route system to respond quickly to trip requests.
Demand Response	**Good**	Demand response vehicles will encounter similar traffic levels and conditions, but unlike fixed route, will have more flexibility to circumvent congestion and traffic hazards. Like flex route, AVL will allow for real-time dispatching; thus, allowing better responsiveness to short-term trip requests.
Van- or Bus Pool	**Fair**	If van- or bus pools include individuals who work the same schedule and rarely work overtime, the reliability tends to be good. However, if an individual is required to work late or needs to get home for an emergency, it creates a problem. One advantage of a third-party managed van-pool is the addition of a "guaranteed ride home," in which the third-party contractor guarantees a ride home in the event the individual needs to work late or there is an emergency.

Transit System Category: Operator

Transit System Requirement: **FLEXIBILITY** Definition: Flexibility is defined as the ease and/or inexpensiveness of adapting a system in response to changing conditions or operation demands. Elements that contribute to a system's flexibility include the number of stations and stops, the extensiveness of the transit network, flexibility of routing, scheduling, and capacity. Additionally, flexibility should not be considered as a wholly positive attribute. In general, the higher the flexibility of a mode, the lower the efficiency.		
Fixed Route	**Fair**	It is likely that an initial Bay City fixed route could not be easily adapted to serve new destinations without increasing the travel time on the route. It is anticipated that a Bay City fixed route system would initially have a minimal network (1 to 2 routes with 1 to 2 vehicles operating); thus, the flexibility of adapting the network among routes is limited. However, as the demand for transit grows, additional vehicles and routes can be added to the system relatively easily.
Flex Route	**Good**	Similar to fixed route, except flex route systems can more easily serve new destinations within their service corridors. Flex route is less flexible than demand response.
Demand Response	**Good to Excellent**	Demand response has few constrictions limiting movement, coverage area, and flexibility of routing and scheduling. The number of operating vehicles would likely be limited due to available funding. ADA para-transit service must meet federal requirements for trip requests; requests for next day service must be met within one hour of the requested time.
Van- or Bus Pool	**Fair**	Van- or bus pools are limited in their flexibility by the constraints of the other riders, as a change that may be desired by one passenger, may not be acceptable to others.

Transit System Category: Operator

Transit System Requirement: **SPEED** Definition: Speed is affected by the number of stops (with a higher number of stops reducing speed), traffic and road conditions, and hazards. This metric performs inversely to coverage.		
Fixed Route	**Fair to Good**	Typical in-town speeds for small urban systems range between 10 and 20 miles per hour.
Flex Route	**Fair**	In general, flex routing is slower than fixed route because of the need to serve deviation requests.
Demand Response	**Fair to Good**	Similar or faster than fixed route.
Van- or Bus Pool	**Good to Excellent**	Van- and bus pools are not significantly affected by the number of stops if riders meet at a park-and-ride. In the event passengers are picked up at their homes, speed will be negatively impacted for those picked up first. This mode is affected by the same road and traffic conditions of other rubber-tire modes.

Transit System Category: Operator

Transit System Requirement: **OP COST** Definition: Cost refers to the total cost of providing transit service, including operating and capital. Typically, operating costs are expressed as $/mile, $/hour, or $/trip. According to the FY2008 reports filed with the Texas Department of Transportation, peer regional providers (CVTD, GCRPC, FBC, Gulf Coast Connect) provide a revenue hour of service for $40.14 in FY2008; $1.53 per mile, and $20.45 per trip. Fixed route figures below are 2008 figures for urbanized systems in Texas; demand response figures are for 2008 non-urbanized systems in Texas. Accounting for costs incurred during non-revenue hours (driving to and from routes, fueling, maintenance, etc.) and inflation, that figure is increased to $60 per hour. Assuming a single vehicle operates for 8 hours each week day, the estimated daily cost is $480 and the annual cost is $125,000.		
Fixed Route	**$56.95/Hr** **$3.98/Mile** **$11.65/Trip**	Fixed routes do not perform as cost effectively and efficiently as other modes in most suburban and rural areas because of insufficient density. Where both trip origins and destinations are sufficiently dense, fixed-route is typically the most cost-effective service as measured by cost per passenger trip, per operating hour, and per operating mile. Where fixed route service is provided, FTA requires a parallel ADA-compliant transit service be provided to those individuals who are unable to access fixed route services. These ADA-compliant services can increase costs significantly; in some cases, adding an additional 30 percent to the cost of service.
Flex Route[2]	**$45/Hr** **$4.54/Mile** **$13.40/Trip**	Flex route trips may cost more than fixed route. However, unlike fixed route service, no parallel ADA-compliant transit service is required. The cost of combining fixed route with ADA para-transit service to the general public and people with disabilities is a significant advantage for smaller communities.
Demand Response	**$51.00/Hr** **$2.85/Mile** **$18.93/Trip**	Hourly costs for demand response should be equivalent to fixed route hourly costs or about $60 per revenue hour. No parallel ADA-compliant transit service is required.
Van- or Bus pool	**$20K/Yr**	Van-pooling operated by a third-party may incur management expenses, vehicle maintenance, insurance, fuel. Typically for fixed, flex, and demand response services, labor costs constitute about 60 to 70 percent

[2] Laura Higgins and Linda Cherrington, Experience with Flex Route Transit Service in Texas, September 2005. For the Texas Transportation Institute.

		of the cost of operations. These costs are not incurred in van- or carpooling programs.

Transit System Category: Community

Transit System Requirement: **SERVICE QUALITY**

Definition: The basic community requirement is generally that transit services must be available to all residents and be of such a quality that they attract passengers. This requirement coincides with the overall level of service requirements of both the passenger and the operator. One metric that can be used to measure service quality is the estimated number of riders per capita. For the following analysis, the Texas Department of Transportation data for small urban systems is used for the average operating cost per revenue hour (approx. $60) for fixed route and demand response service. Assuming a single vehicle operates for 8 hours each week day, the estimated annual cost is $125,000. In the analysis below, benchmarks are established for each type of service for average performance.

Fixed Route	**Fair**	For Texas urban systems, the average cost per fixed route trip is $11.65. Dividing this cost per trip into the estimated cost of service, $125,000, the fixed route system would need to deliver at least 10,730 trips annually (about 43 trips per day) to perform on average for cost.
Flex Route	**Good**	Flex route's availability of service is higher than fixed route. However, flex route services may cost more than fixed route. In a study of Texas-based flex route systems, the average cost per flex route trip was $13.40.[3] Dividing the average cost per trip into the estimated cost of service, $125,000, the flex route system would need to deliver at least 9,328 trips annually to perform on-average with other systems (about 36 trips per day).
Demand Response	**Fair**	Demand response is the best mode to serve the elderly and mobility-impaired. However, its appeal beyond these transit-dependent populations is limited. For small urban systems operating demand response service, the average cost per demand response trip is $18.93. Dividing this into the estimated cost of service for a single vehicle operating of 8 hours ($125,000), the DR service would need to deliver at least 6,603 trips annually to perform on average (about 25 trips per day).
Van- or Bus pool	**Poor**	Service would be limited to commuters. Quality of service has potential to be high, depending on vehicle and number of participants buts its benefits are not widespread. Based on an analysis of Journey-to-Work data and LEHD, there are about 143 potential commuter trips that could be served by public transit. A survey of OXEA and Celanese employees indicated 43 individuals would use a van pool if one were available.

[3] Experience with Flex Route Transit Service in Texas, L. Higgins and L.K. Cherrington, Texas Transportation Institute. September 2005.

Transit System Category: Community

Transit System Requirement: Social Objectives Definition: A typical social objective for a transit system is that the service benefits, in particular, those who cannot drive or do not own a car. Other objectives may include reasonably priced commuting options and/or providing access to recreational or cultural facilities.		
Fixed Route	**Fair to Good**	The complementary ADA para-transit service would meet the needs of individuals who qualified for the service due to mobility impairment. However, a fixed route system may not provide the accessibility to those with mobility impairments that do not meet ADA guidelines, such as the elderly. In regards to meeting commuting objectives, it is likely a fixed route service would have difficulty covering enough home origins to meet the commuting needs for the majority of residents.
Flex Route	**Good**	A flex route system could serve the highest transit need areas of Bay City if the service corridor is at least 3/4 mile. This would improve the accessibility for both the ADA- and non-ADA riders who are mobility impaired. The flex route may also improve penetration into neighborhoods and improve connections from the home-origin to a local destination.
Demand Response	**Fair to Good**	Investment would focus on serving the needs of the most transit-dependent. However, the need to serve other goals, like improving commuter options, would be limited.
Van- or Bus pool	**Fair**	Service would not necessarily be provided to the most transit-dependent members of the population. Service can provide a reasonable commuting option.

Transit System Category: Community

Transit System Requirement: Environment Definition: Reduction of air pollutants, conservation of energy are both examples of environmental benefits stemming from transit.		
Fixed Route	**Fair**	To the extent that the fixed route is attracting people to transit who would otherwise drive, the system provides an environmental benefit. Given the likelihood of long headways and travel times, it is unlikely that the system will compete effectively against the private auto. Thus, its environmental benefit will be minimal.
Flex Route	**Fair to Good**	Similar to fixed route with the exception that the system may attract more riders; thus, produce a larger environmental benefit.
Demand Response	**Fair**	It is unlikely that the service will have a substantial impact on air quality due to its inability to attract and serve a significant number of people.
Van- or Bus pool	**Good**	Van- or bus pools work best for longer trips. So, the environmental benefit that may stem from a van- or bus pool service is likely to be more significant than shorter, local trips.

Conclusion

Table 4.2: Mode Comparison summarizes the each mode and attribute.

	Availability	Frequency	Convenience	Travel Time	User Cost	Coverage	Reliability	Flexibility	Speed	Op Cost	Service Quality	Social Objectives	Environment Objectives
Fixed Route	Poor	Poor	Good	Poor to Fair	Excellent	Poor	Good	Fair	Fair to Good	$56.95/Hr $3.98/Mi $11.65/Trip	Fair	Fair to Good	Fair
Flex Route	Fair	Poor	Good	Fair	Good to Excellent	Fair	Good	Good	Fair	$45/Hr $4.54/Mi $13.40/Trip	Good	Good	Fair to Good
Demand Response	Fair to Good	Fair to Good	Good	Fair to Good	Good	Excellent	Good	Good to Excellent	Fair to Good	$51.00/Hr $2.85/Mi $18.93/Trip	Fair	Fair to Good	Fair
Van or Bus Pool	Good	Fair to Good	Fair to Good	Excellent	Good to Excellent	NA	Fair	Fair	Good to Excellent	$20K/Yr	Poor	Fair	Good

This overview is good guide to help policymakers make choices for their communities depending upon which attributes are the most important to their constituents. Each mode has benefits and drawbacks that will make it more or less attractive to Bay City decision-makers. For example:

- Fixed route is burdened by the added cost of the complementary ADA-paratransit service, and there is the likelihood of low coverage and frequency of service that may negatively impact ridership.
- Flex route may be a better choice as it can serve both ADA-eligible and the general public. However, Matagorda County may be limited to managing the transit system itself if it wishes to institute flex routing because third-party contractors may not offer flex routing as an available option.
- Demand response is most appropriate service mode for most of the county but it will continue to be a costly form of transit.
- Van and bus pool options are suitable for commuters but do little to address in-town trip needs.

Chapter 6: Service Options

Introduction

This chapter presents service options for Matagorda County. Transit modes discussed include demand response within rural Matagorda County, unincorporated cities, and Palacios; fixed route with complementary ADA para-transit service for Bay City; flex route service for Bay City; and commuter services for employees.

