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City of DeSoto Strategic Public Transportation Planning Study

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Table of Contents

Page

Executive Summary ES-1
Introduction ES-1
Existing Conditions of Transportation ES-1
Needs Assessment ES-2
Potential Services to Meet Community Needs ES-2
Recommended Phasing of Public Transportation Measures ES-3
Case Studies of Service Concepts Implemented in the Area ES-3
Financing ES-4
Chapter 1. Introduction 1
Background 1
Project Goals and Approach 1
Chapter 2. Existing Conditions 2
Profile of DeSoto 2
Profile of the Best Southwest Cities 15
Existing Transit Services 24
Travel Demand Patterns 33
Summary of Previous Discussions about Transit 37
Chapter 3. Ingredients of Successful Transportation Services 39
Matching Transportation to Trip Purpose 39
The Connection to Land Use 39
The Transit Toolbox 42
Chapter 4. What Residents Say About Public Transportation 44
Stakeholder Interviews 44
Travel Options Survey 44
Chapter 5. Potential Public Transportation Markets 49
Regional Commuters (Work Trips) 49
Local Commuters 53
Local Non-Commute Trips 55
Local Transport for Persons with Disabilities/Seniors 56
Youth Transportation 57

Airport Transportation 58
Chapter 6. Overall Assessment of Need and Recommendations 59
Recommended Services and Hypothetical Staging Plan 62
Services Not Recommended for DeSoto 65
Chapter 7. Case Studies and Application in DeSoto 67
Chapter 8. Financing and Revenue Options 76
Federal Funding 76
State Funding 79
Local Funding 79
Summary of Financing/Funding Options 85
Appendix A: Stakeholder Interview Report ..... A
Appendix B: Survey Sheet and Overview of Survey Validation ..... B
Appendix C: Survey Data Analysis C
Appendix D: Types of Transit Service ..... D

Table of Figures

Page

Figure 1 Population Growth since 1970 3
Figure 2 DeSoto Population Densities 4
Figure 3 Projected 2025 Congestion in DeSoto 6
Figure 4 2009 Levels of Congestion 7
Figure 5 Congestion After Implementation of the Regional Transportation Plan 8
Figure 6 No Build Levels of Congestion 8
Figure 7 Air Quality Trend 2000-2010 9
Figure 8 Nearby DART stations 10
Figure 9 Pleasant Run Design Concept 11
Figure 10 Area of Influence for the Hampton Road Corridor 12
Figure 11 Proposed Dallas Area Rail Services 18
Figure 12 Corridor E-5 - Midlothian 19
Figure 13 Corridor E-6 – Waxahachie 21
Figure 14 Planned UNT Campus 22
Figure 15 DART Rail System 24
Figure 16 Travel Demand Zones 33
Figure 17 2009 Travel Patterns Home-Based Work Trips 35
Figure 18 2025 Travel Patterns Home-Based Work Trips 36
Figure 19 Transit Supportive Population and Employment Densities 41
Figure 20 Residential Densities in the City of DeSoto 42
Figure 21 Major Commute Destinations for DeSoto Residents 50
Figure 22 Service Alternatives Scoring Summary 61

Table of Tables

Page

Table 1 Projected Population and Employment Growth in DeSoto 3
Table 2 Age Distribution of DeSoto's Population 4
Table 3 Major Employers in DeSoto 5
Table 4 Development Potential for the Hampton Road Corridor 12
Table 5 Demographic Summary of Best Southwest Cities 15
Table 6 Regional Rail Assumptions – Waxahachie Line 20
Table 7 Travel Demand Patterns – Work and Total Trips 34
Table 8 Summary of Public Transportation Strategies 43
Table 9 DeSoto Household Size (Survey Results) 46
Table 10 Survey respondents who say they would use public transportation for some regular trips46
Table 11 People Who Report Riding Public Transportation in the Past Year 47
Table 12 Persons Best Served By Public Transportation (Weighted Average) 47
Table 13 Persons Who Say They Would Use Transit, If Available 48
Table 14 Best Destinations for Public Transportation 48
Table 15 Potential Commute Markets from DeSoto 51
Table 16 Work Locations of Survey Respondents 53
Table 17 Commute Mode of Work Trips to DeSoto and Surroundings 53
Table 18 Likelihood of Using Public Transportation for Local Commutes 53
Table 19 Non-Commute Destinations and Trip Purposes (Number of Responses) 55
Table 20 Non-Commute Trips by Frequency (Number of Responses) 55
Table 21 Frequency of Travel Within The Best Southwest Cities Area – Likely Users Only 56
Table 22 Ranked Choice of Transit Service Alternatives – Likely Users Only 56
Table 23 Potential Costs for Strategies 74
Table 24 Summary of Financing/Funding Options Strengths and Weaknesses 86

Executive Summary

Introduction

The City of DeSoto is a growing community located southwest of Dallas, Texas. It is one of the four Best Southwest cities, along with Cedar Hill, Duncanville, and Lancaster. The city is one of the Dallas area's oldest cities, and has grown from a small farming town to a community of nearly 50,000 residents. DeSoto is characterized by low-density single family housing with commercial development along major arterial streets, and highway connections to locations throughout the Dallas-Fort Worth area.

DeSoto currently does not have any public transportation services available to residents, employees, or visitors. DeSoto is not a member city of the Dallas Area Rapid Transit (DART) system, although some DART routes run close to the city. Transportation-related issues, such as congestion-related delay on the region's highways and limited mobility for seniors and persons with disabilities, are expected to worsen in the coming years.

The development of this Transit Needs Assessment Study included stakeholder and public opinion outreach, background research into DeSoto's transportation needs and existing planning documents, case studies, and recommendations for next steps. The objectives of this study were as follows:

1. Identify current and likely future travel demand patterns in and around the City of DeSoto.
2. Assess the potential for operating effective and efficient transit that may serve the identified travel demand patterns.
3. Identify the relationship between DeSoto's public transportation needs and those of surrounding communities.
4. Assist City staff members in efforts to foster community understanding of current and future transportation issues and collect community consensus on how best to respond to those issues.
5. Determine the level of community support for public transportation that meets key community travel needs. Identify alternative service models that offer the potential to satisfy key travel demands.
6. If study efforts identify community support for public transportation and identify public transportation services consistent with that support, provide a near-term implementation plan for specific services.
7. Depending on the degree of community support, develop a long-range plan for public transportation services.

Existing Conditions of Transportation

DeSoto is oriented primarily for automobile travel, although it does have a growing network of trails and on-street bicycle paths. Major expressways connect DeSoto to the DFW Area, and are utilized heavily by residents for commute-trip purposes. The largest employment zone for DeSoto residents is Northwest Dallas County. Nearby DART service provides commuter-rail service to numerous important connections in the Dallas area, with the Red and Blue lines terminating within 10 miles of DeSoto. As the population of

DeSoto, and nationwide, ages (13% of DeSoto's population is over 65), there is an increased need for alternative transportation options.

Needs Assessment

During the Transit Needs Assessment Study, the consultant team and the City of DeSoto conducted extensive public outreach to better understand demographic and travel characteristics of the residents of DeSoto. During this process, eleven interviews were held with local community leaders, who provided important feedback about the transportation needs of DeSoto employees and residents. In addition to stakeholder interviews, an online, paper, and intercept survey was distributed community-wide. The survey asked about current commute habits, demographics, and personal opinion about different forms of transportation.

A total of 647 completed surveys were collected during the public outreach period. The results showed a lack of community consensus regarding the provision of public transportation in DeSoto. Overall, there was a fairly strong interest in public transportation among survey respondents, with most people supporting the concept. However, 101 persons, or 16%, said that public transportation is not needed.

While a majority of respondents reported that they have not used public transportation in the past year, a substantial number have utilized some form of transit recently. Most commonly, they either rode DART bus or light rail services. When asked which population groups are best served by public transportation, respondents most commonly identified elderly individuals who are not able to drive. The most popular destinations for transit service identified in the survey are communities served by DART.

Potential Services to Meet Community Needs

For regional commuters, with the exception of downtown Dallas, there does not appear to be a significant concentration of demand for travel destinations outside of DeSoto. The following were evaluated as possible strategies to serve regional public transportation needs:

- Extending DART service into DeSoto
- Provision of a rail feeder shuttle to DART stations
- Vanpool and carpool services
- Construction of a park-and-ride facility for express commuter service

The commute travel patterns within DeSoto also do not appear to be concentrated enough to support fixed-route public transportation services. The following list presents strategies to serve local transportation needs in DeSoto; these same strategies were also considered for local, non-commute trips (medial, school, religious, recreational and shopping):

- Community circulator service
- Deviated fixed-route service
- Dial-a-ride service
- Taxi subsidy program
- Volunteer driver program

The following two strategies were evaluated to serve the transportation needs of senior citizens and persons with disabilities:

- Volunteer driver and escort programs
- Coordinating social service agency transportation programs

During stakeholder interviews, transportation service for school-aged youth was not identified as a key concern. For travel related to college and university students, stakeholder groups indicated that shuttle services to connect with DART routes 415 and 553 might prove to be an effective initial strategy.

Recommended Phasing of Public Transportation Measures

Following an evaluation of the above mentioned transportation strategies in terms of cost, demand, popular acceptability, and funding, the Dikita team identified the following phases in which different services are feasible. Local and express bus services directly operated by the City of DeSoto were ruled out.

Phase 1 – Near Term Measures (2 years)

- Provide carpool matching assistance to DeSoto residents
- Provide vanpool matching assistance
- Initiate a taxi subsidy program
- Expand the volunteer driver program
- Begin coordination with DART

Phase 2 – Intermediate Term (3-8 years)

- Begin a startup shuttle service
- Construct a park-and-ride in DeSoto
- Expand the City's role in coordinating local transportation

Phase 3 – Longer Term (>8 years)

In this phase, services introduced earlier will be evaluated and enhanced if needed. Developing dense mixed-use nodes may improve the viability of fixed-route transit options.

Case Studies of Service Concepts Implemented in the Area

Each of the service concepts discussed earlier have been implemented in one or more contexts in the DFW area. For instance, carpool matching is facilitated through the "Try Parking It Program" of NCTCOG. Vanpool service is provided by each of the three major transit providers in the region – DART, The 'T', and DCTA. The City of DeSoto can actively encourage its residents and employees to participate in these shared ride programs.

Volunteer driver programs and taxi subsidies are provided in nearby cities, which could be used as a model to complement DeSoto's existing senior transportation service for medical and shopping trips. Subsidized taxi service for senior citizens is provided in the City of Plano. A volunteer driver program for

seniors operates in the Metrocrest cities. An expansion of service to the general public or for other trip purposes for seniors will require additional funding.

There are growing opportunities for DeSoto to coordinate transit services with DART through the purchase of contracted fixed-route service. In April of 2011, the DART Board approved a modification to its long-standing policy of prohibiting the agency from contracting with non-member cities for any service other than commuter rail. The revised policy now allows DART to contract with non-member cities for express bus service, in addition to the previously permitted commuter rail service. Soon after this change, several cities in the region, including Allen, McKinney, and Mesquite began discussions with DART on possible service contracts to link the respective cities to their nearest DART light rail stations.

Since non-member cities do not contribute any sales tax revenue to DART, contracted service is structured in such a way as to allow DART to recover all service costs, including direct operating costs, overhead, general and administrative expenses, and the local share of capital costs for the buses used in service. For FY12, the expected operating cost formula will be $33.92/hour plus $2.05/mile (or roughly $140,000 per year for one bus operating all day). In addition, all fares generated on the service will be kept by DART as "impact fees" associated with the impact of new connecting passengers on the rest of the DART network. Non-member cities may also need to make infrastructure investments such as bus stops signs, shelters, benches, trash receptacles, and parking facility upgrades to support the introduction of purchased transit service. Mesquite and Grand Prairie run shuttle services to provide local transportation. These services can serve as models for DeSoto should it want to initiate such services including a park-and-ride service. DeSoto can also work through the Community Transportation Network to coordinate multiple social service/non-profit organizations providing transportation services in DeSoto and other Best Southwest cities.

The City of Arlington is an example for providing several niche transportation services to its citizens through a creation of a separate entertainment district (AEAMD) or in coordination with other service providers and nonprofit organizations such as The T and American Red Cross, and the University of Texas at Arlington. The city also operates its own paratransit service.

Financing

In the era of shrinking government funding, it is essential that DeSoto explore creative ways to fund its transportation initiatives. Regardless of which specific funding sources are identified and pursued, development of good working relationships with DART, NCTCOG, TxDOT, and the Federal Transit Administration (FTA) will be necessary to ensure funding streams are uncontested and stable. Among the several possible funding sources, DeSoto has a good chance of receiving Section 5316-Job Access and Reverse Commute (JARC) funds provided the City works with TxDOT and NCTCOG, the nodal agencies for the distribution of Federal funds in the area.