The need for transit both within Matagorda County and connecting to the surrounding region is evident from the result of data analysis (Chapter 2, Existing Conditions and Chapter 4, Transit Need and Service Gaps) and survey responses (See Appendix A: Public Involvement Plan). Currently, FOEC provides demand response, curb-to-curb service throughout Matagorda County. In FY2009, it provided 25,374 trips. Based on peer averages for trips provided per capita of 1.12 and 1.44, there is service gap of approximately 20,000 to 26,000 trips annually within Matagorda County. Some of this unmet demand may be served by additional demand response services, a new fixed or flex route system within Bay City, and/or commuter services like van pool or car pool programs.

Ridership Estimates

The following section outlines ridership estimates for demand response, fixed/flex route, and van-pool and/or park and ride services.

Demand Response Service: Based on FOEC's performance from FY07 to FY09, it delivers an average of 3.22 trips per vehicle hour. See Table 6.1: FOEC Average Trips per Hour below.

Table 6.1: FOEC Average Trips per Hour

	Number of Trips	Number of Hours	Trips per Hour
FY2007	29,346	9,659	3.04
FY2008	35,919	9,383	3.83
FY2009	25,374	9,094	2.79
Average	30,213	9,378	3.22

Assuming an additional vehicle was added for eight hours for a 250-day service schedule, it would generate about 6,440 additional trips annually if a similar level of performance is met.

Bay City Fixed/Flex Route: Matagorda County has no experience providing fixed or flex route services. Therefore, ridership estimates are based on the performance of peer small urban Texas

providers. Trips per operating hour and trips per capita were compared across four small urban providers: Victoria, Beaumont, San Angelo, and Midland-Odessa. On average, these systems delivered 10.35 trips per operating hour. See Table 6.2, Peer Average Trips per Hour and per Capita.

Table 6.2: Peer Average Trips per Hour and per Capita

	Population	Number of Trips	Trips per Hour	Trips per Capita
Victoria	61,529	289,335	10.94	4.70
San Angelo	87,696	182,867	8.34	2.08
Beaumont	139,334	643,762	13.04	4.62
Midland-Odessa	111,394	444,951	9.10	3.99
Average			10.36	3.85

If Bay City were to achieve similar effectiveness, it would deliver about 20,700 trips for each vehicle operating eight hours a day. However, these systems are mature and operate within small urban or suburban environments that are more populous than Bay City. Bay City should initially anticipate significantly lower levels of ridership if a fixed or flex route is implemented.

For the purposes of this analysis, a more conservative estimate of 5 trips per hour will be assumed for the first year of operations. This estimate results in ridership of 10,000 trips for each vehicle operating 2,000 hours annually (8 hours daily). Peak period service would result in 7,500 trips for each vehicle operating 1,500 hours annually (or 6 hours daily).

Commuter Services: From the results of the employer survey, commuter services such as van pool or park and ride, are viable between Bay City and OXEA and Celanese. Of the two modes, more people indicated a greater interest in van pooling. Assuming 7 people are recruited to join a van pool and they use it, on average 5 days a week, a single vehicle will deliver about 3,500 trips annually.

Another commuter options is the promotion of car pooling. In some programs, interested individuals who are associated with affiliated organizations, like their employer, can use the service free-of-charge to find other riders in their neighborhood to car pool with. For example, the H-GAC promotes car pooling through its Commute Solutions program and its affiliation with a group called Nu Ride. Promotion of carpooling to local employers could be accomplished through local organizations like the Chamber of Commerce and Agriculture. No ridership estimates are available for car pooling.

Demand Response Service Options

The Transit Cooperative Research Program categorizes demand response services by type of delivery:

- Direct Operations: Services are provided directly by transit agency. Advantages to this approach include closer control over quality of services, more control over costs, and some cost saving advantages, such as bulk fuel purchases. Disadvantages can include higher labor costs. For example, Gulf Coast Center/Connect Transit primarily operates under a direct operations model.

- Private Sector Contracts: Services are provided under contract with both private for-profit and non-profit carriers. Transit agencies can execute single contracts which are solely dedicated to the provision of transit services to the transit agency; or multiple contracts which are awarded to multiple agencies either through a brokerage system, or a user-side subsidy program. In areas where there are a large number of providers, a brokerage model matches trip requests with the best-suited carrier in order to maximize efficiency and resource utilization. (See Chapter 5: Transit Alternatives for a discussion of user-side subsidy.) [1]

The single contract model is currently in use in Matagorda County. FOEC provides demand response service under contract to the GCRPC for Matagorda County, based on a competitive bid solicitation for a two-year contract.

Demand response service can continue to be provided under contract by the FOEC. The organization reflects better-than-average performance statistics compared to its peers and has institutional knowledge of and experience serving Matagorda County. However, the organization's annual public demand response trips have decreased over the past three years, from 21,700 in FY2007 to 10,800 in FY2009, and that is an area of concern. Additional capacity may be added through additional vehicles and drivers and/or through contracts with other private providers, like taxi companies but increasing general public trips with existing and any new resources to previous or greater levels should be a goal.

Demand response will remain the cornerstone of Matagorda County's transit services. The following section outlines three service options. The first option reflects a low investment scenario where services are kept at their current level but additional capacity is added through a user-side subsidy/voucher program with participation by private providers, like a taxi company. The second option reflects a medium investment scenario where one driver and vehicle is added; this would add capacity to deliver more regularly scheduled trips between Bay City and other Matagorda County destinations like Palacios, the City of Matagorda, and Sargent. The high

[1] Transit Cooperative Research Program, Paratransit Contracting and Service Delivery Methods

investment scenario reflects an additional driver and vehicle along with resources to support future planning and expansion of Matagorda public transit services. Administrative and planning is currently the responsibility of FOEC and the GCRPC but there is limited capacity to expand efforts to build and manage transit without additional resources to support these efforts. Additional resources recommended include resources for marketing and promoting the service; and a full-time transit administrator with responsibility for overseeing the planning, promoting, and delivery of services. The costing assumptions for this scenario include: $25,000 for wages and $8,750 for fringe benefits for transit administrator; and $3,000 for marketing and promoting. See Table 6.3, Demand Response Service Options.

Table 6.3: Demand Response Service Options	
Low	Retain existing service through FOEC and add user side subsidy/voucher program
Med	Retain existing service through FOEC. Add 1 additional driver and vehicle
High	Retain existing service through FOEC. Add 1 additional driver and vehicle and transit administrative and planning support

The cost and details for each service option are outlined in Table 6.4, Demand Response Service Option Cost and Performance below.

Table 6.4: Demand Response Service Option Cost and Performance			
	Low	Medium	High
Cost to Operate	$300,000 ($270,000 for existing services and $30,000 for voucher)	$390,000 ($360,000 for services and $30,000 for voucher)	$438,750 ($360,000 for services; $30,000 for voucher; $48,750 for admin)
Vehicles	5	6	6
Staff	1 partially allocated executive director; 5 drivers; 2 reservation/scheduling/ and dispatch personnel	1 partially allocated executive director; 6 drivers; 2 reservation/scheduling/ and dispatch personnel	1 partially allocated executive director; 6 drivers; 2 reservation/scheduling/ and dispatch personnel and transit admin
Est. Revenue Hours	10,000	12,000	12,000
Est. Revenue Miles	203,800	244,560	244,560
Est. Number of Trips	30,000	36,000	37,200*
Op Cost/Rev Hour	30.00	30.00	33.56
Op Cost/Rev Mile	1.47	1.47	1.68
Op Cost/Passenger Trip	10.00	10.00	11.00

* Assumption that Transit Admin, Planning, and Marketing position will generate additional ridership to result in equivalent cost per passenger trip.

Challenges

- Demand response is one of the least efficient forms of transit and its cost per trip is high.
- Providing additional demand response services will do little to counter the prevailing public attitude that the service is intended for those who are elderly or have disabilities.
- The voucher program will require administration and management. The FOEC has expressed limited interest in expanding its transit services to encompass additional options. Future administration of the program will need to be determined during future planning and implementation phases.

Benefits

- Expansion of demand response causes little change or disruption to current services.
- Additional vehicle will support regularly scheduled connections between Bay City and other Matagorda County municipalities.
- It is a low risk approach to service expansion that can add services like fixed route, when funding is secured. Transit administrator can devote energy to expanding current market for transit and prepare the community for new services.
- Use of taxi service for voucher program increases productivity of existing resources.
- The voucher program/user side subsidy creates the framework for expanding the partnerships with a stake in local transit. Potential partners may include organizations like Worksource Solutions, Wharton County Junior College, and Matagorda County MHMR, Edith Armstrong Center.

Fixed Route Service Plans

Fixed route services are of interest to Bay City and Matagorda County stakeholders. However, the population and density of the city make it difficult to operate fixed route cost-effectively. Targeting the service to peak hours will limit costs and offering flex service will address some of the challenges of fixed route. Furthermore, flex route will eliminate the need to provide ADA-complementary para-transit service.[2]

Two routes are outlined below. Following this, a discussion of low-, medium-, and high-investment scenarios is provided.

Route A: Route A provides service along SH35 (E/W Loop) and SH60 (N/S Loop). It is a "pulse system," providing transfers between routes at the intersection of SH35 and SH60 approximately every 20 minutes. The E/W Loop terminates at the Wal-Mart Supercenter to the east and the Bay City Chamber of Commerce to the west. The N/S Loop terminates at Matagorda Regional Clinic

[2] As discussed in Chapter 5, Service Options, ADA-complementary para-transit service is an FTA requirement within ¾ mile of a fixed route. This service can be provided by the Demand Response provider, but additional rules and regulations and service guidelines related to ADA service must be adhered to.

to the north and the Wharton County Junior College to the south. If paired with a flex/route deviation system, vehicles can deviate off the SH35/SH60 corridors into residential areas to pick up passengers, or to extend further along the corridor to serve workplace and retail destinations. E/W Loop is 13.36 miles and the N/S Loop is 11.55 miles. It takes one hour to complete a loop.

Hours of service: Peak period service extends from 6:30 am to 9:30 am and 3:30 pm to 6:30 pm. Daily service extends from 8:00 am to 5:00 pm. Extended service runs from 6:30 am to 6:30 pm.

See Figure 6.1: Bay City Route A Map below.