DeSoto should also monitor changes in state law related to sales tax or registration tax that may allow a use of these funds for transportation services. Local property taxes can serve as a source of funds for special districts such as a Transportation Development District (TDD). Tax Increment Financing (TIF) and public private partnerships are some of the other options that DeSoto can explore.

Chapter 1. Introduction

As DeSoto continues to grow, so do concerns about the mobility of its citizens in the region's increasingly congested environment. In response, the City is considering the feasibility of providing public transportation options for travel within the city and to destinations in the greater Dallas-Fort Worth area. A variety of transportation alternatives including dial-a-ride, shared rides, and flex-route service are being considered.

Background

Currently, DeSoto has no public transportation service. When the Dallas Area Rapid Transit (DART) was established in 1983, the Best Southwest Cities, which are composed of Cedar Hill, Duncanville, DeSoto, and Lancaster, decided not to join the transit system. While all four communities have grown, both in terms of population and employment, they continue to be outside DART's boundaries. As a result, public transportation services in all four cities remains very limited.

This lack of service has created concern on the part of some DeSoto residents, who suggest that DeSoto is now ready for some form of public transportation. This technical memorandum is one step in the ongoing process to determine whether public transportation is warranted and, if so, what form it should take.

The first step in that process was a forum that the City hosted in January 2010. Residents commented on an array of unmet transportation needs, as well as concerns about the advisability of operating traditional transit services. Most significantly, some felt that public transportation entails unwelcome safety risks or is in conflict with the predominately suburban/rural character of the community. Others expressed the opinion that transit is a necessary public service.

To more fully investigate the issues involved, the City initiated this transit feasibility study, which began its review of public attitudes and potentials in the winter of 2011. Since then, a series of stakeholder interviews, community meetings and a public survey have been conducted.

Project Goals and Approach

- Identify current and likely future travel demand patterns in and around the City of DeSoto.
- Assess the potential for operating effective and efficient transit that may serve the identified travel demand patterns.
- Identify the relationship between DeSoto's public transportation needs and those of surrounding communities.
- Assist City staff in efforts to foster community understanding of current and future transportation issues and collect community consensus on how best to respond to those issues.
- Determine the level of community support for public transportation that meets key community travel needs. Identify alternative service models that offer the potential to satisfy key travel demands.
- If study efforts identify community support for public transportation and identify public transportation services consistent with that support, provide a near-term implementation plan for specific services.

- Depending on the degree of community support, develop a long-range plan for public transportation services available to DeSoto residents.

This report uses the information that collected through the study effort to assess the feasibility and merit of operating public transportation services in and around DeSoto. It does so by addressing five separate questions:

1. What level of need for public transportation exists within the city?
2. What is the current level of community support for public transportation in DeSoto? Is it considered a funding priority by local citizens?
3. What types of public transportation services will best satisfy community transportation needs?
4. Do these services have the potential to operate in a cost-effective manner?
5. Should DeSoto proceed with the development of a public transportation system? Which service models should be pursued?

Chapter 2. Existing Conditions

This chapter summarizes current trends that affect the city and its residents, as well as the current and projected future transportation movements into and out of the community. It is divided into five sections, which address the following:

- **Profile of DeSoto** – Population and demographics of the community, major attractors, details of the street network, forecasted growth, planned future development, and the City's plans for addressing this growth.
- **Profile of Best Southwest Cities** – Population and demographics, their linkages to DeSoto, and likely future developments.
- **Existing Transit Services** – DART rail and bus services that operate near DeSoto, planned improvements, and other public transportation services in the community.
- **Travel Demand Patterns** – Current and projected future travel demand, both commute and total trip making.
- **Summary of Previous Discussions About Transit** – Efforts that led to this study.

Profile of DeSoto

DeSoto is a growing community located to the southwest of downtown Dallas. One of the Dallas area's oldest cities, it has grown from a small farming town to a major residential community with a population of nearly 50,000 (49,047 US Census 2010). It is part of the Dallas-Fort Worth (DFW) Metroplex, which consists of twelve counties and over 200 cities and towns. The DFW Metroplex is home to 5.7 million people and covers 9,249 square miles.

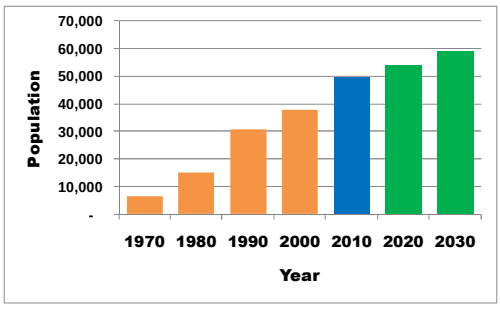
DeSoto grew rapidly throughout the decade of the 1990s, and that growth continued through the past ten years. While population and employment growth is expected to continue, it will likely slow during coming years. Table 1 and Figure 1 summarize projected population and employment trends within the community.

Table 1 Projected Population and Employment Growth in DeSoto

	2009	2019	2025	2030
Population	49,280	50,610	52,780	53,480
Households	17,770	18,480	19,350	19,580
Basic Employment	3,310	4,090	4,330	4,330
Retail Employment	6,330	7,300	7,580	7,580
Service Employment	12,960	14,470	14,820	14,830
Total Employment	22,600	25,860	26,730	26,740
Median Income (2009 constant $)	$ 58,705	$ 57,940	$ 60,965	$ 61,120

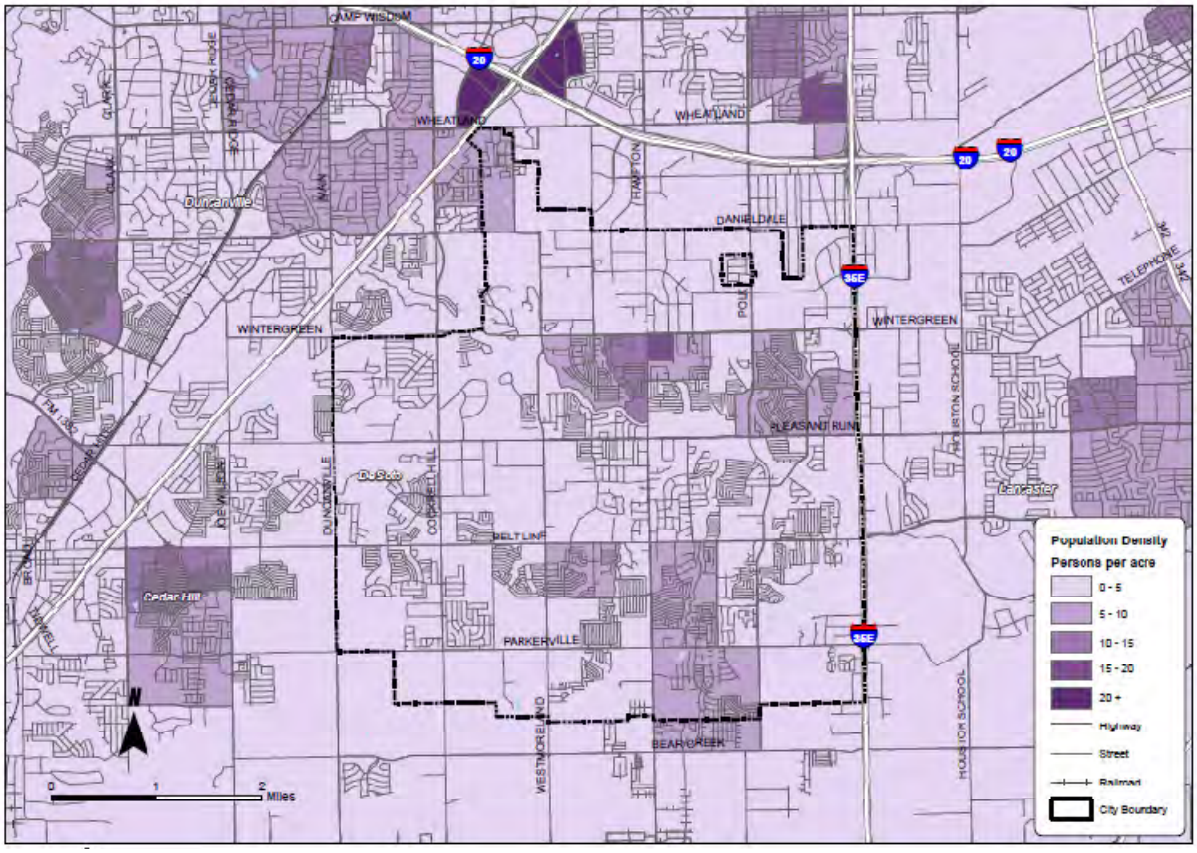
Source: NCTCOG

Figure 1 Population Growth since 1970



Population Density: As illustrated in Figure 2, DeSoto supports relatively low residential densities, typically less than ten persons per acre. The highest densities are along Hampton and Pleasant Run, where several multi-family units and smaller lot sizes led to higher density development.

Figure 2 DeSoto Population Densities



Source: NCTCOG GIS, US Census 2000

Age & Education: Over 60% of DeSoto's population is under 49 years old. However, the number of DeSoto residents over age 65 has been growing and now comprises nearly 11% of the population. Table 2 summarizes current age distributions within the community.

Table 2 Age Distribution of DeSoto's Population

Under Age 25	17,053 (34.8%)
25 to 49 years old	16,560 (33.8%)
50 to 64 years old	10,129 (20.6%)
Over 65	5,305 (10.8%)

Source: US Census Bureau 2010 Census

At the same time, nearly 89% of DeSoto's population has a high school degree and 38% have an associate's degree or higher.[1]

Employers: Table 3 summarizes DeSoto's major employers and the number of employees each has on its payroll.

Table 3 Major Employers in DeSoto

Employer	Number of Employees
DeSoto ISD Public Education	924
City of DeSoto City Government	367
DIAB Manufacturer	325
Solar Turbines, Inc. Manufacturer	300
Wal Mart Distribution Distributor	240
Williamsburg Village Healthcare	210
McGraw-Hill Publishing	155
Tom Thumb Grocery	150
Kroger Grocery	125
DW Distribution Inc. Distributor	124
Park Manor Nursing Home	124
ZEP Manufacturing Manufacturer	118
MCM Grande` Motel	102
The Cedars Mental Health Center	100
Fashion Glass & Mirror Manufacturer	86
U.S. Concrete Manufacturer	85
Texas Air Mfg Manufacturer	80

Source: See footnote 1

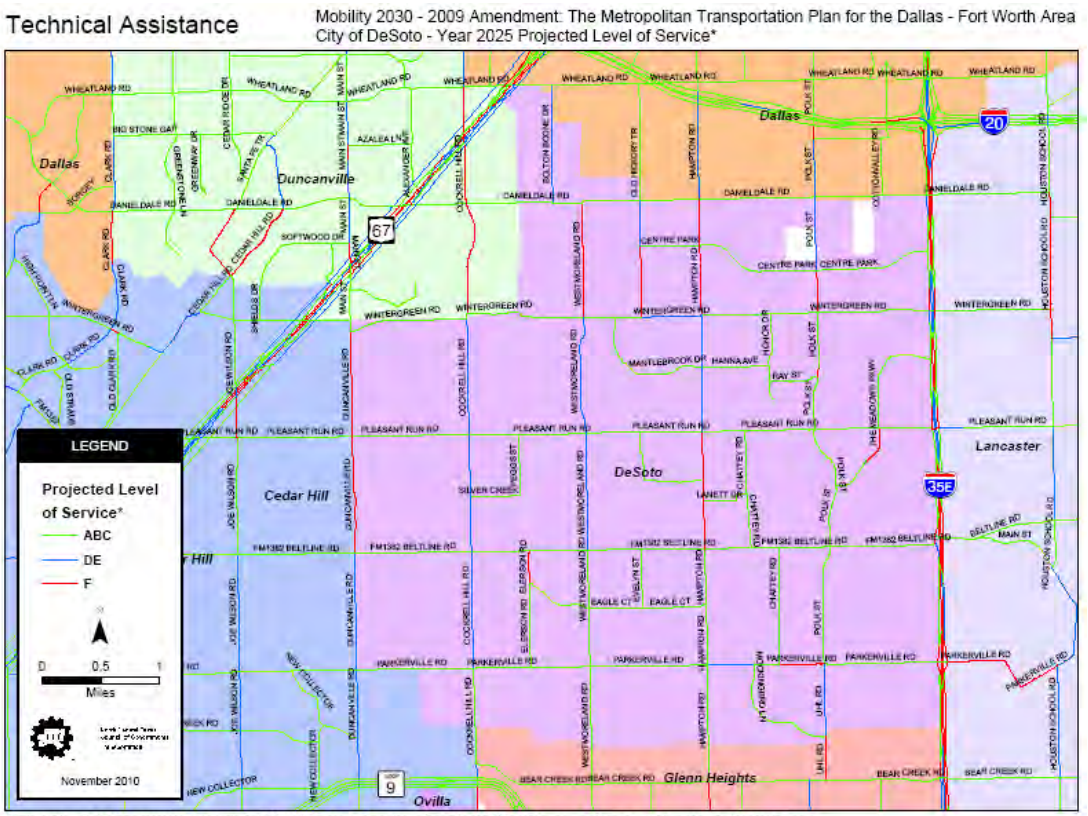
Highway Access: DeSoto is strategically positioned, with highway and Interstate connections within the DFW Metroplex. IH-20, located less than a mile north of DeSoto, provides direct access to Tyler and Shreveport to the east and Fort Worth to the west. IH-30, accessible via IH-20 & IH-635, provides direct access to Little Rock, Arkansas. DeSoto offers 4 miles of frontage along the west side of Interstate 35E (NAFTA). IH-35E extends southward to Austin and San Antonio and northward to Oklahoma City and

[1] Desoto, Texas Community Profile, DeSoto Economic Development Corporation, May 2009.

Kansas City. U.S. Highway 67 intersects DeSoto on the west at Wheatland Road and IH-35E to the north in Dallas.

City Street Congestion: Within the city, current traffic congestion is minimal. Most intersections operate at Level of Service 'C' or better.[2] With a few exceptions, this means that traffic congestion is not a significant issue in DeSoto today. Figure 3 illustrates the projected amounts of congestion that are anticipated in 2025, given the current street infrastructure and currently funded projects. While east-west streets will continue to operate well, many north-south arterials will experience significant congestion. Where the lines are red, motorists may be required to wait several signal cycles in order to pass through an intersection. At these levels of congestion, travel times begin to grow significantly longer.

Figure 3 Projected 2025 Congestion in DeSoto



Source: NCTCOG

*Projected Level of Service represents the projected AM peak hour level of service or the projected PM peak hour level of service, which ever level of service is worse.

Highway Congestion: Congestion-related delay on the region's highways is currently an issue that is expected to grow worse in coming years. Figure 4 illustrates current congestion, which is most heavily

[2] Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. At level of Service C most experienced drivers are comfortable, roads remain safely below but efficiently close to capacity, and posted speed is maintained. Commonly, jurisdictions attempt to maintain local streets at LOS D or better. This is somewhat more congestion than is experienced as LOS C.

focused in areas to the north of downtown Dallas. This does not mean that DeSoto residents do not face highway congestion today. However, it is a much more significant issue in other parts of the region.

Figure 4 2009 Levels of Congestion

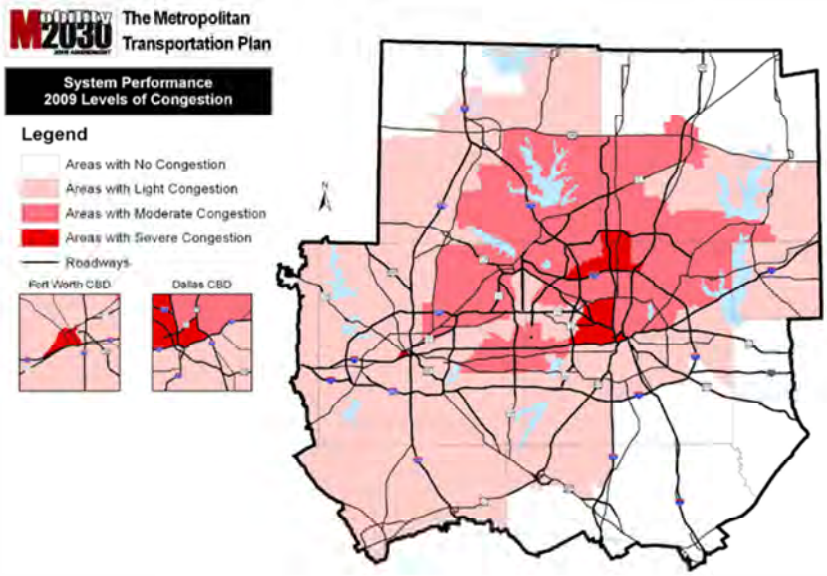


Figure 5 illustrates congestion that is projected to occur if all the projects included in the region's Metropolitan Transportation Plan are completed. The cost of these projects totals $148 billion, of which about one-third is not funded.[3] Only minimal levels of congestion are forecast in the Best Southwest region.

[3] NCTCOG, Transportation 2009 State of the Region Report.

Figure 5 Congestion After Implementation of the Regional Transportation Plan

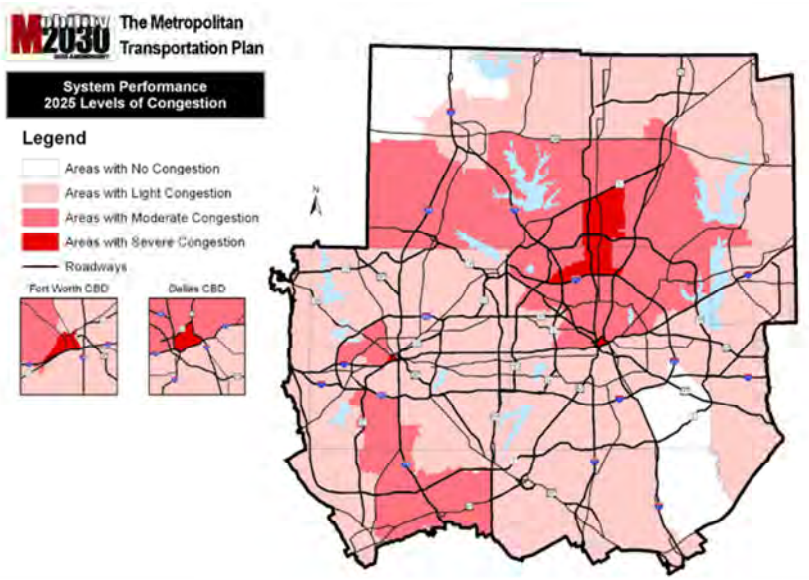
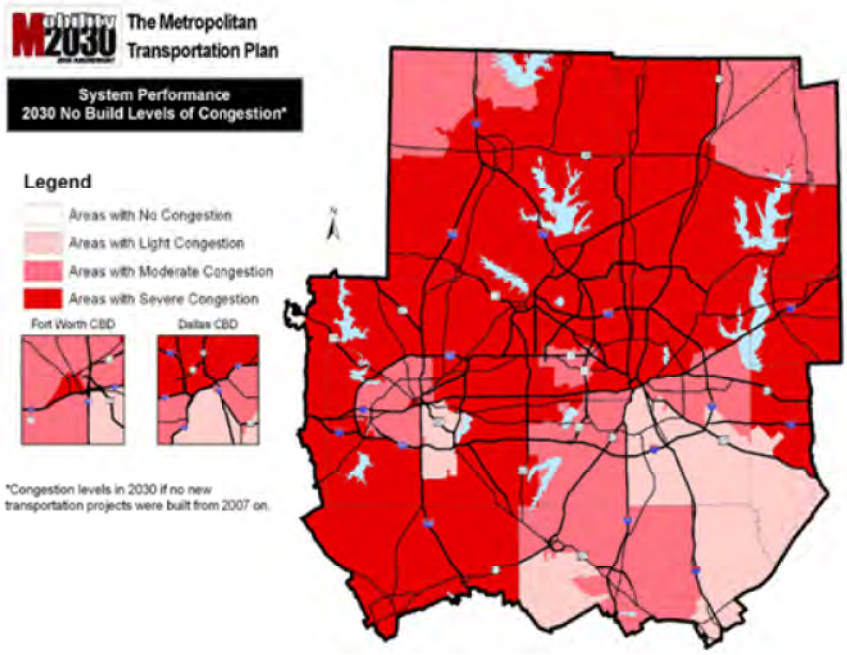


Figure 6 illustrates the type of congestion that would occur if none of the projects included in the Metropolitan Transportation Plan are completed. Congestion would become a regional issue. While the Best Southwest cities would not experience the same levels of congestion as other parts of the region, travel to other parts of the region would become increasingly challenging.

Figure 6 No Build Levels of Congestion



Closely related to congestion are the air quality issues that the Dallas-Fort Worth region faces. While air quality has consistently improved throughout the past decade, the region has not yet achieved its goal of

achieving air quality that is equal to or better than what the region experienced in 1980. Figure 7 illustrates this trend.

Figure 7 Air Quality Trend 2000-2010

Source: Transportation 2009 State of the Region ,NCTCOG

DeSoto's Comprehensive Plan

DeSoto adopted its current Comprehensive Plan in 2006. Previous plans had focused on the achievement of specific objectives, which were largely reached by the community. This section draws excerpts from the Plan to highlight the ways that transportation interacts with other community objectives and how public transportation may be a part of DeSoto's larger goals in the future.

DeSoto's Transportation Goal: DeSoto's goal is to "provide for the safe and efficient movement of goods and people to, from and within DeSoto to address the current and forecasted future transportation needs of citizens and businesses to benefit the economy and quality of life of DeSoto."[4] There are no objectives directly related to transit, however this goal applies to broadly-defined mobility, which could include meeting the demand for transit services.

Arterial Streets: The transportation section of the plan focuses largely on thoroughfares. The Plan acknowledges a serious concern with commute-related congestion. The main east-west arterials, Pleasant Run Road, Belt Line Road, and Hampton Road (north-south) receive significant traffic volumes per day. Hampton Road and Pleasant Run Road are the location of the town center, and traffic volumes around this intersection range from 16,000 to 7,000 vehicles per day. Hampton Road sees around 23,000 vehicles per day at the intersection with IH-20. An NCTCOG traffic forecasting study for 2025 projected increases of vehicle traffic on DeSoto's primary arterials. The greatest increases are along Belt Line Road (double the traffic volume from present day), and Hampton Road. Danieldale Road, the northernmost east-west arterial in the city, is also projected to see a doubling of traffic volume by 2025. These increases are based on future land use projections of a nearly "built-out" DeSoto. The Plan addresses these increases with a comparison of road capacity, current road width, and the potential need to widen roads. However, there has been some resistance to the original 1990 Thoroughfare Plan, which called for a one-mile grid of 6

[4] DeSoto 2006 Comprehensive Plan, p. 3-2.

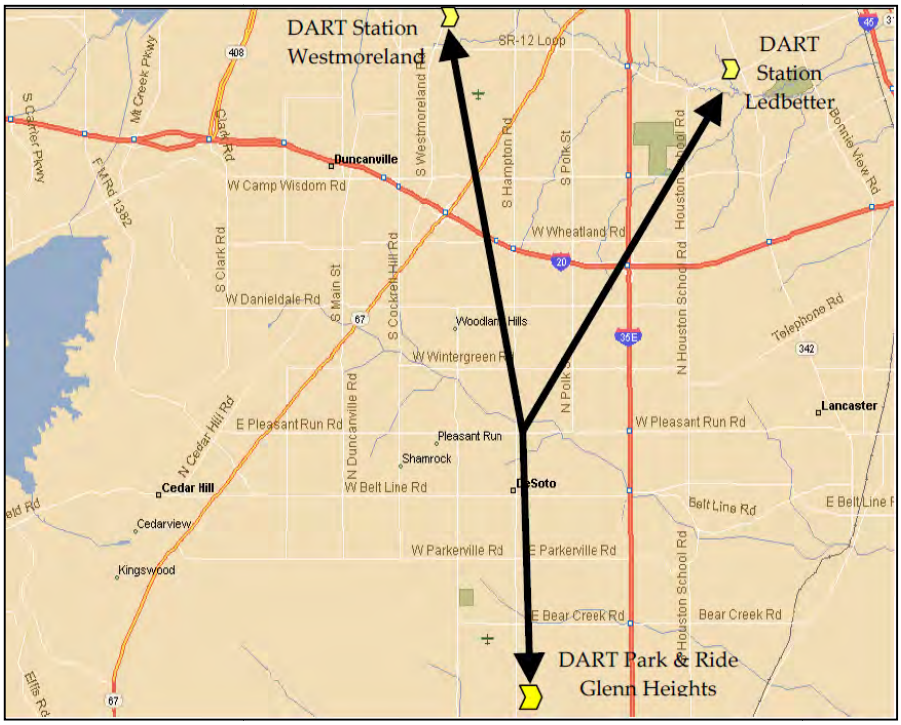
lane roadways. Citizens and planners have suggested that they would like to retain the rural character of some of these roads, and consider widening based on future land use and traffic projections. DeSoto is utilizing Context Sensitive Design in planning for transportation in the community. This method incorporates all stakeholders at an early stage in the planning process, and allows for full evaluation of alternatives.