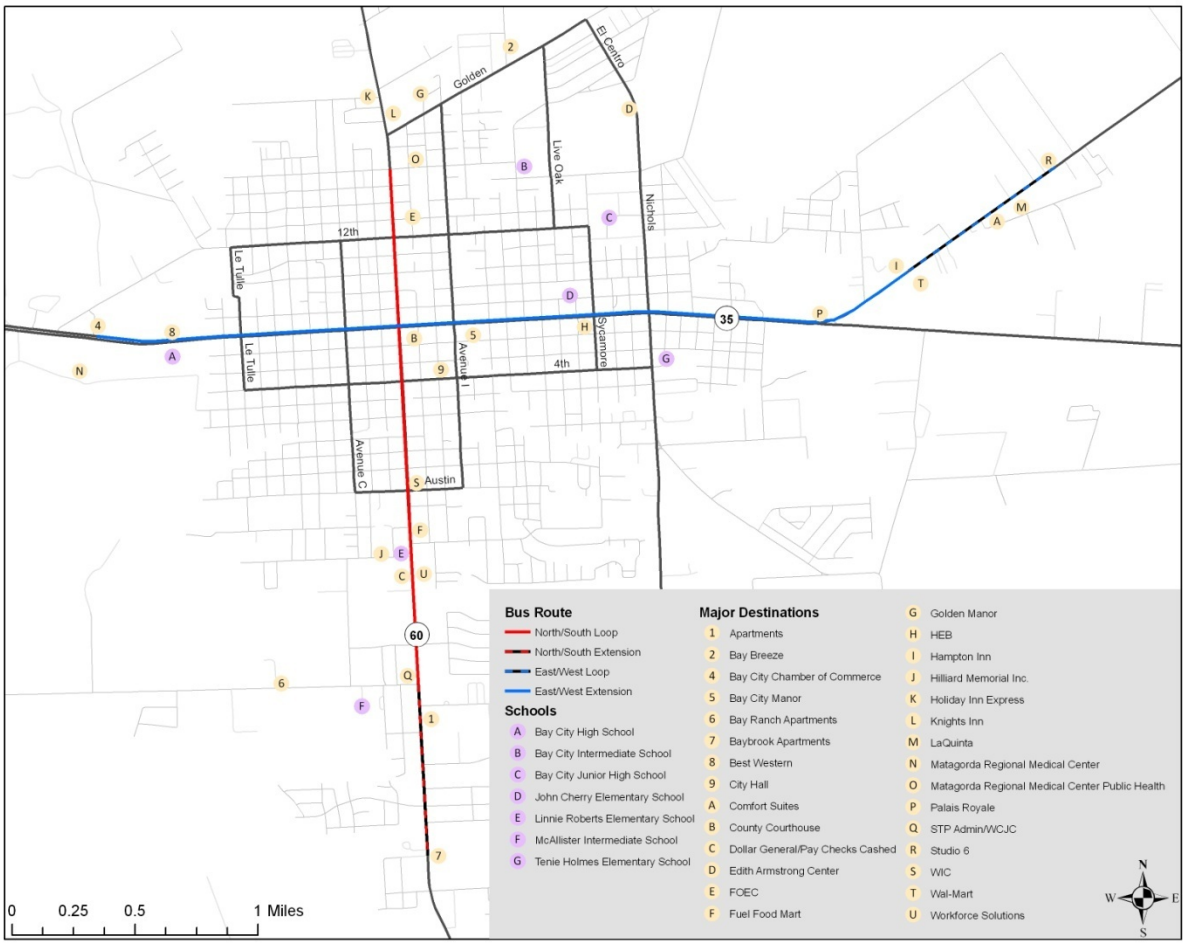

Figure 6.1: Route A Bay City

Challenges:

- Bay City does not display the minimum characteristics to support fixed route (e.g. residential density is just below the 4 households per acre required to support fixed route) and is more suited for flex route. In order to be successful, the service must be consistently promoted and managed to ensure high levels of service.

- Without route deviation, no penetration into residential areas where trip origins are located. (Proximity to bus stops was mentioned in the general public survey as one of the most important attributes of a good system.)
- No ability to provide connectivity to public schools, with the exception of Bay City High School, John Cherry Elementary School, and Tenie Holmes Elementary School. Public school ridership was estimated at 200 riders.
- A high percentage of "dwell time" is currently built into the schedule in order to accommodate the SH35/SH60 pulse point and to allow for route deviation. Passengers may find "dwelling" an inconvenience.
- Would require ADA complementary para-transit service if no flex service was offered. ADA complementary para-transit service may be provided by existing demand response service but would require additional rules and regulations are adhered to.

Benefits:

- Provides frequent service to most of the city's retail and medical destinations.
- Provides ease of transfer from all four quadrants of the city. Once on the route, a passenger can easily move north, south east and west.
- Easy to operate.
- Achieves approximately 20 minute headways.

Route B: The system operates two routes that travel both E/W and N/W. Loop One starts at the Matagorda Public Health Clinic in north Bay City. It travels to the west to provide greater penetration into neighborhoods with high transit demand, before connecting to three local schools in the city's northeast quadrant, HEB and Wal-Mart Supercenter. The vehicle returns along SH35 to connect with Town Center (SH35/SH60), before turning around at the Bay City Chamber of Commerce and Agriculture. From here, the vehicle travels east along SH35 before turning south to connect with City Hall/City Services, WIC, Workforce Solutions, Wharton County Junior College/STP Admin, and a two apartment complexes. The route returns at this point and travels north on SH60 to its starting point. Loop Two starts at the Wharton County Junior College and provides reverse-flow service. The route is 14.5 miles and takes approximately 45 minutes to complete, although this may be lengthened to allow schedules to conform due to variations of traffic or accommodate deviations. Unlike Route A, vehicles will not pulse. Similar to the Route A, it could accommodate deviations if time were built into its schedule.

See Figure 6.2, Route B Bay City.

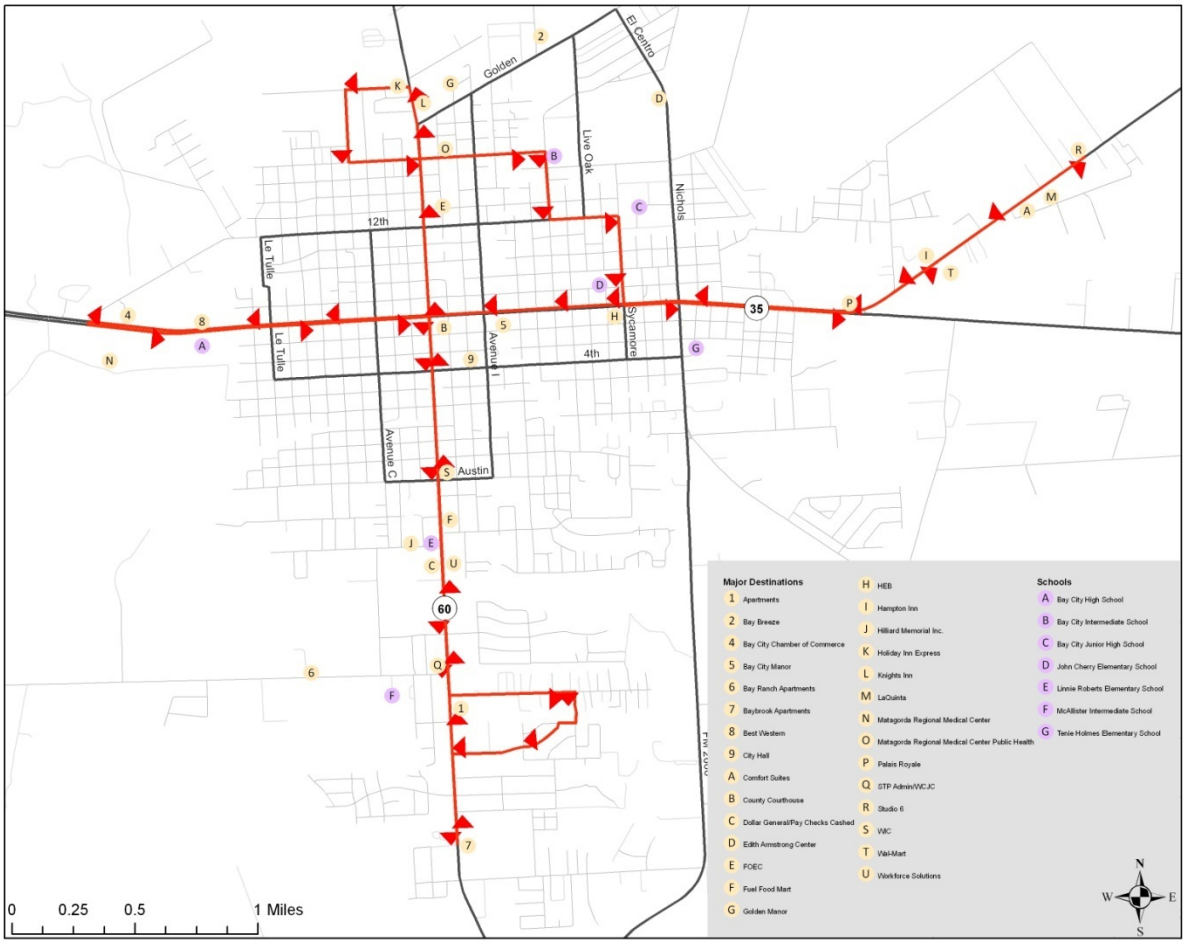

Figure 6.2: Route B Bay City

Challenges:

- Compared to the pulse system presented in Route A, the Loop system may require a longer return trip. Passengers with relatively short trips on the same line may not find this system attractive.
- Without route deviation, low penetration into most residential areas where trip origins are located.
- Like Route A, would require ADA complementary para-transit service if there were no route deviations.
- The system has a gap along SH35, traveling east, from the intersection of SH35/SH60 to the HEB. Instead of traversing this section of SH35, the route travels within the northeast neighborhood to serve this residential area with schools.

Benefits:

- Provides frequent service to most of the city's retail and medical destinations.
- Provides regular connectivity to public schools and apartment complexes.

Low, Medium and High Investment Scenarios

The following section outlines three service options for fixed/flex route. The first option reflects a low investment scenario where peak period services are provided by two vehicles operating for 6 hours; a medium investment scenario where daily services are provided by two vehicles operating for 9 hours; and a high investment scenario where services are provided by two vehicles operating for 12 hours. Note, the cost does not reflect any ADA complementary para-transit service; additional costs may be incurred if fixed route is implemented or the service may be handled by the existing demand response vehicles operating in Bay City.

Table 6.5: Fixed Route Service Options	
Low	Peak Period - 6 hours of service
Med	Daily - 9 hours of service
High	Extended – 12 hours of service

The cost and details for each service option are outlined in Table 6.6, Fixed Route Service Option Cost and Performance below.

Table 6.6: Fixed Route Service Option Cost and Performance			
	Low	Medium	High
Cost to Operate	$ 180,000	$ 270,000	$ 360,000
Vehicles	2 vehicles and 1 spare	2 vehicles and 1 spare	2 vehicles and 1 spare
Staff	Require 1.50 FTE drivers, and partial FTE's for supervision and management.	Requires 2.00 FTE drivers and partial FTE's for supervision and management.	Requires 3.00 FTE drivers and partial FTE's for supervision and management.
Est. Revenue Hours	3,000	4,500	6,000
Est. Revenue Miles	36,000	54,000	72,000
Est. Number of Trips	15,000	22,500	30,000
Op Cost/Rev Hour	$ 60	$ 60	$ 60
Op Cost/Rev Mile	$ 5	$ 5	$ 5
Op Cost/Passenger Trip	$ 12	$ 12	$ 12

The cost per passenger of is $1 to $2 above the cost of a demand response trip, which is atypical. The source of this difference is largely in the cost per revenue hour increases from $30 per hour to $60 per hour, based on the difference in providers. (FOEC operates at $30 per hour versus, GCRPC's cost of $36.86 and Gulf Coast Center/Connect Transit's cost of $67.00.) For the purposes of this analysis, an average cost of $60 was used to reflect higher than average costs for regional providers.

Flex Route Option

When coupled with either Route A or Route B, a flex route will present the ability to penetrate into neighborhoods where most trips originate. As discussed in Chapter 5, Service Alternatives, requests for flex may be limited to eligible individuals, for example, people with mobility disabilities or job-access riders, as a way to control requests for services and costs. Without such controls, flex service can become overly cumbersome as more and more passengers request a flex option and do not use fixed route stops. See Figure 6.3: Bay City Fixed/Flex Route.