It is common for the City to acquire 120 ft right of way when building new roads, and develop only 4 lanes, with potential to increase to 6 lanes when or if it is needed. This additional space could be utilized for bus-only lanes, or parking with bump outs to improve efficiency and pedestrian access to public transit.

Transit: The Plan states that the City does not participate in DART (Dallas Area Rapid Transit), but acknowledges that there are four stations nearby: the Red Line at Westmoreland Road Station in Dallas just north of Duncanville, the Red Line at Hampton Road Station, the Blue Line at the Ledbetter Station in Dallas just north of Lancaster, and a park-and-ride lot located on Bear Creek just west of IH-35 in Glenn Heights. The plan goes on to note that "some residents have expressed the opinion that public transportation is important to the citizens of DeSoto."[5]

The City does not pay for or receive any transit service, but benefits from DART stations adjacent to the city. The plan notes that two terminus light rail stations are 5 to 7 miles north of the city, and one park and ride facility is just to the south of the city. Figure 8 shows nearby DART stations to the city.

Figure 8 Nearby DART stations



[5] DeSoto 2006 Comprehensive Plan, p. 6-8 and 6-9.

Town Center: The Comprehensive Plan places great importance on developing the town center as a cohesive, welcoming pedestrian environment. It is situated at the intersection of Hampton Road and Pleasant Run, adjacent to the Ten Mile Creek. This is the geographical center of DeSoto and is a key transportation intersection for the city. There are many design details in an urban design study related to the Town Center in the 2003 Streetscape Guidelines document. A second key development and beautification project for DeSoto is the intersection of IH-35 and Pleasant Run Road. The plan calls for development of an entry portal for the city. It suggests that Pleasant Run Road between Hampton Road and IH-35 should also be considered carefully. The intersection with the walking trail has the potential to bring residents from adjacent neighborhoods onto Pleasant Run Road for connection to transit. Figure 9 below illustrates how the Town Center may relate to the entry portal.

Figure 9 Pleasant Run Design Concept

DeSoto plans to coordinate with the City of Cedar Hill to encourage the development of Duncanville Road to provide four lanes to relieve traffic loading on Cockrell Hill Road and for the continuation of Parkerville Road into Cedar Hill.

There is no mention of public transit in the 2003 Streetscape Guidelines document or the Subdivision and Development Ordinance.

Hampton Road Corridor Redevelopment Plan

As the most significant north-south arterial street in DeSoto, Hampton Road will likely play an important role in any future transit system. The Hampton Road Corridor Redevelopment Plan, which was released in 2005, was intended to articulate a vision for the Hampton Road corridor from approximately Belt Line Road on the south to Ten Mile Creek on the north. It offered both near and long-term recommendations on the future use and development of the Corridor.

Over the twenty years from 1980 to 2000, retail activity moved from this central portion of Hampton Road towards the highway (IH-35E) and into neighboring communities. With this exodus from the core of the community, the Hampton Road Corridor became less of a destination and more of a thoroughfare for car travel to Dallas. Hampton Road's primary objective was to move cars quickly. The result was a degraded public realm and an area hostile to pedestrians. The Hampton Road Corridor Redevelopment Plan was designed to explain these and other factors which have led to the condition of the study area today. Further, it was intended to identify those assets which can be built on to recreate the corridor in the community and region.

The study considered the corridor in the context of a broader influence, or trade area (see Figure 10, the "trade area" is shown in light red, medium red indicates Desoto city limits, dark red is the corridor development area). The study showed the region offers unique opportunities for the Hampton Road corridor. Given strategic public and private reinvestment and supportive policies, there is market demand for Hampton Road to redevelop.

Figure 10 Area of Influence for the Hampton Road Corridor

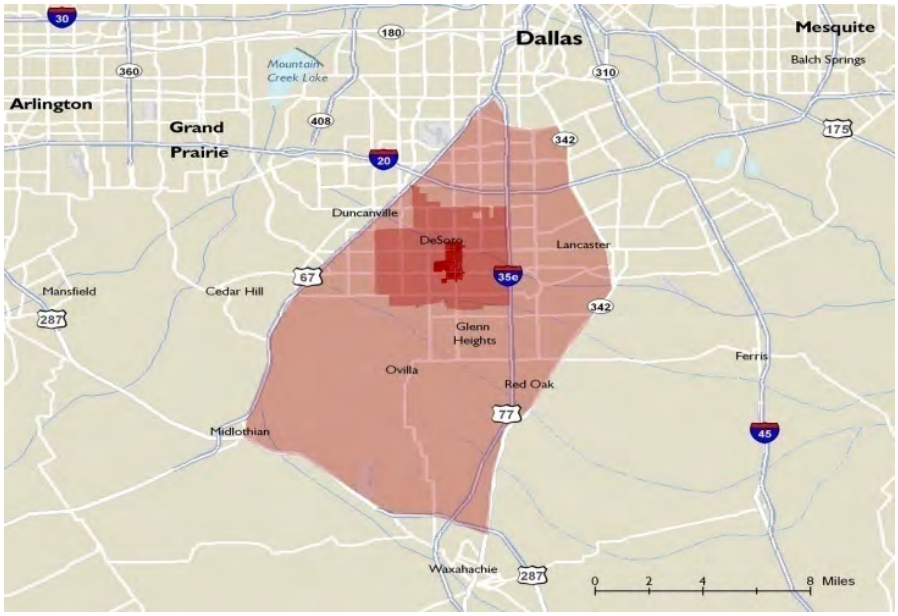


Table 4 Development Potential for the Hampton Road Corridor

Land Uses	Potential for Development: Short-Term (1 to 5 Years)	Potential for Development: Mid-Term (5 to 10 Years)
Retail		
Specialty Retail ***(*)***		X
Entertainment Retail ***(*)***		X
Neighborhood-Serving ***(*)***	X	
Community/Regional ***(*)***	X	
Office/Industrial		
Corporate Campus ***(*)***		X
Class B Mid-Rise ***(*)***		X
Local Service/Professional ***(*)***	X	
Office/Industrial "Flex" ***(*)***	X	
Housing		
Single Family Detached ***(*)***	X	
Rental Apartments ***(*)***	X	
Rowhouse/Townhouse ***(*)***	X	
Condominiums ***(*)***	X	
Live/Work Lofts ***(*)***		X
Senior Housing ***(*)***	X	

(*) Indicates land uses appropriate for Corridor revitalization.

Among its findings, the study suggested that:

- Opportunities exist for additional residential density (attached ownership units – condos / townhomes / rowhouses);
- Creation of a "place" will stimulate new and interesting retail environments and attract new businesses;
- There exists an under-served market for attached ownership units (condos / townhomes / rowhouses) and luxury rental units;
- "Premiums" associated with a quality mixed-use environment could command premiums 10% to 20% above the market;
- Possibility exists to incorporate "live / work" units into residential products – addressing growing "lone eagle" or semi-retired markets;
- Aesthetics of well-done mixed-use environment will attract employers and entrepreneurs seeking new and interesting work environments; and
- On-site support retail and structured parking may allow for premiums in office rents.
- The Hampton Road Corridor could generate new demand for more than 1.5 million square feet of commercial space, approximately 350,000 square feet of office space, and nearly 23,000 residential units as summarized in Table 4.

Of import to this effort, the study concluded that:

> The degree to which the corridor is able to capture new demand within the trade area (and beyond) will be a function of the redevelopment process itself. Given the highly competitive nature of new development, and the heightened challenges of developing in an urban infill environment, successful redevelopment of the Hampton Road Corridor study area will depend on defining a "place" in the minds of the region's residents. Redeveloping key catalyst areas as retail, residential, employment and community destinations will necessarily increase its ability to capture not only a greater share of its trade area demand, but also to reach beyond those boundaries. As redevelopment begins to take hold and land prices begin to rise, physical limitations which currently restrict the scale of redevelopment opportunities will lessen as low FAR (Floor Area Ratio) uses succumb to market forces and land owners begin to seek the highest and best use for an increasingly valuable asset. This evolution will obviously be expedited if assisted by a favorable regulatory environment which encourages a denser product model, tighter building form, balanced parking requirements, and stronger connections.[6]

The study report identified three 'Catalyst Projects,' which will facilitate this sort of development.

Catalyst Project 1: The first catalyst project is titled "Town Square." It is located at the corner of Hampton Road and Pleasant Run Road. The City Hall complex is currently situated in a conventional strip-center retail format, with a field of surface parking out front. The intent of this concept is to capitalize on dominant land uses and redevelop the parking lot into a combined use of retail, neighborhood services,

[6] Hampton Road Corridor Redevelopment Plan, December 2005, p. 10.

and diverse housing organized around a new integrated public town square and clock tower, with the parking for the complex contained in a three-story garage on the interior.

Catalyst Project 2: The second project, deemed the "Central Park" concept, is essentially at the midpoint between the intersections of Pleasant Run and Belt Line Roads on the Corridor. It involves using existing open space in the area of Heath Creek and Spinner Road for a public park and surrounding it with townhomes. The concept spans Hampton Road with live-work townhomes facing the Corridor with a transition of townhomes and single-family units providing a transition into existing neighborhoods.

Catalyst Project 3: The third plan, entitled "Belt Line Village" is located at the southernmost intersection of Hampton and Belt Line Roads. This corner has historic significance as the area where the first residents of DeSoto settled. This concept assembles under-performing properties, including the land vacated by the City when City Hall was relocated to its present location. The plan maintains the existing fire station and ties into the amenities of the nearby floodplain with a series of restaurants, retail, neighborhood services, and a diversity of housing types.

The study concluded that revitalization of the Hampton Road Corridor will depend on actions that capitalize on market opportunities and overcome barriers. It identified a series of guiding principles that were intended to focus this effort.

Guiding Principles

1 Public-Private Partnerships
2 Advocacy Organization Participation
3 Holistic Approach to Economic Development
4 Programs, Policies and Projects (Action Plan)
5 Economic Diversification and Sustainability
6 Higher Standards With Off-Setting Incentives
7 Prioritized and Phased Improvements (Infrastructure)
8 Active Marketing and Promotion
9 Acquisition, Positioning and Disposition of Properties
10 Open and Community Space Planning
11 Regulatory Flexibility
12 Financial Creativity

The study concludes with words of advice to the city:

> Together, the public and private sector face the challenge of revitalizing the Hampton Road Corridor. Its competitive position will continue to be eroded unless there is a significant repositioning of its role in the market, restructuring of its physical layout, recognition of the economic challenges inherent in infill and corridor redevelopment, and aggressive recruitment of niche opportunities.[7]

[7] Hampton Road Corridor Redevelopment Plan, December 2005, p. 17.

Profile of the Best Southwest Cities

The four cities that, along with the Oak Cliff neighborhoods in Dallas, make up the Best Southwest alliance have a long history of cooperating to resolve mutual problems. In many ways, their transportation facilities and land use patterns complement each other, and decisions reached by one jurisdiction often have far-reaching impacts for the others.

This chapter briefly summarizes the demographic, land use, and transportation characteristics of the cities and considers how their longer range plans may impact DeSoto's transportation infrastructure.

Overview of the Best Southwest Region

Table 5 summarizes several key demographic indicators for the four Best Southwest cities.

Table 5 Demographic Summary of Best Southwest Cities

	DeSoto	Cedar Hill	Duncanville	Lancaster
Population (2008 Estimate)	45,257	43,552	37,498	31,433
Jobs (2008)	10,112	9,529	9,576	7,844
Total Area (Square Miles)	21	35	11	29
Density (Population per Square Mile)	2,155	1,244	3,409	1,084
Age of Residents				
Under 25	14,484 (32%)	17,672 (41%)	12,843 (34%)	12,064 (38%)
25-44	11,672 (26%)	13,519 (31%)	10,385 (28%)	9,591 (31%)
45-64	13,017 (29%)	9,615 (22%)	9,922 (26%)	7,574 (24%)
Over 65	6,084 (13%)	2,746 (6%)	4,348 (12%)	2,204 (7%)
Median Annual Household Income (2008)	$57,971	$64,629	$50,325	$50,389

Source: U.S. Census Bureau American Community Survey 2008, QuickFacts, Longitudinal Employer-Household Dynamics

Cedar Hill

Local Transit: A key principle of the Cedar Hill Comprehensive Plan is to encourage smart growth techniques such as transit-oriented development (TOD). The plan mentions development of a multi-modal transportation network to facilitate TOD and improve mobility[8]. In a visioning exercise, the Comprehensive Plan Steering Committee of Cedar Hill highly ranked TOD that included both rail stops and adjacent commercial and residential development. During an open discussion, existing rail line was noted as a strength of the city, whereas lack of mass transit was cited as a weakness.