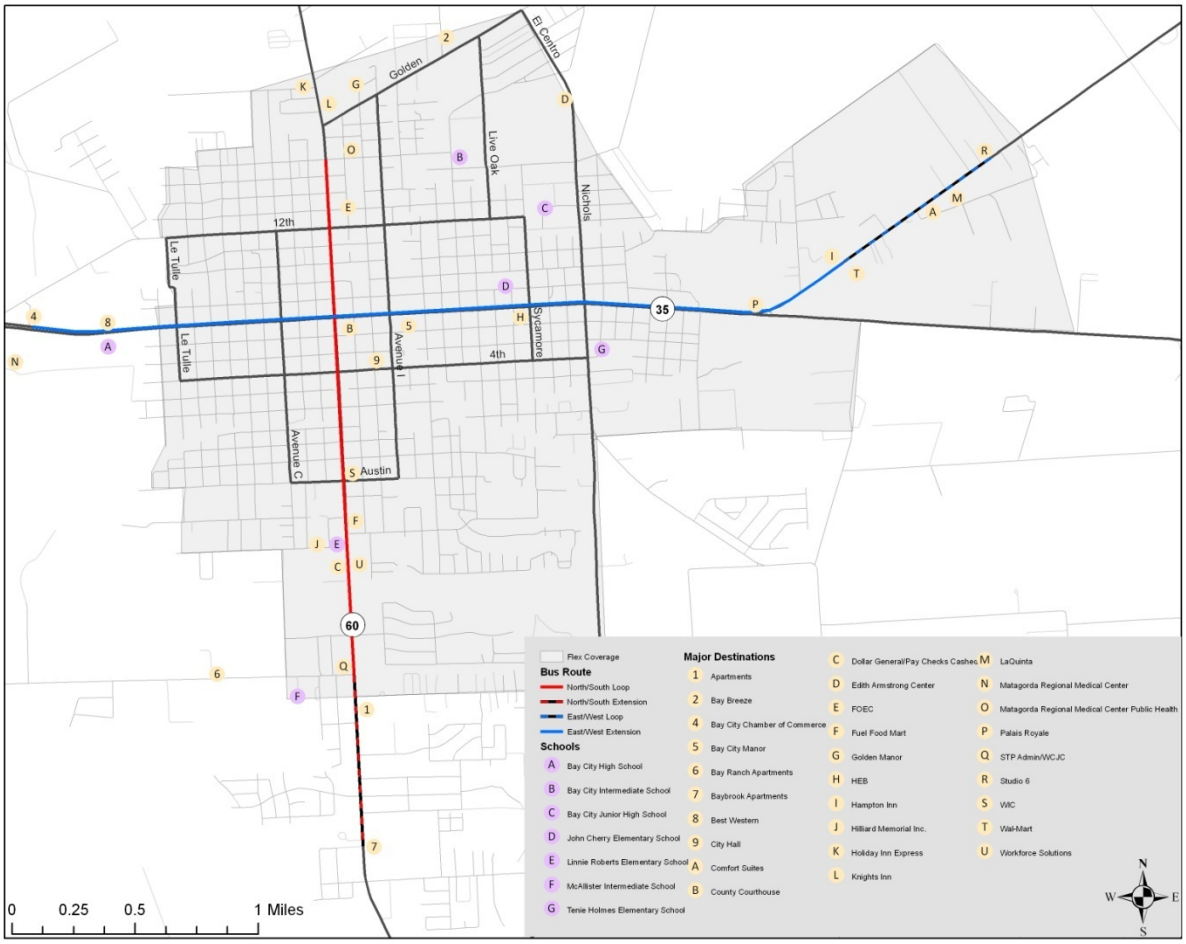

Figure 6.3: Bay City Flex Area

Service Plan: The flex option would be coupled with either Route A or Route B and the cost should be similar, based on a per hour basis. As mentioned above, it is recommended that the service be limited to eligible individuals. Eligibility may be determined by the type of funding used to support program. For example, it may be limited to individuals with disability, income level and job status, or a combination.

Challenges:

- Operating flex route is more complicated for operators and dispatchers and many transit agencies are unfamiliar with its operations.
- It can be difficult to maintain reliable schedules.
- Service can be confusing to riders.

Benefits:

- Provides greater coverage and easier passenger access for eligible riders than fixed route.
- Eliminates the requirement for ADA complementary para-transit services.

Connector and Circulator Services

County or regional connector service provides daily or weekly transit between Bay City and other county and/or regional destinations.

Low, Medium and High Investment Scenarios

Low Investment Scenario: Provides regularly scheduled weekly between Palacios and Bay City with existing demand response vehicles and drivers. Demand response vehicles stationed in Palacios would provide a regularly scheduled weekly trip to major destinations in Bay City, like the HEB, WalMart, and Town Center. Service would regularly scheduled for one day a week, possibly mid-day when demand for other trips may be the lowest.

Medium Investment Scenario: Pairs peak period fixed/flex service with a weekly connector to Palacios. A local circulator, using a fixed/flex vehicle, will provide distribution trips throughout the mid-day for connector passengers. The connector, using the second fixed/flex vehicle, would provide the trip between Palacios and Bay City during the mid-day. This cost would be incremental to the peak-period service. It is approximately 30 miles from Bay City to Palacios. Recommended destinations in Bay City include the Matagorda Regional Clinic, Town Center (SH35/SH65), HEB, Wal-Mart Supercenter, Matagorda Regional Public Health Clinic, and Workforce Solutions.

High Investment Scenario: Similar to weekly service but provided on a daily basis.

Table 6.7: Connector/Circulator Service Options	
Low	Regularly Scheduled Weekly Service with Demand Response Vehicles
Med	Peak Period with Weekly Connector to Palacios
High	Peak Period with Daily Connector to Palacios

The cost and details for each service option are outlined in Table 6.8, Connector / Circulator Service Option Cost and Performance below. Please note that these are incremental costs that would be added to peak period, fixed/flex service.

Table 6.8: Connector / Circulator Service Option Incremental Cost and Performance

	Low	Medium	High
Cost to Operate	$9,360	$28,000	$ 135,000
Vehicles	1	2	2
Staff	Operations through FOEC using existing resources.	Operations through Peak Period Service, Fixed/Flex Route Provider	Operations through Peak Period Service, Fixed/Flex Route Provider
Est. Revenue Hours	156	468	2,250
Est. Revenue Miles	3,120	4,680	15,000
Est. Number of Trips	468	1,872 (includes estimate of circulator trips)	11,250 (includes circulator trips)
Op Cost/Rev Hour	$60.00	$ 60.00	$ 60.00
Op Cost/Rev Mile	$3.00	$ 6.00	$ 9.00
Op Cost/Passenger Trip	$20.00	$ 15.00	$ 12.00

Challenges:

- Low cost option does not provide for circulation once in Bay City. Distribution trips may need to be scheduled within Bay City, which would add to existing demand.
- Low and Medium investment options provides once weekly or limited Bay City service. This may not suit some passengers who would like to access other county or regional destinations, or have more frequent service.

Benefits:

- Low investment option can provide regular weekly service at a low cost and with existing resources.
- Medium investment and high investment can provide regular weekly connector service as an extension of the peak period, fixed/flex service.

Job Access / Commute Options

Job Access / Commute Options include van pool service, park-and-ride, and low-cost options like car pooling. These services can target workers who are employed at sites outside of Bay City in the surrounding industrial facilities. The following section discusses some options for providing van pool services in Matagorda County, which can affect the cost of service.

Van pool services can be organized as follow:

- *Private Lease by Employer:* Requires a higher financial commitment on the part of the employer since no federal funds are directly available to non-FTA grantees. They may be easier to implement and can offer higher levels of control.
- *Private Lease through Public Transit Agency:* Requires that a private employer contract through a transit agency for privately provided van pool services. The public transit agency can apply for and receive federal funds. By contracting for services through a private company, a transit agency can use Capital Cost of Contracting to further lower the local share requirement.[3]
- *Public Transit Agency Provided Services:* Requires the public transit agency to operate the van pool on the behalf of the employer. By directly providing service, the transit agency cannot benefit from Capital Cost of Contracting, which can drive the cost higher.
- *Purchase of Vehicle through Public Transit Agency:* The public transit agency applies for federal funding to support 80 percent of the cost of a vehicle which is then operated by the employer.

Car pooling is currently taking place informally in Bay City. For example, some employees use the Wharton County Junior College /STP Administration parking lot as a meeting place. These informal arrangements can be supported and expanded upon by using car pool management services. For example, Nu Ride (www.nuride.com) is included in H-GAC's Commute Solutions website. In order to participate in NuRide, individuals must be associated with an affiliated organization, like an employer, in which case there is no cost for the individuals. According to the Nu Ride website, organizations can become affiliated at no or low cost.

Low, Medium and High Investment Scenarios

Low Investment Scenario: Promotion of car-pooling services through Bay City Chamber of Commerce and other stakeholders to Matagorda County employers and employees. Minimal to no investment required.

Medium Investment Scenario: Purchase of vehicle through public transit agency for use by employees. (As part of this study, TGC distributed surveys to employers and requested that they be distributed to their employees. Of those contacted, two employers participated - OXEA and Celanese. Forty-four employees indicated an interest in van pool services and 35 indicated an interest in park-and-ride.)

High Investment Scenario: Operation of van pool by transit agency for the benefit of employees. See Table 6.9, Commuter Service Options.

[3] Capital cost of contracting is a federal provision which allows a higher rate of reimbursement if services are provided by a private company. For the capital portion of the contract, costs are reimbursed at 80 percent, as opposed to the operating portion, which are reimbursed at 50 percent.

Table 6.9: Commuter Service Options	
Low	Car Pooling Promotion
Med	Van Pool with purchase of vehicle by Public Transit Agency and operations by Employee
High	Van Pool with operations by Public Transit Agency

The cost and details for each service option are outlined in Table 6.10, Commuter Service Option Cost and Performance below.

Table 6.10: Commuter Service Option Cost and Performance			
	Low	Medium	High
Cost to Operate	Minimal – to be negotiated between affiliated organization and Car Pool Management	$40,000 capital cost for vehicle ($32,000 or 80% is federal share; $8,000 or 20% is local share). Estimate $13,500 to operate annually.	$ 45,000
Vehicles	NA	1	1
Staff	Promotion of car pooling by existing organizations	Vehicle to be operated by employees	Vehicle to be operated by public transit agency.
Est. Revenue Hours	NA	NA	750
Est. Revenue Miles	NA	NA	22,500 (based on 30 mph)
Est. Number of Trips	NA	3,500 (7 people avg. per day)	3,500 (7 people avg. per day)
Op Cost/Rev Hour	NA	NA	$ 60.00
Op Cost/Rev Mile	NA	NA	$ 2.00
Op Cost/Passenger Trip	NA	NA	$ 12.86

Challenges:

- Implementation of van pool programs requires the cooperation of employers to promote the program and to provide the local share. If commuting and parking is not an issue for the employer, there may be little incentive to support the program. (The low response from employers to the survey is an indication that this is not perceived as an issue by many.)

- Most successful van pools travel longer distances. Bay City residents are traveling approximately 10 miles to the large industrial employers to the south. The cost savings for shorter distances are not as strong an incentive to join and remain with a van pool than longer distances. Van pool operations from Palacios may be more successful but few survey responses from Palacios were received.

Benefits:

- Promotion of car pooling is a low-risk, low-cost approach to commuting.
- Funding support to purchase a van pool vehicle is a one-time expense. The operations of the van pool will be the responsibility of the employer and employees. This is a lower risk approach than a transit agency operated program.
- Use of county- or city-owned property for use as a van pool lot may provide an additional source of local share value. Potential park-and-ride lot locations may include the Bay City Chamber of Commerce and Agriculture or the WCJC/STP Administration facility.