> "The success of TOD development can, to a certain degree, be tied to the ability of area residents to be able to access other aspects of the community. While TOD development is envisioned to provide an array of services within walkable distances of one-quarter to one-half mile from the station,

[8] Cedar Hill Comprehensive Plan, p. 3-1.

there should be the opportunity for connectivity with other area attractions. The Trail Master Plan and Greenway Corridors create options for pedestrian/bicycle modes. Another long-term consideration should be some type of localized transit. While not a short-range recommendation, some type of transit service should be considered either prior to, or following, the establishment of regional rail. No specific technology is envisioned, other than it should be unique so that business is attracted and it promotes Cedar Hill as a distinctive city in the area. A wheeled trolley system or buses designed to resemble trolleys could be an effective way to achieve this uniqueness, and trolley-like facilities could further enhance the sense of history that is present in downtown Cedar Hill."

Regionally, the City would like to see increased accessibility to Dallas and between the other suburbs. The potential Corridor E-5 DART stops in the Cedar Hill CBD (Old Town) and Lake Ridge Parkway/Future Bear Creek Rd east of US 67 (see page 17 for additional detail). Traffic volume is significant around US 67, FH-1382 and Belt Line Road E. Belt Line Road E is the main connection between Cedar Hill and DeSoto. There is also a cluster of accident locations around this interchange, where high volumes of traffic pass daily. Cedar Hill is very interested in utilizing Context Sensitive Design to incorporate multi-modal transportation options into thoroughfare panning. The plan mostly focuses on pedestrian-oriented development and its potential to be supported through future potential rail stops in the city.

A key goal of the Transportation Plan is to work with adjacent cities to ensure coordination for thoroughfare plans and funding for regional rail. Cedar Hill is also interested in incorporating alternative transportation, particularly commuter rail, through the city and bus or tram service for the city center. Parkerville Road is an important connection between Cedar Hill and DeSoto, and the Cedar Hill plan recommends downgrade from "principal" to "minor" arterial. Travel forecast volumes suggest a 4-lane roadway will provide sufficient capacity to accommodate projected demands. This coupled with the ability to widen intersections for additional turn lanes, as necessary, should be adequate for long-term conditions. Other items leading to this recommendation include: the upgrade of Bear Creek Road to "principal" arterial, the designation of Parkerville Road as a 4-lane "minor" arterial through DeSoto, the residential composition of the corridor, and the fact that minimal opportunity exists to widen Parkerville Road beyond its current 4-lane configuration between S. Clark and US 67[9].

Duncanville

Duncanville has the smallest land area of the Best Southwest Cities, and is located very close to the Red Line and Westmoreland Station. The city is home to Duncanville High School, the largest high school in Texas, with over 4,000 students. The Duncanville Independent School District serves part of DeSoto and Cedar Hill. Downtown Duncanville is a zoning designation along South Main Street south of I-20, particularly at the intersection with Wheatland Rd. This area is served by local and rail feeder bus routes. DeSoto residents are able to take advantage of this transit service, as well as the park-and-ride just south of the city in Glenn Heights.

Lancaster

Lancaster is located directly east of DeSoto and is near the terminus of the DART Blue Line at Ledbetter Station. A rail feeder bus route serves central Lancaster and the Cedar Valley College. In the 2002

[9] Cedar Hill Comprehensive Plan, p. 3-41.

Comprehensive Plan, lack of a transportation system is cited as a key issue facing Lancaster. Similar to Cedar Hill, Lancaster is facing congestion and alignment issues along IH-20 and the Loop 9 alignment.

The city has a historic town square that it would like to preserve and manage future growth within. Included in the plan is a special zoning district intended to attract businesses and consumers to the area.

An objective of the transportation plan is to "support regional and inter-city transportation needs and initiatives, and encourage cooperation among various entities (e.g., neighboring cities, etc.) in addressing transportation-related issues and problems"[10]. The Plan shows intent to apply for grants for transit-related services such as trolleys, and support for mass transit facilities to decrease dependency on the automobile. There are no further details regarding transit development in the plan.

Public facilities objective: "Continue developing a system of easily accessible, highly visible libraries that are located to serve the ultimate population of Lancaster"[11]. The future land use plan details desired elements that closely resemble pedestrian-scale transit-oriented development. Lancaster encourages this development around the Historic Town Square.

Pleasant Run Road, which extends east from DeSoto to Lancaster is a major focus of retail development for Lancaster, and experiences peak hour congestion. However, the worst areas of congestion in the city as identified by the Comprehensive Plan are Houston School Road N, a north-south arterial, IH-35, and IH-20. Houston School Road N is the only through road that carries north-south traffic for the city. The City would like to extend a parallel street, Bluegrove Street, to improve the street grid and reduce traffic congestion.

Trails and paths for non-motorized travel are strongly encouraged in Lancaster, as well as the other Best Southwest cities. Based upon the Parks, Recreation and Open Space Master Plan, Lancaster would like to develop a network of trails and paths for non-motorized, multi-modal transportation.

Planned Rail Services

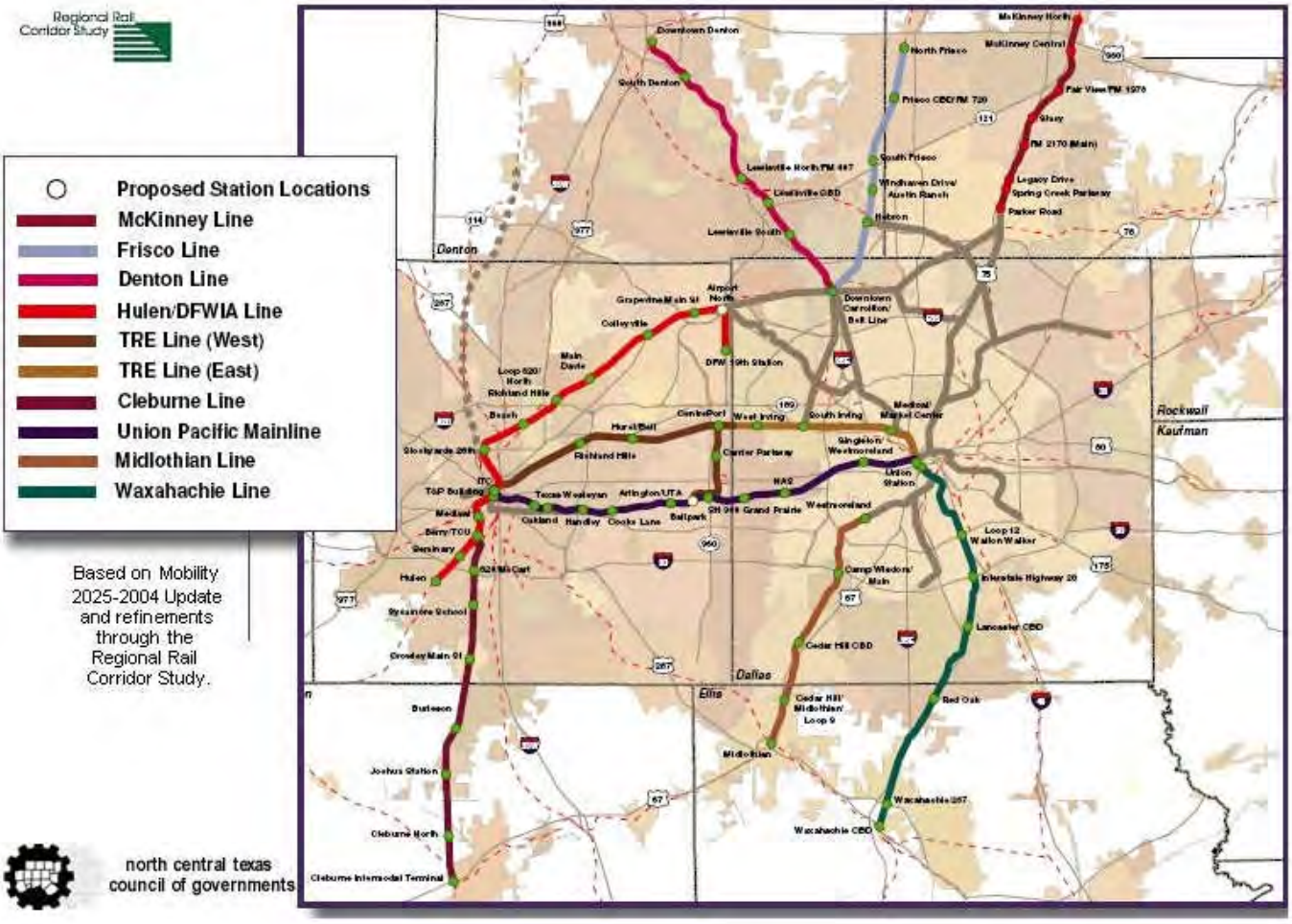
The NCTCOG Regional Rail Corridor Study examined the expandability of the current rail system (generally operated by DART) to meet the future anticipated travel demand in the Metroplex. The study revealed that based on the amount of projected ridership, a connected regional rail system could have the effect of adding on additional freeway lane in each direction to some of the most congested highways and tollways in North Central Texas.

Figure 11 illustrates the general alignments of the eight rail lines that were included in the NTCOG study. Two of these routes would have the potential to heavily impact DeSoto. Corridor E-5, the "Midlothian Line" is located to the west of DeSoto, operating through Duncanville and Cedar Hill. Corridor E6, the "Waxahachie Line" travels through Lancaster.

[10] Lancaster Comprehensive Plan, p. 3-12.

[11] Lancaster Comprehensive Plan, p. 3-15.

Figure 11 Proposed Dallas Area Rail Services

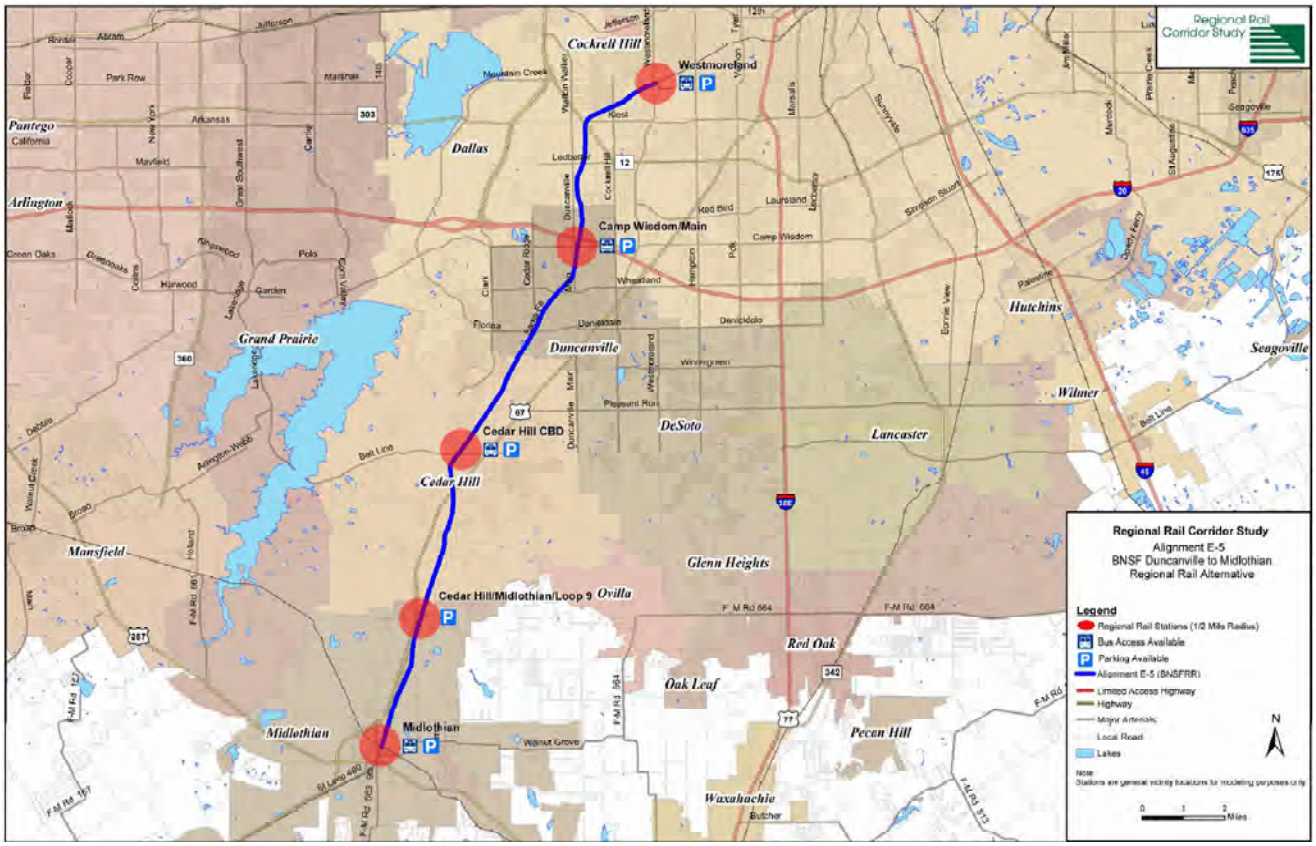


Corridor E-5 – Midlothian Line: Corridor E-5 is a Burlington Northern and Santa Fe Railway (BNSF) line that extends from Midlothian north to the DART light rail station at Westmoreland Road in Dallas, a distance of approximately 18.8 route miles. BNSF owns all of the right-of-way along the E-5 Corridor. DART has LRT operating rights between the Westmoreland Station and Duncanville. The right-of-way is typically 100 feet in width. The current maximum operating speed limit is 20 mph. The line is not equipped with a railroad signal system and is operated under Track Warrant Control (TWC) rules. Approximately four local freight trains operate over the line each day.