Conclusion

This chapter presents low to high investment options for demand response, fixed route, circulator, and commuter transit services. The transit options reflect appropriate modes for low-density rural areas, and small urban communities. Based on these options, a recommended service plan is discussed in the next chapter.

Chapter 7: Service Plan Recommendations

Introduction

This chapter provides the service plan recommendations for Matagorda County. These recommendations are based on public input, data, and appropriate modes for low density areas. The recommendations stem from those developed in Chapter 6, Service Options. The process used to develop the plan relied on a number of inputs. See Figure 7.1, Matagorda County Transit Plan Considerations, for an illustration of the process used to develop the plan's recommendations.

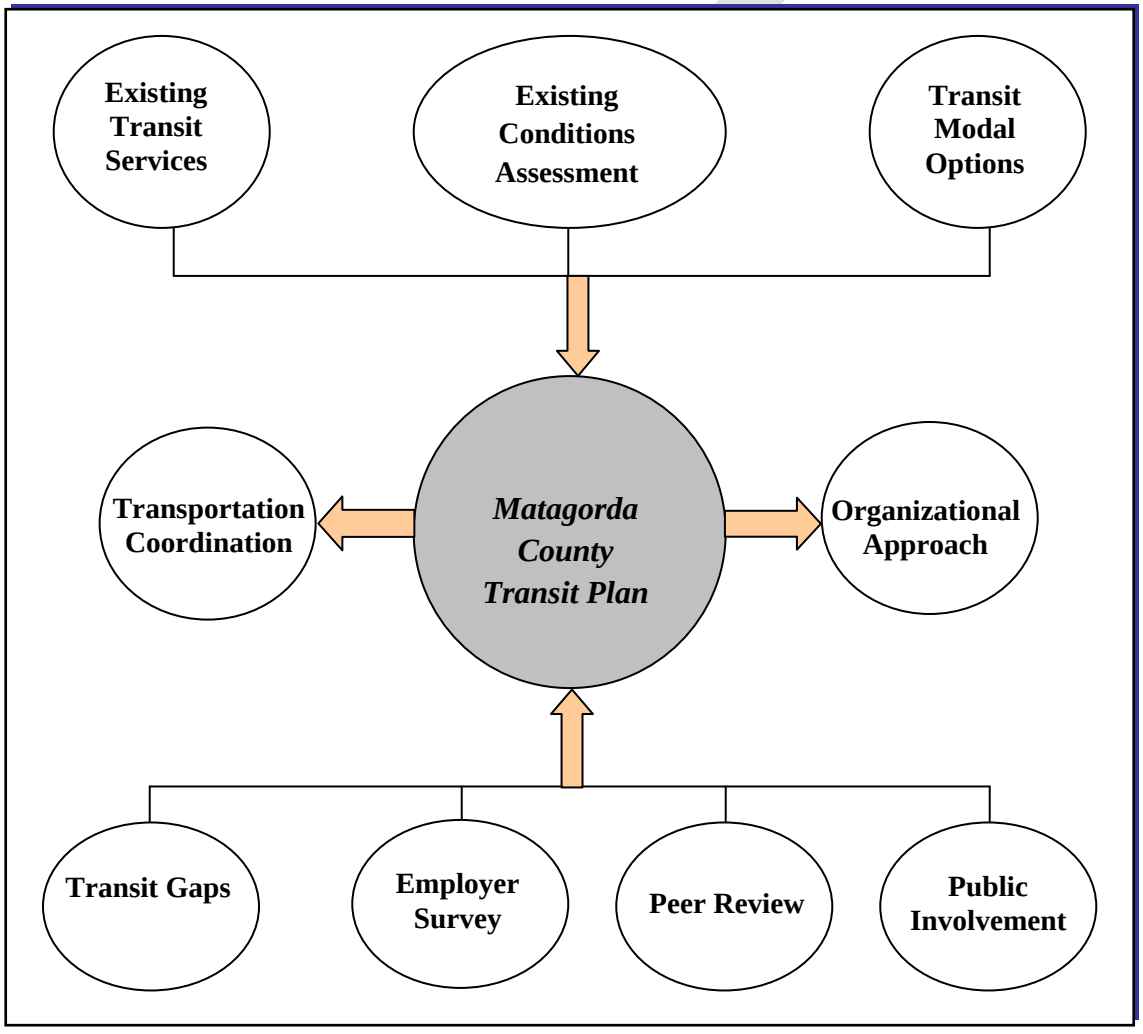

Figure 7.1 – Matagorda County Transit Plan Considerations

Plan Components

Key issues that are addressed in this service plan include:

- Increasing demand response capacity;
- Increasing connectivity between Palacios and Bay City;
- Providing cost-effective fixed or flex route service for Bay City;
- Providing commuter options for existing employees; and
- Evaluating the choice of service provider.

For each transit mode, a recommendation is given, an estimated cost, potential funding sources, and a recommended service provider.

Demand Response

Recommendation: Provide additional vehicle and driver for operation by FOEC. Provide regularly scheduled weekly connector service between Palacios and Bay City, to be expanded to other municipalities like the cities of Matagorda and Sargent.

Description: The additional vehicle and driver will provide FOEC the resources to provide more general public trips, which have decreased from 21,700 trips in FY2007 to 10,800 trips in FY2009. The additional resources will provide the capacity to provide regularly scheduled connector trips between Palacios and Bay City. Additional marketing and promotion of the demand response by the FOEC and other stakeholders is needed to expand awareness of this existing service to the public and to increase the return on the investment in additional services.

Table 7.1: Demand Response with Additional Vehicle and Driver	
Gross Operating Cost	$360,000
Less Fares	$11,500
Net Operating Cost	$348,500
Eligible Federal Share	$174,250
Eligible Local Share	$174,250
Capital Cost for Additional Vehicle	$50,000
Eligible Federal Share	$40,000
Eligible Local Share	$10,000

Funding Sources: This recommendation reflects the medium-level investment from Chapter 6. It is assumed that fare box recovery will continue at historical levels, approximately $1.00 per trip. Fares are calculated based on average trips per revenue hour, or 3 trips per hour. Eligible federal and local share for operating expense is based on public transit provider and does not take advantage of Capital Cost of Contracting. (See Chapter 8, Finance Implementation, for more information on Capital Cost of Contracting.) Capital cost for vehicle assumes conventional 80 percent/20 percent federal local share however Transportation Development Credits (TDCs) can be applied for local share requirement.

Sources of funding that can be used to support these services include Federal Section 5311 Rural Area Formula funding, State Public Transit Trust Funds, Section 5311 Elderly and Disabled (restricted use and typically applied toward the purchase of vehicle or preventative maintenance).

Recommended Provider: FOEC is the recommended provider.

Recommendation: Develop voucher/user side subsidy program for after-hour and other difficult-to-serve trips through the FOEC. Purchase wheelchair equipped vehicle for use by private taxi provider for user side subsidy/voucher program. Apply for Section 5317 New Freedom or Section 5316 Job Access Reverse Commute funds to support program.

Description: This element of the plan will provide transit services to eligible riders. Depending on the funding source, this can include people with mobility disabilities, the elderly, and/or low income workers and job-seekers. The program will provide another transit option for difficult-to-serve trips that cannot be met the FOEC.

Table 7.2: Voucher Program	
Gross Operating Cost	To be determined by Funding Made Available. Depending on funding source, up to 10% of the program cost can be requested for administrative expenses.
Less Fares	Estimate that Fare box recovery is 10%
Net Operating Cost	NA
Eligible Federal Share	50 percent
Eligible Local Share	50 percent
Capital Cost for Wheelchair Equipped Vehicle	$50,000
Eligible Federal Share	$40,000
Eligible Local Share	$10,000

The gross operating cost can be scaled to available funding. Under some funding programs, up to 10 percent of the request for funding can support administrative costs. For larger programs, administrative costs may represent about 25 percent of the budget; however small efforts have been managed with fewer resources. In some programs, fare box can recover about 35 percent of the cost of service.

Voucher programs typically reimburse at the operating rate of 50 percent federal share and 50 percent local share. Federal funding resources that can be used to support operations include Section 5311 Rural Area Formula Funding; Section 5316 Job Access Reverse Commute (JARC); Section 5317 New Freedom, and Section 5310 Elderly and Disabled.

TxDOT manages the distribution of both JARC and New Freedom funding for rural and small urban areas through a Consolidated Call for Projects. The last call for projects took place in the Summer 2009. TxDOT will release a similar call in July, 2010, but funding levels are not

determined at this time, but it is anticipated that approximately $6.5 million in New Freedom funds and $9.0 million in JARC funds will be made available.

Programs using JARC funding must be targeted to support trips made by individuals with limited income to employment or employment-related activities, such as education and training programs. New Freedom funds must support services for individuals with disabilities, as defined under the American with Disabilities Act (ADA).

Section 5310 Elderly and Disabled provides formula funding for transportation services for the elderly or people with disabilities. Within Matagorda County, it has been used primarily for maintenance or capital purchases. However the voucher program/user side subsidy is also an eligible expense.

Other sources of federal funding that can be used to support the subsidized shared ride/taxi program include:

- Temporary Assistance to Needy Families (TANF): TANF program provides assistance to needy families and funds may be used to support a wide range of services, including transportation. TANF funds may be used as the local match since they do not originate with the DOT.
- Workforce Investment Act (WIA): WIA funds can be used to support transportation including access to work, training programs or childcare. Similar to TANF, these funds can be applied as local share.

Local funds, including contract revenue, can be used as local match for the program. As mentioned, non-Department of Transportation funding is eligible as local match. This includes TANF and WIA funds. Local share can also be provided by in-kind donation, such as time spent by staff of partnering agencies to determine eligibility.

Recommended Provider: TGC recommends that the FOEC be the managing entity of the program in order to utilize under-leveraged local share the organization has through its local sources, such as Medicaid contract revenue, County funds, and United Way funds. Private providers like taxi cab companies would be secured through a Request for Proposals.

Fixed Route/Flex Route

Recommendation: Provide peak period, flex route service, Monday through Friday. The recommended route is Route A, which provides easy transfers between routes and 20 minute headways. This is the low investment level option presented in Chapter 6.

Description: Route A combines a North/South and East/West Loop that pulses at the interchange of SH35 and SH60. Peak period service targets workers and provides morning and late afternoon

service, typically 6:30 am to 9:30 am and 3:30 pm to 6:30 pm. The estimated fare is $1.00 per trip.