This route would be an extension of DART's Red Line. Three station locations were identified within the Best Southwest communities; Two in Cedar Hill, one south of W. Belt Line (Uptown area), and one south of the future Bear Creek Road alignment (shown in Figure 12). The city's Comprehensive Plan views both as tremendous opportunities for development and redevelopment initiatives within the city. There is a prime opportunity for TOD at Bear Creek Road, which has a mix of undeveloped land, planned integration with other corridor development initiatives, and immediate proximity to US 67/Loop 9.. Park-and-ride

connectivity could also potentially be supported by using the interior area of the Loop 9/US 67 interchange as parking. With other area development initiatives, the Uptown area offers neighborhood walkability and historic value in the heart of downtown. In anticipation that passenger rail service will ultimately operate in this corridor, Cedar Hill has included provision for transit-oriented developments in the vicinity of the proposed stations. The project has been divided into two elements within the COG's planning documents. Total cost would be $963 million. Neither project element is funded.[12]

Figure 12 Corridor E-5 - Midlothian



Corridor E-6 – Waxahachie Line: Corridor E-6 is a Burlington Northern and Santa Fe Railway (BNSF) line that extends between Dallas and Waxahachie, a distance of approximately 30.7 route miles, as illustrated in Figure 12. Between Union Station and Forest Avenue, the Union Pacific Railroad owns and dispatches the track. Union Pacific also has trackage rights to serve local industries. The right-of-way is typically 100 feet in width. The current maximum operating speed limit is 40 mph for freight trains. The line is equipped with Automatic Block Signals (ABS) and is operated under Track Warrant Control (TWC) rules. A bridge and equipment weight restriction of a maximum gross weight per car of 143 tons is in effect over the corridor. Approximately four BNSF freight trains and two UP local trains operate over the line each day.

[12] NCTCOG "Mobility 2030" 2009 Amendment, p. 254.

The Regional Rail Alternative would provide regional rail passenger service along the BNSF rail line between downtown Dallas and Waxahachie. Passing tracks would be required at stations and other convenient locations. Train control and signal systems would be upgraded. Highway/railroad at-grade crossings with minimal crossing protection but high volumes of automotive traffic will have to be improved with the installation of warning devices such as lights, bells, and gates. Six regional rail passenger stations would be constructed along the E-6 Corridor, as shown in Figure 13. It also identifies the local bus services and park-and-ride assumptions that were included in the project research. Note that local bus service was assumed in Lancaster. The final locations of new stations would need to be determined with consideration for the UP freight traffic. Estimated capital costs for this project total $1.064 billion.[13] It is not funded.

Table 6 Regional Rail Assumptions – Waxahachie Line

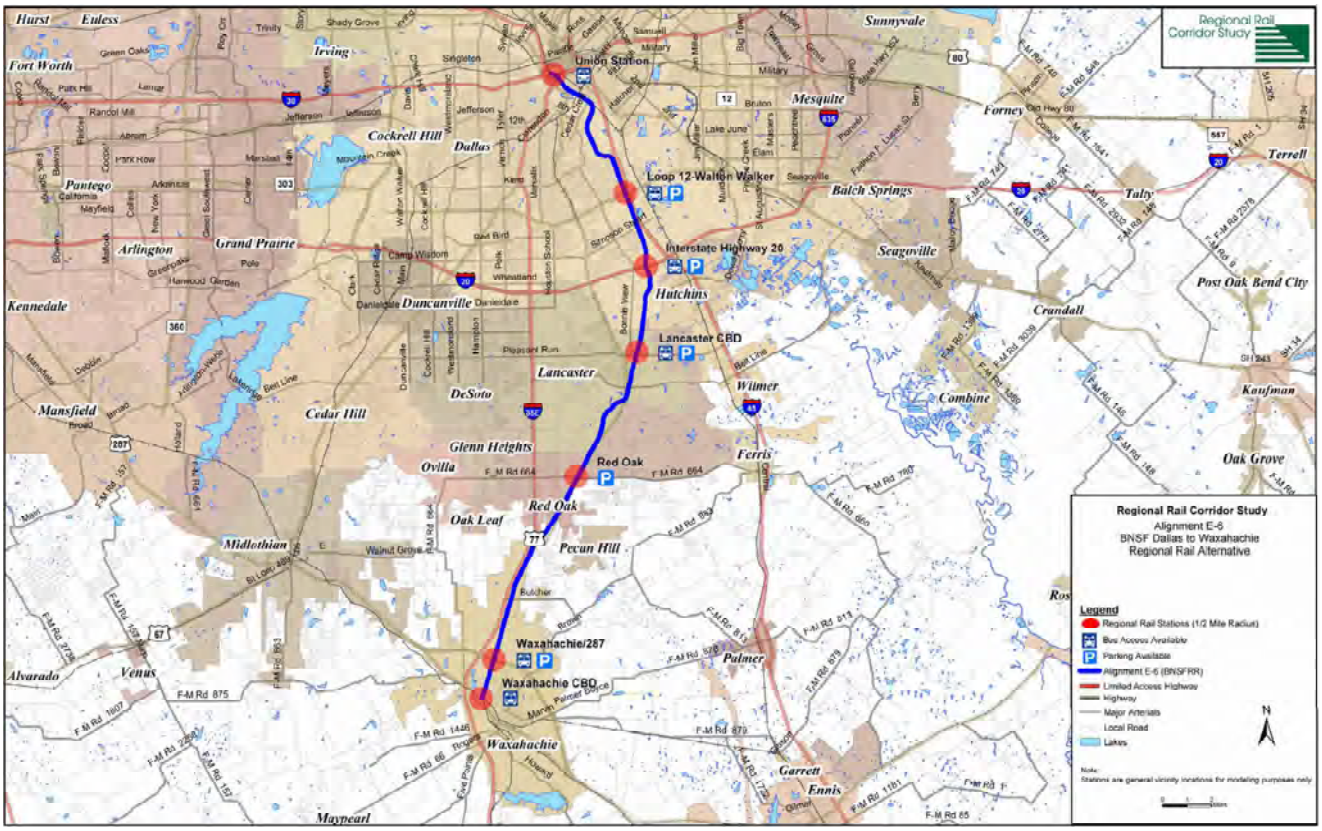
Regional Rail (headways = 20 minutes/60 minutes)

Stations	Local Bus	Park-and-Ride
Waxahachie CBD	Yes	No
Waxahachie/287	Yes	Yes
Red Oak	No	Yes
Lancaster CBD	Yes	Yes
Interstate Highway 20	Yes	Yes
Loop 12/Walton Walker	Yes	Yes
Union Station	Yes	No

* Station locations, feeder bus and park-and-ride designations are all approximate and would be refined in later phases of study.

[13] NCTCOG "Mobility 2030" 2009 Amendment, p. 225.

Figure 13 Corridor E-6 – Waxahachie



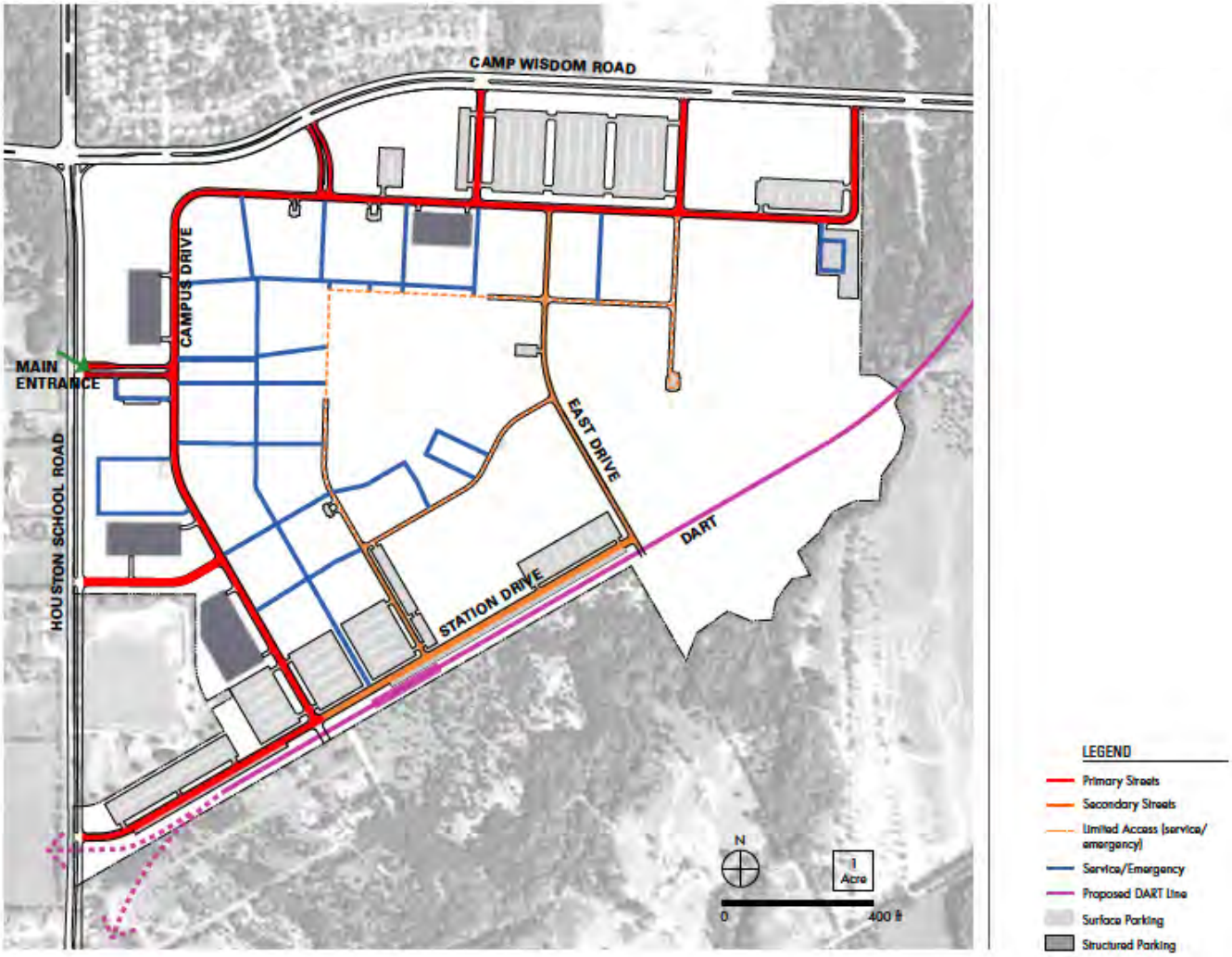
University of North Texas- Dallas Campus

The University of North Texas plans to expand a Dallas Campus in the southern region of Dallas metro area. The target enrollment is 25,000 students, according to the 2005 Campus Master Plan. The vision is to serve as a catalyst for the southern Dallas region, as well as integrate with future land use plans to provide a more enriching environment for students. The 266-acre campus is located at the intersection of Houston School Road and Camp Wisdom Road. This is within 3 miles of the northeast section of DeSoto, and will share the freeway interchange of I-35E and I-20 with DeSoto (see Figure 14).

The UNT at Dallas' transportation strategy includes coordination with DART light rail and bus services. DART will extend the Ledbetter Line and locate a new light rail station on the campus, which will include a 10-acre set aside for parking. At full build out, the campus expects to need 7,700 parking spaces.

The DART line will pass along the southern edge of the campus, closer to Wheatland Road. As it is currently drawn on the map, the DART line will continue down Housing School Road N into Lancaster and adjacent to DeSoto. There will also be DART bus stops located along Campus Drive, and the University will have the option of providing bus stops for campus-sponsored transit services. This could potentially include circulators to take students to nearby commercial and retail centers, or to serve by bus faculty, staff, and students living in the vicinity.