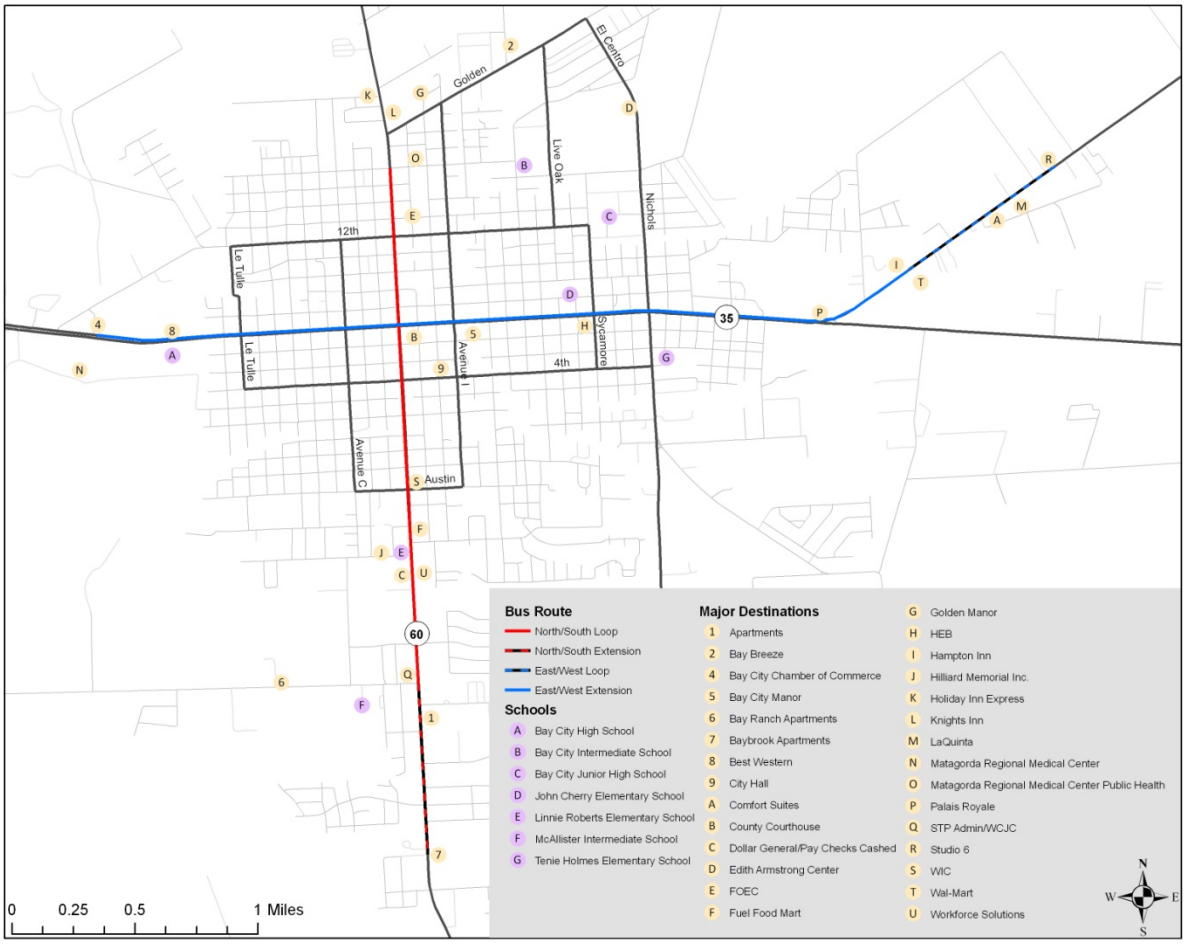

Figure 7.1: Route A Bay City

Funding: The program is eligible for support by the Section 5311 Rural Formula funds, State Public Transit Trust funds and Section 5316 JARC funds. The cost of the program assumes a $60 per hour operating cost and an average fare of $1.00 per trip. Fares reflect an estimated 5 trips per hour, a very conservative estimate and reflecting initial performance of the service.

Table 7.3: Fixed/Flex Route Service	
Gross Operating Cost	$180,000
Less Fares	$15,000
Net Operating Cost	$165,000
Eligible Federal Share	$82,500
Eligible Local Share	$82,500
Capital Cost for 2 Vehicles and 1 Spare	$150,000
Eligible Federal Share	$120,000
Eligible Local Share	$30,000

Recommended Provider: The Gulf Coast Center/Connect Transit is the recommended operator for this service.

Commuter Services

Recommendation: In the short-term, continue to work with industrial employers to develop commuter services options. Within 5 years, develop van pool services based on private provider to take advantage of Capital Cost of Contracting (CCC).

Description: Due to the low response level from large local employers, it is recommended that efforts to develop partnerships with employers continue for low-cost options like carpooling. The recommendation for a turn-key lease by private contractors through a transit agency enables the use of CCC, which can lower local share requirement. These options require a lower level of daily management from the transit agency.

Table 7.4: Commuter Service	
Car Pool	
Gross Operating Cost	No cost for employees but must be associated with an affiliated organization. Organizations can become affiliated at a low- or no-cost.
Less Fares	No fares are charged.
Eligible Federal Share	NA
Eligible Local Share	NA
Van Pool – Turn Key Lease through Private Firm	
Gross Operating Cost	$20,000 (lease, fuel, admin)
Less Fares	$5,250 (7 people, 250 days, $3.00 round trip)
Net Operating Cost	$14,750
Eligible Federal Share	$10,375 (Using Capital Cost of Contracting)
Eligible Local Share	$4,375 (Using Capital Cost of Contracting)

Funding: Funding sources that can be used to support van pools include Section 5316 JARC. It is recommended that any van pool leases are managed through a private firm which will contract with the public transit agency. This will allow the transit agency to support the program using federal funds and CCC. CCC will allow a reimbursement of some expenses at the higher capital rate of 80 percent. It is recommended that the local share requirement be provided by the employers.

Recommended Provider: Van pool services can be contracted through the transit agency with a private provider.

Choice of Transit Agency

Matagorda County is in a unique situation. It is located within the Houston-Galveston Area Council (H-GAC) planning area but it receives service from the GCRPC. This mis-alignment creates a challenge when coordinating the planning of services between the two entities. For example, the GCRPC does not receive any funding to support planning for Matagorda County; consequently it may not benefit to the same extent as other counties from GCRPC's planning efforts. Secondly, it can create a lack of buy-in from stakeholders when priorities between the regions are different.

Because of this mis-alignment, this study investigated the advantages/disadvantages of migrating service to a new provider. TGC asked each adjacent transit provider its interest in providing services to the county. As a quick reminder, a transit provider is the grant recipient for a service area. As the transit provider, it can provide service directly or contract for services on behalf of the County.

GCRPC: The GCRPC is willing to continue services to Matagorda County but is reticent to consider initiating additional services, such as fixed or flex route. The GCRPC has experience in Matagorda County and its performance statistics cost- and service-effectiveness are strong.

Gulf Coast Center/Connect Transit: The Gulf Coast Center/Connect Transit has indicated an interest in providing its services into Matagorda County. Connect Transit has recently expanded its services in Brazoria County to include fixed route and has many years of experience delivering demand response services in both Galveston and Brazoria counties. It also falls within the H-GAC planning area. Unlike the GCRPC, Connect Transit provides most services directly, rather than contracting for services like the GCRPC. However, this does not preclude Connect Transit from entering into contract with private providers, like the FOEC, to continue with demand response, should administration of transit be migrated to Connect Transit.

CVTD: The CVTD was asked if it was interested in becoming the service provider for Matagorda County. It operates in an environment similar to Matagorda County, provides both demand response and fixed route services with its "Loop and Link" system, and currently serves some Matagorda County residents through its vanpool services. Despite this similarity and these

capabilities, it did not indicate an interest in expanding its services into Matagorda County. The CVTD indicated that it had unmet need within its service area that was of higher priority than expanding its service area. Lastly, Matagorda County is outside of its planning area and therefore a migration of services to the CVTD does not address the mis-alignment of service provision with planning responsibility.

FBC: The FBC operates to the northeast of Matagorda County and is within the H-GAC planning area. However, its operating environment is more urban and it did not indicate an interest in expanding its services into Matagorda County.

Recommendation: TGC recommends that the transit agency with the authority to oversee transit service delivery in Matagorda County change from the GCRPC to the Gulf Coast Center/Connect Transit. This change is recommended for three reasons.

- First, it will facilitate the delivery of fixed or flex route service. In discussions with FOEC, it indicated that it did not have an interest in expanding its services to include fixed route. Discussions with GCRPC indicated a low level of interest in providing these services as well. However, the Gulf Coast Center/Connect Transit indicated that there is interest if there is sufficient funding to support operations. To facilitate this change, grant funds and vehicles that are currently controlled by the GCRPC would be transferred to the Gulf Coast Center/Connect Transit and contracts that are currently in place between the GCRPC and the FOEC would be re-negotiated between Gulf Coast Center/Connect Transit and the FOEC. Assuming a transfer occurs in 2010, TxDOT has estimated that approximately $79,000 in Federal Section 5311 and $79,000 in State administered Public Transit Trust Funds, would be available to support Matagorda County services.[1]

- Second, the transfer may support future directly-operated transit services. The FOEC has indicated that it considers its provision of transit service as secondary to its core mission to serve the elderly. Furthermore, the FOEC has also indicated that it will likely cease to provide general public transit services should it no longer hold a Medicaid transportation contract. An agency, like Gulf Coast Center/Connect Transit, is in a better position to provide demand response service directly should that become a need.

- Lastly, the transfer will align Matagorda County's planning area with its service area. As mentioned previously, this alignment can help ensure that plans, goals, and programs which are within H-GAC's program benefit Matagorda County.

[1] The funding allocation is drive by a two-part formula reflecting the Need of the region (75 percent) and the Performance of the transit provider (25 percent). This allocation reflects only the Need part of the formula. Future allocations would include a Performance portion, which is likely to be significantly less.

This recommendation does not come without its criticisms. As a rural county, Matagorda County's is concerned that its issues may be overwhelmed by large urban counties, like Harris County, within H-GAC. Furthermore, the county is pleased with its relationship with the GCRPC and wants to maintain its benefits, like the JARC service from Bay City, Blessing, and Palacios to the Inteplast facility.

Conclusion

The recommended service plan provides a variety of services for Matagorda County. Increased demand response capacity through an additional vehicle and driver for the FOEC is recommended. These additional resources need to focus on increasing the number general public transit trips, which has declined by about 50 percent over the last three years. One way this will be accomplished is through the implementation of regularly scheduled trips between Bay City and other municipalities, like Palacios. Increased demand response capacity is also developed through the voucher program. This recommendation places the program under the administration of the FOEC, in order to use under-leveraged local funds for the expansion of transit options in the county. Fixed/flex route service is recommended for Bay City. This will be a peak-period service which will be operated by the Gulf Coast Center/ Connect Transit. Commute recommendations include the promotion of low cost carpooling promotion and the initiation of van pools for local industrial sites.

Chapter 8: Finance Plan

Introduction

This chapter provides the finance plan to initiate services as recommended in Chapter 7, Service Plan Recommendations. Assumptions used to calculate the operating costs are discussed in the first section. Budgets for Year 1 to 5 are outlined along with the sources and uses of federal, state, and local resources. The last section discusses strategies to generate additional local share value and leverage existing local financial contributions.

The need for transit services for rural communities has never been greater. However, the availability of resources to support same has never been more constrained. Abundant federal resources remain the mainstay transit systems, particularly in rural areas where dedicated sources of funding for transit are virtually non-existent. The State of Texas has not increased its Public Transit Trust Fund support statewide for many years. The result has been an increasing demand for local cash and other resources to match federal and available state resources. This environment demands that local communities commit between 20 and 25 percent of the total resources required to support ongoing demand response and fixed route services. The ability to provide the local resources required to support on-going or newly introduced transit services for rural areas can be met through the support of local stakeholders who have a direct interest in public transit services for their community.

The services being addressed through this plan, to be introduced over a five year period, should only be initiated if local stakeholders are willing to commit, at a minimum, three years' of financial (cash and/or "in kind") support to the program. The introduction of new transit services often require six to twelve months to come to fruition. While ineffective services can always be quickly terminated, successful service requires a long term commitment to be fully realized.

Operating Cost Assumptions

In this section, assumptions used in estimating the operating budget are discussed by type of service and year. Following this, Table 8.1, Matagorda County Transit Plan Federal and Local Share, outlines the Gross Operating Cost, Fares, and Net Operating Cost for each service type, for Years 1 through 5.

Demand Response Service: The cost of demand response service is inflation-adjusted 3 percent annually. This is a conservative assumption and above the 2 percent average rate over the past 10 years.

- Year 0 – Demand response costs reflect the FY2009 financials from the FOEC. It provides the basis for comparing changes generated by new service implementation in Year 1.

- Year 1 – Demand response costs reflect the addition of another driver for FOEC demand response service. The costs are based on 6 vehicles, each operating for 2,000 hours (8 hours, 250 days a week). Fares are $1.00 per trip but exclude Medicaid trips.

- Year 2 to 5 – Demand response fares are incrementally increased to reflect anticipated higher ridership stimulated by more advertising and promotion of service.

Fixed/Flex Route Service: The cost of fixed/flex service is inflation-adjusted 3 percent annually.

- Year 1 to 2: No service is provided to allow time to develop support and financial commitments for the program. In addition, this will allow time to migrate the transit agency authority from the GCRPC to the Gulf Coast Center/Connect Transit, which will operate the service.

- The fixed/flex cost is based on 2 vehicles operating 6 hours daily (a peak period service with 3 hours in the morning and evening each) and $60 an hour per vehicle. Fares are $1.00 and it is assumed that the initially 5 passengers per hour will use the service. This is a conservative estimate which increases by Year 5 to 7 passengers per hour.

- Year 3 to 5: Fares for fixed/flex increase under the assumption that an additional passenger per hour is reflected each year.

Voucher Program: The cost of the voucher program is based on funding that can be secured through programs such as Section 5316 Job Access/Reverse Commute or Section 5317 New Freedom. The voucher program is not inflation adjusted.

- Year 1 – No voucher program is initiated in Year 1. It is recommended that this year be used to plan for the program and develop partnerships with organizations, like Workforce Solutions, which may have funding through the Workforce Investment Act (WIA) and Temporary Assistance to Needy Families (TANF), that could be used to leverage additional federal transit funding for this program.

- Year 2 – The voucher program is initiated. The value of the program is currently based on the availability of local share that the FOEC is not currently leveraging, which consists of excess Medicaid contract revenue, United Way and Matagorda County contributions. Additional sources of local share may be used include WIA and TANF funds.

- Year 3 to 4 – No changes to program.

- Year 5 – It is assumed that the contract for funding will last three years (or Years 2 to 4) and expire in Year 5. The higher program amounts reflects a re-application for funding.

Van Pool Program: The van pool program does not initiate until Year 4. It is assumed that the van pool program will utilize Section 5316 JARC funding.

- Year 4 to 5 - The cost reflects a lease for a single 12-passenger luxury style van through a private provider ($20,000 annually). Fares are based on 7 passengers and $3.00 round-trip fare.

Federal and Local Share

The cost of transit services is divided into a federal share and a local share. Depending on the type of expense, the federal share ranges from a low of 50 percent of the cost for operating to 80 percent for capital expenditures. For operating expenses, the federal and local share is calculated after fares have been deducted from the gross cost of service. See Table 8.1, Matagorda County Transit Plan Federal and Local Share for a five-year snapshot of federal and local share.

Table 8.1: Matagorda County Transit Plan Federal and Local Share

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Gross Op						
DR	$ 270,000	$ 360,000	$ 370,800	$ 381,924	$ 393,382	$ 405,183
Voucher	$ -	$ -	$ 30,000	$ 30,000	$ 30,000	$ 35,000
Fix/Flex	$ -	$ -	$ -	$ 180,000	$ 185,400	$ 190,962
Van Pool	$ -	$ -	$ -	$ -	$ 20,000	$ 20,000
Total	**$ 270,000**	**$ 360,000**	**$ 400,800**	**$ 591,924**	**$ 628,782**	**$ 651,145**
Fares						
DR	$ 9,500	$ 11,500	$ 12,000	$ 12,500	$ 13,000	$ 13,500
Voucher	$ -	$ -	$ 3,000	$ 3,000	$ 3,000	$ 3,500
Fix/Flex	$ -	$ -	$ -	$ 15,000	$ 18,000	$ 21,000
Van Pool	$ -	$ -	$ -	$ -	$ 5,250	$ 5,250
Total	**$ 9,500**	**$ 11,500**	**$ 15,000**	**$ 30,500**	**$ 39,250**	**$ 43,250**
Net Op						
DR	$ 260,500	$ 348,500	$ 358,800	$ 369,424	$ 380,382	$ 391,683
Voucher	$ -	$ -	$ 27,000	$ 27,000	$ 27,000	$ 31,500
Fix/Flex	$ -	$ -	$ -	$ 165,000	$ 167,400	$ 169,962
Van Pool	$ -	$ -	$ -	$ -	$ 14,750	$ 14,750
Total	**$ 260,500**	**$ 348,500**	**$ 385,800**	**$ 561,424**	**$ 589,532**	**$ 607,895**
Fed Sh.	$ 130,250	$ 174,250	$ 192,900	$ 280,712	$ 297,766	$ 306,198
Local Sh.	$ 130,250	$ 174,250	$ 192,900	$ 280,712	$ 291,766	$ 300,198

With the exception of the van pool program, the federal and local shares are each 50 percent. The van pool program assumes lease of privately owned vehicles and therefore makes the service eligible for a higher amount of federal support through Capital Cost of Contracting ($10,375 federal share and $4,375 local share).[1] The federal share can be supported with FTA funding programs, such as Section 5311 Rural Formula Funding and competitive programs like Section 5316 Job Access Reverse Commute (JARC) and Section 5317 New Freedom. The local share can be supported with TxDOT Public Transportation Trust Funds that are allocated annually as well as local funds from organizations like Bay City, Matagorda County, the FOEC and others

Year 1 Operating Budget

Table 8.2, Year 1 Operating Budget, outlines the federal, state, and local resources that will be used to support each of the transit programs in the first year. The far-right column reflects any unexpended balance of funds. An explanation of fund programming is below. Year 1 reflects the addition of an additional drive and vehicle for demand response service.

Table 8.2: Year 1 Operating Budget

	Total	DR	Voucher	Fix/Flex	Van Pool
Net Cost of Program	348,500	348,500	-	-	-
Federal Share	174,250	174,250	-	-	-
Local Share	174,250	174,250	-	-	-
FEDERAL RESOURCES					
Section 5311_Federal	82,000	82,000	-	-	-
Section 5310_Elderly & Disabled	-	-	-	-	-
Section 5316_JARC	-	-	-	-	-
Section 5317_New Freedom	-	-	-	-	-
STATE RESOURCES					
State Public Transit Trust Fund	82,000	82,000	-	-	-
Section 5311_Discretionary	-	-	-	-	-
LOCAL RESOURCES					
Bay City, Matagorda County, etc.	-		-	-	-
FOEC	184,500	184,500	-	-	-
Employers	-	-	-	-	-
Total	348,500	348,500	-	-	-

Federal Resources

- Section 5311 Federal funds are allocated each year by TxDOT by formula that recognizes the Needs of the service area and the Performance of the transit provider. The amount reflected above, $82,000, reflects the estimate provided by TxDOT ($79,000) for the Needs portion of the formula for FY2010, plus the estimate calculated by TGC ($3,000) for the Performance portion of the formula.

State Resources

- State Public Transit Trust Funds are allocated by formula, similar to the Section 5311 Federal program; it is based on the Need of the community and the Performance of the transit provider. As a part of this study, TxDOT estimated what Matagorda County would generate for Need portion of the formula, which was $79,000. TGC estimated the Performance portion to the $3,000 for a total of $82,000. These funds are used to match the Federal 5311 funds noted above.

Local Resources

- The FOEC generates about $180,000 annually through its Medicaid contract. Matagorda County currently contributes about $39,000 to the FOEC, of which approximately $12,000 is for transportation. Similarly, United Way currently contributes about $9,000 to the FOEC for transportation. It is recommended that a portion of the surplus funding generated through the Medicaid contract, as well as other unleveraged resources, should be available, subject to FOEC concurrence, to match other federal funds to expand general public transit services.

Year 2 Operating Budget

Table 8.3, Year 2 Operating Budget, reflects the addition of the voucher program. The plan recommends that the FOEC initiate the voucher program and match the federal funding from Section 5317 New Freedom with local funds that are not currently being leveraged.

Table 8.3: Year 2 Operating Budget					
	Total	**DR**	**Voucher**	**Fix/Flex**	**Van Pool**
Net Cost of Program	385,500	358,800	27,000	-	-
Federal Share	192,900	179,400	13,500	-	-
Local Share	192,900	179,400	13,500	-	-
FEDERAL RESOURCES					
Section 5311_Federal	82,000	82,000	-	-	-
Section 5310_Elderly & Disabled	-	-	-	-	-
Section 5316_JARC	-	-	-	-	-
Section 5317_New Freedom	13,500	-	13,500	-	-
STATE RESOURCES					
State Public Transit Trust Fund	82,000	82,000	-	-	-
Section 5311_Discretionary	-	-	-	-	-
LOCAL RESOURCES					
Bay City, Matagorda County, etc.	-		-	-	-
FOEC	208,300	194,800	13,500	-	-
Employer	-	-	-	-	-
Total	385,500	358,800	27,000	-	-

Federal Resources

- Section 5311 Federal funds are assigned similar to Year 1. Based on the fund formula, they are allocated to the FOEC for the support of demand response services.
- Section 5317 New Freedom funds support the voucher program. Under the New Freedom program, the voucher program must provide trips to people who are eligible under the ADA for para-transit services. (A voucher program could also be instituted under Section 5316 JARC if it targets low-income workers, those looking or training for work.)

State Resources

- State Public Transit Trust Fund is similar to Year 1. These state funds are used to match the Section 5311 Federal funds discussed above.

Local Resources

- FOEC local resources are calculated from the value of all FOEC's financial resources, less all expenditures, as reflected in its TxDOT reporting. It does not reflect funding from Matagorda County and United that is not currently reported. It is recommended that these local resources be used to continue matching the demand response program as well as support the new voucher program.

Year 3 Operating Budget

Table 8.4, Year 3 Operating Budget, reflects the addition of the fix/flex service to the demand response service and the voucher program.

Table 8.4: Year 3 Operating Budget

	Total	DR	Voucher	Fix/Flex	Van Pool
Net Cost of Program	561,424	369,424	27,000	165,000	-
Federal Share	280,712	184,712	13,500	82,500	-
Local Share	280,712	184,712	13,500	82,500	-
FEDERAL RESOURCES					
Section 5311_Federal	84,000	84,000	-	-	-
Section 5310_Elderly & Disabled	-	-	-	-	-
Section 5316_JARC	82,500	-	-	82,500	-
Section 5317_New Freedom	13,500	-	13,500	-	-
STATE RESOURCES					
State Public Transit Trust Fund	84,000	84,000	-	-	-
Section 5311_Discretionary	41,250	-	-	41,250	-
LOCAL RESOURCES					
Bay City, Matagorda, etc.	41,250		-	41,250	-
FOEC	214,924	201,424	13,500	-	-
Employer	-	-	-	-	-
Total	561,424	369,424	27,000	165,000	-

Federal Resources

- Section 5311 Federal funds are assigned similar to Years 1 and 2.
- Section 5317 New Freedom funds are assigned similar to Years 1 and 2.

- Section 5316 JARC (Job Access/Reverse Commute) funds must target low-income workers, and individuals seeking employment and/or job training. The fix/flex route is a peak-period service that will target these individuals. It is recommended that stakeholders pursue funding through this category, which is administered through TxDOT's Coordinated Call for Projects. This budget reflects $82,500 in JARC funding which will be matched with state and local funds.