Figure 14 Planned UNT Campus



Linkages with DeSoto

Best Southwest Cities: Because of their east-west orientation, five arterial streets connect DeSoto with its Best Southwest partners. They are listed from north to south:

- Wheatland barely touches DeSoto's northern boundary but serves as a major travel corridor, connecting DeSoto with Duncanville, North Lancaster, and Oak Cliff.
- Danieldale plays a major transportation role in Duncanville but currently is less significant in DeSoto and Lancaster.
- Wintergreen is a secondary arterial serving parts of Cedar Hill, Duncanville, DeSoto, and Lancaster.

- Pleasant Run bisects DeSoto, connecting it with Cedar Hill and Lancaster. Parts of Pleasant Run east of Westmoreland have been considered for widening to four lanes.
- Belt Line complements Pleasant Run as a major east-west street connecting DeSoto with both Cedar Hill and Lancaster. Significant retail development has occurred along Belt Line, especially in Cedar Hill, while a Wal-Mart store is located near Beltline at I-35E in Lancaster.

In addition to these connection to the Best Southwest cities, Hampton Road, Westmoreland, and Cockrell Hill Road all link DeSoto with Oak Cliff. Numerous shopping and professional facilities are located just north of DeSoto and are accessed by these facilities.

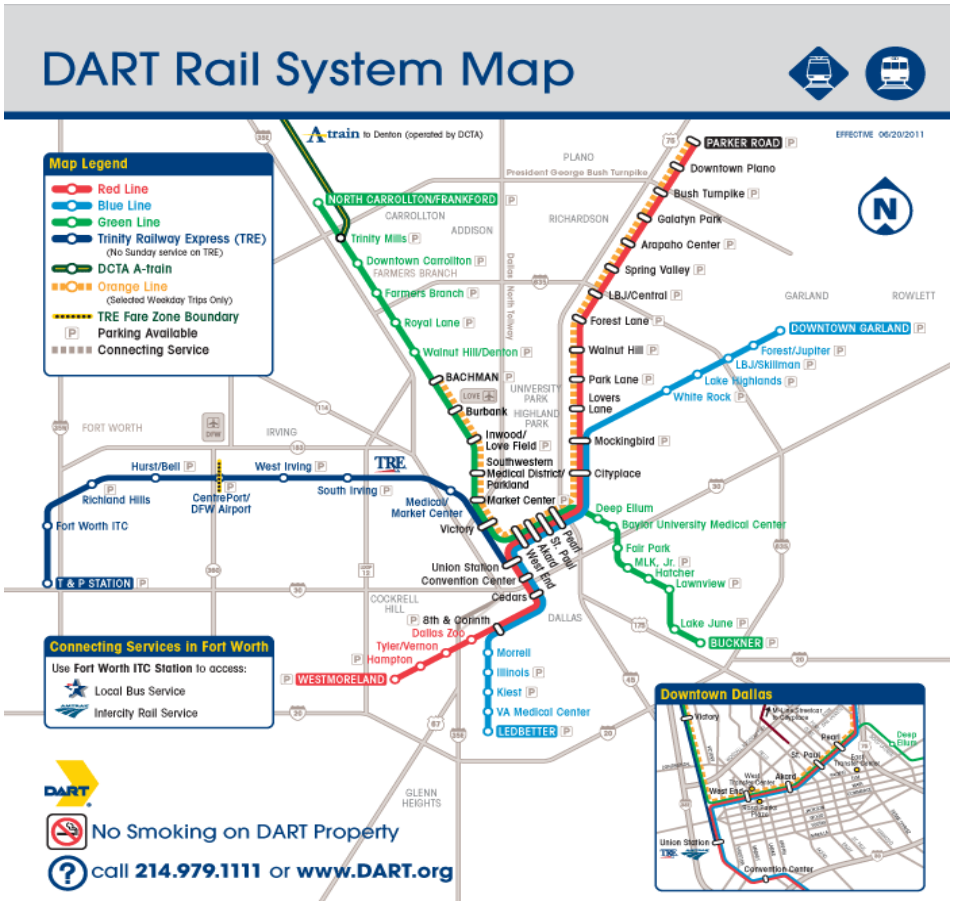
Finally, the frontage roads to I-35E and US-67 boast significant commercial development on both sides. While these are located at the city's fringe, they provide significant employment and tax base to the community.

Existing Transit Services

Summary of DART Rail services

The DART light rail system, shown in Figure 15, comprises 48.6 miles between its three lines — the Red Line, the Blue Line and the Green Line. On average, it records about 57,700 boarding riders per weekday. Two routes, the Red and Blue Lines, serve Southwest Dallas in the general vicinity of DeSoto.

Figure 15 DART Rail System



The **Red Line** operates from a southwestern terminus at Westmoreland Station. This facility is located at the intersection of Illinois Avenue and Westmoreland Road. The line runs northeast, under the Dallas Convention Center and through downtown Dallas. It then follows Central Expressway (US 75) through north Dallas, Richardson and Plano, finally ending at the Parker Road Station at Park Boulevard near Central Expressway in Collin County.

The rail line was part of the initial launch of DART's light rail service in 1996. The Westmoreland Station opened on June 14, 1996. It serves nearby residential and commercial areas and features bus service to Southwest Center Mall.

The **Blue Line** operates from a southern terminus at Ledbetter Station at Lancaster Road, just south of Ledbetter Drive (Loop 12). The line runs north, under the Dallas Convention Center and through downtown Dallas. After leaving Mockingbird Station, the line diverts to the northeast towards White Rock Lake. The line then goes north and then east into Garland, finally ending at the downtown Garland Station at Walnut and Fifth Streets.

Ledbetter Station is a DART Light Rail station located in the Oak Cliff neighborhood, near the Intersection of Lancaster Road (SH 342) and Ledbetter Drive. It opened in 1997 and serves Paul Quinn College and Cedar Valley College.

DART's 2030 Transit System Plan, approved in October 2006, calls for the Blue Line to be extended south beyond Ledbetter Station to Interstate 20, near Bonnie View Road and the SouthPort Intermodal Terminal. The plan also includes a new Lake Highlands station near Skillman Street and Kingsley Road. Planned completion date is 2018. Current plans also call for the line's extension through Garland into Rowlett, connecting to the Rowlett Park-and-Ride by December 2012.

The Green Line operates from North Carrollton/Frankford station in the northwest though Dallas downtown to Buckner station in the southeast. Denton Country Transportation Authority's A-Train connects with the Green line at the Trinity Mills station.

The Orange line follows the green line alignment between the Bachman station and Dallas downtown and then follows the Red line alignment to Parker road station in Plano. By 2014, the Orange line is expected to extend from the Bachman station to DFW Airport.

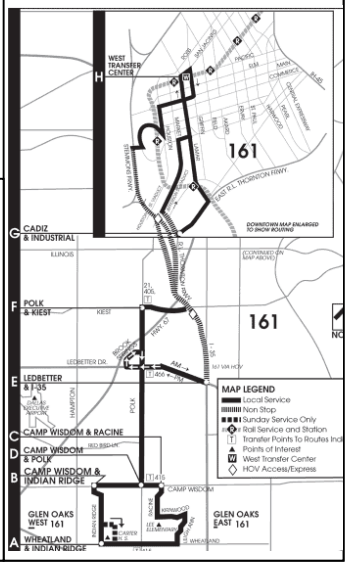
Summary of Nearby DART Bus Services

While DeSoto is not part of the DART system, several existing bus routes operate near DeSoto and likely impact the lives of DeSoto residents. The following routes operate within one-half mile of the city. With the exception of Route 206, the express service to Glenn Heights, all these routes have stop locations in close proximity to the city.

Route 161

	Weekday	Saturdays	Sundays
Headways (Peak/Midday)	10*/30	20	30
Average Boarding Passengers	1,882	968	638

This is a fairly complex route, with terminal loops at both ends. At its southern end the route begins at Wheatland & Indian Ridge, with service operating bi-directionally on both the Indian Ridge and Leigh Ann sides of the loop. This is just north of DeSoto's city limits. It travels to downtown Dallas via I-35E, providing all-day service into the downtown.

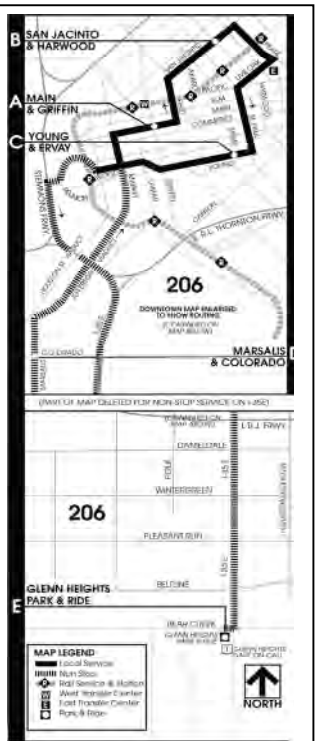


Route 206

	Weekday	Saturdays	Sundays
Headways (Peak/Midday)	15/90	-	-
Average Boarding Passengers (2010)	974	-	-

Route 206 is a commuter express service that connects the Glenn Heights Park and Ride Lot with downtown Dallas. It offers frequent service, traveling along I35E, with travel times that approximate private autos. There are no stops between Glenn Heights and the downtown.

The Glenn Heights Park and Ride Lot has 595 spaces. During a September 2009 count 348 were occupied, a 58% occupancy rate. Because this is the southernmost physical facility in the DART system, it undoubtedly functions as an intercept location for people traveling from locations farther to the south and then transferring to DART. Several people commented at that they believe the facility is also being used by DeSoto residents.



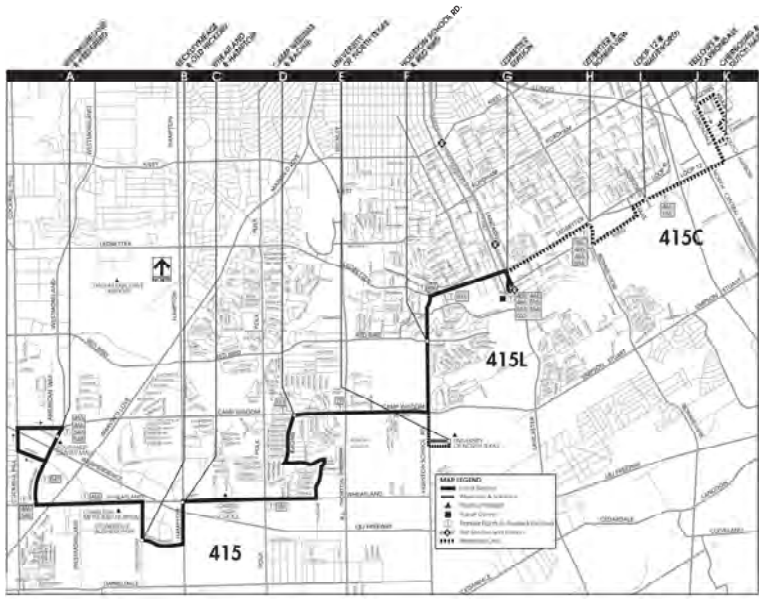
Route 415

	Weekday	Saturdays	Sundays
Headways (Peak/Midday)	30/60	60	60
Average Boarding Passengers (2010)	1,000	461	337

Traveling along Wheatland just north of DeSoto, Route 415 offers linkages to Ledbetter Station and DART's Blue Line. It also serves the University of North Texas and during commute hours continues east along Ledbetter Road.

Five stops along Wheatland Road are located along DeSoto's city boundary. Together they experience about 20 boarding passengers per day.

Along with Route 548, Route 415 serves employment centers along Old Hickory, Beckleymeade, and Hampton, again just north of the city limits.