State Resources

- State Public Transit Trust fund is similar to Years 1 and 2. These state funds are used to match the Section 5311 Federal funds used for demand response service.

- Section 5311 Discretionary funds are controlled by TxDOT. The funding source is generated from a percentage of the Section 5311 apportionment it receives each year and TxDOT can dedicate these funds to discretionary projects. TGC recommends that Matagorda County request support for 25 percent of the fixed/flex program (or $41,250) to match part of the JARC request of $82,500. TGC recommends that the discretionary funds be matched equally with local funds.

Local Resources

- Bay City funds are used in combination with the Section 5311 Discretionary and the Section 5316 JARC programs to fund the fixed/flex service. The Bay City contribution may include contributions from the City and other stakeholders such as Matagorda County, the Wharton County Junior College, Matagorda County Economic Development and others.

Year 4 Operating Budget

Table 8.5, Year 4 Operating Budget, reflects the addition of the van pool service to the demand response, fixed/flex services and the voucher program.

Table 8.5: Year 4 Operating Budget

	Total	DR	Voucher	Fix/Flex	Van Pool
Net Cost of Program	589,532	380,382	27,000	167,400	14,750
Federal Share	297,766	190,191	13,500	83,700	10,375
Local Share	291,766	190,191	13,500	83,700	4,375
FEDERAL RESOURCES					
Section 5311_Federal	86,000	86,000	-	-	-
Section 5310_Elderly & Disabled	-	-	-	-	-
Section 5316_JARC	94,075	-	-	83,700	10,375
Section 5317_New Freedom	13,500	-	13,500	-	-
STATE RESOURCES					
State Public Transit Trust Fund	86,000	86,000	-	-	-
Section 5311_Discretionary	41,850	-	-	41,850	-
LOCAL RESOURCES					
Bay City, Matagorda County, etc.	41,850		-	41,850	-
FOEC	221,882	208,382	13,500	-	-
Employer	4,375	-	-	-	4,375
Total	589,532	380,382	27,000	167,400	14,750

Federal Resources

- Section 5311 Federal funds are assigned similar to Years 1 through 3.
- Section 5317 New Freedom funds are assigned similar to Years 1 through 3.
- Section 5316 JARC (Job Access/Reverse Commute) funds are assigned similar to Year 3 for the fixed/flex service and for the van pool service.

State Resources

- State Public Transit Trust fund is similar to Years 1 through 3. These state funds are used to match the Section 5311 Federal funds used for demand response service.
- Section 5311 Discretionary funds are similar to Year 3.

Local Resources

- Bay City funds are similar to Year 3.
- FOEC revenue is calculated similar to Years 1 through 3.
- Employer funds are used to provide the local share for the van pool program. This budget reflects a federal and local share calculated using Capital Cost of Contracting which allows a higher reimbursement rate for the capital portion of the contract if it is held by a private provider.

Year 5 Operating Budget

Table 8.6, Year 5 Operating Budget, reflects the implementation of all recommended services.

Table 8.6: Year 5 Operating Budget

	Total	DR	Voucher	Fix/Flex	Van Pool
Net Cost of Program	606,394	391,683	30,000	169,962	14,750
Federal Share	306,198	195,842	15,000	84,981	10,375
Local Share	300,198	195,842	15,000	84,981	4,375
FEDERAL RESOURCES					
Section 5311_Federal	88,000	88,000	-	-	-
Section 5310_Elderly & Disabled	-	-	-	-	-
Section 5316_JARC	95,356	-	-	84,981	10,375
Section 5317_New Freedom	15,000	-	15,000	-	-
STATE RESOURCES					
State Public Transit Trust Fund	88,000	88,000	-	-	-
Section 5311_Discretionary	42,490	-	-	42,490	-
LOCAL RESOURCES					
Bay City, Matagorda, etc.	42,490		-	42,490	-
FOEC	230,683	215,683	15,000	-	-
Employer	4,375	-	-	-	4,375
Total	606,394	391,683	30,000	169,961	14,750

Federal Resources

- Section 5311 Federal funds are assigned similar to Years 1 through 4.

- Section 5317 New Freedom funds are assigned similar to Years 1 through 4.
- Section 5316 JARC (Job Access/Reverse Commute) funds are assigned similar to Year 3 for the fixed/flex service and Year 4 for van pool service.

State Resources

- State Public Transit Trust fund is similar to Years 1 through 4. These state funds are used to match the Section 5311 Federal funds used for demand response service.
- Section 5311 Discretionary funds are similar to Years 3 to 4.

Local Resources

- Bay City funds are similar to Year 3 and 4.
- FOEC contract revenue and local resources are applied in the same way as Years 1 through 4.
- Employer funds are similar to Year 4.

Capital Expenditures

The section above focused on operating expenditures. The new services will require additional capital investment in vehicles for the demand response, voucher, and fixed/flex services and shelters for the fixed/flex service.

- Year 1: $50,000 ($40,000 federal and $10,000 local share) for additional vehicle for demand response service.
- Year 2: $100,000 ($80,000 federal and $20,000 local share) for vehicle for voucher program, wheelchair equipped vehicles.
- Year 3:
    - $150,000 ($120,000 federal and $30,000 local share) for 2 operating and 1 spare vehicle for fixed/flex service.
    - $25,000 ($20,000 federal and $5,000 local share) for signage and shelter at intersection of SH60 and SH35.

Federal resources for vehicle purchases include Section 5310 Elderly and Disabled, Section 5316 JARC and Section 5317 New Freedom. Local resources include Transportation Development Credits (TDC); local communities can apply for TDCs for vehicle purchases through TxDOT.

Other sources of local share may include in-kind contributions for the installation of signage and shelter.

Strategies to Maximize Local Share

The Year 1 to 5 operating budgets reflect the cash requirements for the recommended programs and the sources of funding. At this stage, they do not reflect potential local sources of value that, if brought to the table, could either reduce local share cash requirements or provide the local match to expand programs. The following section discusses some strategies to maximize the local value within Matagorda County in order to minimize cash requirements.

In – Kind Contributions: Matagorda County stakeholders have existing assets and services that can benefit the transit program. When these assets and services are incorporated into the transit program's funding, they can decrease the local share cash requirement.

For example, assume a transit program's operating cost is $100,000. Because operating costs are supported with 50 percent federal funding and 50 percent state and local funding, each entity supports $50,000 of the cost. Alternatively, assume that the transit program's operating cost is $100,000 plus $25,000 for advertising supported by stakeholder groups. The value of the program is now $125,000. The federal share is $62,500 or 50 percent. The local share is comprised of the in-kind value of $25,000 plus cash for $37,500. This is a difference of $12,500 (or fifty percent of the in-kind value) in the local cash requirement.

Under-leveraged Local Funds: Through its access to TxDOT-funded vehicles and operating support, the FOEC has the capacity to secure and hold a Medicaid contract. From TxDOT reports which the FOEC files quarterly, it appears that the FOEC generates revenue above expenses; in FY2009, this amount was approximately $60,000. With FOEC concurrence, a portion of this revenue can leverage additional state and federal funding to expand transit in the region. This plan recommends that that some excess revenue be re-invested back into transit in support of the voucher program as a first step toward expanding and diversifying services for Matagorda County.

Transportation Development Credits (TDC): TDCs are distributed by TxDOT through a competitive process. The TDCs can be used in lieu of local cash for the purchase of vehicles.

Conclusion

There are a number of federal and state programs that can be used to expand transit in Matagorda County. However, it is critical that local communities demonstrate a financial commitment to transit in order to access these funds. This investment can come from several sources. County stakeholders can partner to provide more cash support. These stakeholders may include the City of Bay City, the City of Palacios, the Matagorda County Economic Development Corporation, and others. Prior to implementing the plan, securing consensus and financial support among

stakeholders is necessary. Secondly, local revenues that can support transit expansion should be evaluated. For example, the FOEC generates some excess revenue from its Medicaid contract. These contract revenues, made possible through the FOEC's access to TxDOT funded vehicles and operating funds, can be re-invested to expand transit locally. Lastly, the opportunity to reflect the value of in-kind contributions needs to be considered prior to the finalizing budgets. To the extent that opportunities exist within the county, such as lease space for vehicles or advertising support, they should be incorporated into the final budget.

Chapter 9: Implementation Plan

Introduction

The recommended service plan will be implemented over a five year period. The incremental addition of services will allow agencies and sub-contractors time to develop the policies and procedures for new services as well as provide local stakeholders time to develop partnerships and secure local resources.

Year 1

- Begin transition from GCRPC to Gulf Coast Center/Connect Transit.
    - Gain consensus from local stakeholders to end oversight and responsibility for the provision of transit by GCRPC and to initiate a new relationship with Gulf Coast Center/Connect Transit. This transition will require the Matagorda County Commissioner's Court pass a resolution dissolving its agreement with GCRPC and indicating a desire to enter into a new agreement with the GCRPC.
    - Pass a similar resolution from the Gulf Coast Center/Connect Transit Board of Directors supporting the transition and accepting the role as transit agency for Matagorda County.
    - Begin negotiations for the transition of funding and assets from the GCRPC to Gulf Coast Center/Connect Transit.
- Initiate additional demand response service through FOEC.
    - Pursue funding for additional vehicle through the TxDOT Section 5311 Elderly and Disabled program. Request Transportation Development Credits for local match for vehicles through TxDOT.
    - Develop partnerships to market and promote transit services. Potential partners may include the Matagorda County Economic Development Corporation, the Bay City Community Development Corporation, the Bay City Chamber of Commerce, United Way of Matagorda County, Economic Action Committee, etc.
    - Initiate weekly connector trips between Palacios and Bay City.
- Plan for initiation of voucher program in Year 2.
    - Form working group to develop voucher program. Potential partners may include FOEC, Workforce Solutions, and Matagorda County MHMR. (See Appendix A: Voucher Program Implementation for some guidelines and suggestions from the Community Transportation Association of America.)

  - Develop a Request for Information to distribute to potential vendors.
  - Secure local resources and apply for program funding through the TxDOT Coordinated Call for Projects for operating and capital expenses.

- Plan for initiation of fixed/flex service in Year 3.
  - Continue developing local commitment and financial support for program.
  - Support transfer of agency authority from GCRPC to Gulf Coast Center/Connect Transit.

- Continue developing partnerships with local industries for commute solutions. For example, information and resources on van pooling and car pooling can be made available through the Bay City Chamber of Commerce and the Matagorda County Economic Development Corporation.

Year 2

- Finalize transition from GCRPC to Gulf Coast Center/Connect Transit.
  - Complete negotiations with TxDOT for transfer of transit agency authority.
  - Complete transfer of vehicles and other assets from GCRPC to Gulf Coast Center/Connect Transit.
  - Re-negotiate contracts with FOEC for provision of demand response service.

- Initiate voucher program.

- Continue planning for initiation of fixed/flex route service through Gulf Coast Center/Connect Transit
  - Secure commitments for local funding.
  - Finalize route and stops.
  - Apply for program funding through the TxDOT Coordinated Call for Projects for operating support and vehicles.
  - If fixed, not flex, service is implemented, establish ADA complementary para-transit policies and procedures.

- Continue developing partnerships with industrial employers for commute solutions.

Year 3

- Initiate fixed/flex service through Gulf Coast Center/Connect Transit.
- Apply for funding through TxDOT Coordinated Call for support of van pool program.

Year 4

- Continue provision of services for demand response, voucher program, and fix/flex service.
- Initiate van pool program.

Year 5

- All services implemented.