Route 415 Eastbound on Wheatland

Name	On	Off	Load
WESTMORELAND @ GLENNLYONS - S - MB2	0	3	53
WESTMORELAND @ WHEATLAND - S- MB	1	1	53
WHEATLAND @ PRINCE GEORGE - E - MB	12	1	64
WHEATLAND @ BOLTON BOONE - E - NS	4	4	64
WHEATLAND @ WEST VIRGINIA - E - NS	7	3	68
WHEATLAND @ KIRNWOOD - E - MB	46	10	104
WHEATLAND @ OLD HICKORY - E - MB	10	1	112
WHEATLAND @ OLD HICKORY - E - NS	3	0	115
OLD HICKORY @ STONEVIEW - S - MB	3	0	118
OLD HICKORY @ BECKLEYMEADE - S - MB	7	0	126
BECKLEYMEADE @ OLD HICKORY - E - FS	9	1	133
BECKLEYMEADE @ AUTOBAHN - E - NS	3	1	135
BECKLEYMEADE @ STONEVIEW - E - FS	16	1	149
HAMPTON @ BECKLEYMEADE - N - FS	0	0	149
HAMPTON @ IH 20 - N - MB	3	0	152
WHEATLAND @ HAMPTON - E - FS	4	0	157
WHEATLAND @ INDIAN RIDGE - E - MB	21	25	152
WHEATLAND @ MEAGAN - E - NS	3	4	151
WHEATLAND @ POLK - E - MB	4	1	154
WHEATLAND @ POLK - E - FS	25	15	164
WHEATLAND @ RACINE - E - MB	1	1	164
WHEATLAND @ RACINE - E - NS	1	1	164
WHEATLAND @ GREENSPAN - E - NS	0	0	164
LEIGH ANN @ WHEATLAND - N - FS	15	13	166

Stops adjacent to DeSoto

Route 415 Westbound on Wheatland

Name	On	Off	Load
LEIGH ANN @ WHEATLAND - S - NS	15	15	220
WHEATLAND @ GREENSPAN - W - NS	0	1	218
WHEATLAND @ RACINE - W - NS	0	1	217
WHEATLAND @ POLK - W - MB	0	3	214
WHEATLAND @ POLK - W - NS	21	16	218
WHEATLAND @ MEAGAN - W - MB	6	4	220
WHEATLAND @ MEAGAN - W - FS	0	37	182
WHEATLAND @ FELLOWSHIP - W - NS	15	4	193
HAMPTON @ WHEATLAND - S - FS	0	4	188
HAMPTON @ BECKLEYMEADE - S - MB	0	7	181
BECKLEYMEADE @ HAMPTON - W - FS	0	15	166
BECKLEYMEADE @ STONEVIEW - W - NS	0	0	166
BECKLEYMEADE @ AUTOBAHN - W - NS	0	10	156
BECKLEYMEADE @ OLD HICKORY - W - NS	1	9	148
OLD HICKORY @ STONEVIEW - N - MB	0	7	141
OLD HICKORY @ WHEATLAND - N - MB	0	1	139
WHEATLAND @ OLD HICKORY - W - FS	0	1	138
WHEATLAND @ KIRNWOOD - W - MB	0	9	129
WHEATLAND @ WEST VIRGINIA - W - MB	18	44	102
WHEATLAND @ WEST VIRGINIA - W - NS	3	7	98
WHEATLAND @ BOLTON BOONE - W - FS	1	6	93
WHEATLAND @ DUKE OF GLOUCESTER - W	0	1	92
WHEATLAND @ PRINCE GEORGE - W - FS	1	7	86
WHEATLAND @ WESTMORELAND - W - NS	0	7	79
WESTMORELAND @ GLENNLYONS - N - NS	1	6	74
WESTMORELAND @ GANNON - N - MB1	0	0	74

Stops immediately across the street from DeSoto

Route 453

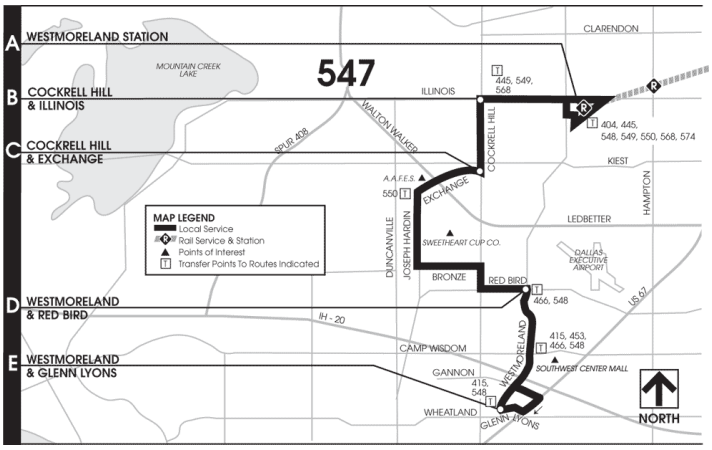
	Weekday	Saturdays	Sundays
Headways (Peak/Midday)	20/40	40	40
Average Boarding Passengers (2010)	2,053	1,235	784

This route provides DART's primary Hampton Road service. It begins near the Dallas Executive Airport (Red Bird Lane & Camp Wisdom), operates a loop through neighborhoods just north of I-20, and then serves Hampton Road until it intersects Harry Hines at the U.T. Medical School. The route is very productive throughout its southern section, recording more than 350 daily boardings along Camp Wisdom, Chesterfield, and Chaucer.

Route 547

	Weekday	Saturdays	Sundays
Headways (Peak/Midday)	20/60	60	-
Average Boarding Passengers (2010)	481	201	-

Along with Route 548, this route provides feeder service to the Westmoreland Station. It operates to the east of US-67, terminating at Westmoreland and Glennlyons. As such, it never touches DeSoto.



Route 548

	Weekday	Saturdays	Sundays
Headways (Peak/Midday)	20/40	60	60
Average Boarding Passengers (2010)	1,153	452	347

DART classifies Route 548 as a Rail Station Feeder Service with destinations that include:

- Westmoreland Station
- Wheatland & I-20
- Old Hickory Trail
- Woods/Sugarberry

Like Route 415, Route 548 touches DeSoto where the city limit extends to Wheatland. About 38 people a day board at stops located in this area. Far more passenger activity occurs at other stops located within a half-mile of DeSoto.

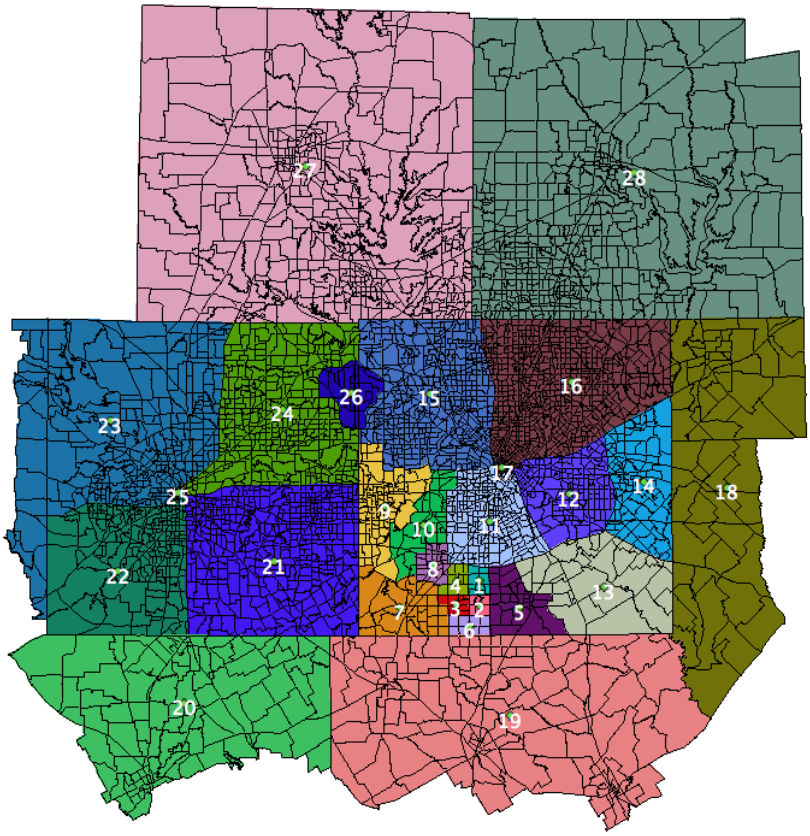
Route 548 Passenger Activity Near Desoto

Name	On	Off	Load
WESTMORELAND @ GLENNLYONS - S - MB1	0	0	217
WESTMORELAND @ GLENNLYONS - S - MB2	0	0	217
WESTMORELAND @ WHEATLAND - S- MB	0	0	217
GANNON @ WESTMORELAND - E - FS	1	29	189
GANNON @ US 67 - E - MB1	1	11	179
GANNON @ US 67 - E - MB2	1	28	152
GANNON @ US 67 - E - NS	2	10	144
US 67 @ GLENNLYONS - S - MB	0	1	143
US 67 @ GLENNLYONS - S - NS	5	45	103
WHEATLAND @ PRINCE GEORGE - E - MB	1	13	91
WHEATLAND @ PRINCE GEORGE - E - FS	1	8	84
WHEATLAND @ BOLTON BOONE - E - NS	5	17	72
WHEATLAND @ WEST VIRGINIA - E - NS	1	16	57
WHEATLAND @ KIRNWOOD - E - MB	6	47	16
WHEATLAND @ OLD HICKORY - E - MB	5	8	13
WHEATLAND @ OLD HICKORY - E - NS	0	0	13
WHEATLAND @ OLD HICKORY - E - NS	2	0	15
OLD HICKORY @ STONEVIEW - S - MB	5	4	16
OLD HICKORY @ BECKLEYMEADE - S - MB	2	7	11
BECKLEYMEADE @ OLD HICKORY - E - FS	15	12	14
BECKLEYMEADE @ AUTOBAHN - E - NS	4	6	12
BECKLEYMEADE @ STONEVIEW - E - FS	10	11	11
HAMPTON @ BECKLEYMEADE - N - FS	2	1	12
HAMPTON @ IH 20 - N - MB	5	8	9
WHEATLAND @ HAMPTON - W - FS	2	1	10
WHEATLAND @ IH 20 - W - NS	0	2	8
IH 20 @ BAINBRIDGE - W - MB	1	1	8
IH 20 @ KIRNWOOD - W - MB	13	8	13
KIRNWOOD @ WHEATLAND - S - MB	27	4	36
WHEATLAND @ WEST VIRGINIA - W - MB	61	2	95
WHEATLAND @ WEST VIRGINIA - W - NS	17	0	112
WHEATLAND @ BOLTON BOONE - W - FS	5	0	117
WHEATLAND @ DUKE OF GLOUCESTER - W	6	0	123
WHEATLAND @ PRINCE GEORGE - W - FS	20	6	137
WHEATLAND @ WESTMORELAND - W - NS	0	0	137

Travel Demand Patterns

This chapter considers current and projected future travel demand patterns by DeSoto residents. To accomplish this, the region was split into twenty-eight zones, as illustrated in Figure 16. DeSoto itself was divided into four zones. The remaining 24 are external to the city.

Figure 16 Travel Demand Zones



Legend:

1-4 DeSoto
5 Lancaster
6 Glenn Heights
7 Cedar Hill
8 Duncanville
9 Grand Prairie
10 SW Dallas
11 S Dallas
12 SE Dallas
13 Wilmer/Hutch.
14 SV/Mesquite
15 NW Dallas Co.
16 NE Dallas Co.
17 Dallas CBD
18 RKWall/Kauffman
19 Ellis Co.
20 Johnson Co.
21 SE Tarrant Co
22 SW Tarrant Co
23 NW Tarrant Co
24 NE Tarrant Co
25 Fort Worth CBD
26 DFW Airport
27 Denton Co.
28 Collin Co.

Using the regional travel demand model, the number of people traveling from DeSoto to each of the external zones was calculated, both for work-related trips and for total trip making. Because DeSoto is

not currently served by public transportation, transit trips were not calculated. Four time horizons were considered: 2009, 2019, 2025, and 2030. Table 7 summarizes the results of this analysis.

Table 7 Travel Demand Patterns – Work and Total Trips

From DeSoto	Work Trips				Total Trips			
To	2009	2019	2025	2030	2009	2019	2025	2030
DeSoto	5,787	5,758	5,342	5,125	77,417	79,607	72,095	70,634
Lancaster	1,389	1,590	1,857	2,025	9,566	11,414	14,527	15,912
Glenn Heights	360	423	388	440	3,373	3,906	3,877	4,277
Cedar Hill	968	1,139	1,099	1,191	5,927	6,848	6,668	7,196
Duncanville	1,115	1,109	1,096	1,071	6,640	6,976	6,622	6,545
Grand Prairie	882	932	912	841	2,415	2,687	2,697	2,502
SW Dallas	1,349	1,467	1,468	1,386	4,680	5,101	5,371	5,087
S Dallas	5,833	5,544	5,743	5,464	22,078	22,278	23,806	22,806
SE Dallas	1,184	1,169	1,160	1,102	2,909	2,951	3,004	2,850
Wilmer/Hutch.	749	855	1,063	1,343	2,981	3,342	4,490	5,860
SV/Mesquite	363	407	397	396	1,160	1,320	1,340	1,364
NW Dallas Co.	6,364	6,320	6,340	6,090	12,815	12,773	13,064	12,366
NE Dallas Co.	4,525	4,851	5,323	5,424	10,330	11,099	12,214	11,992
Dallas CBD	3,387	3,184	3,189	3,160	5,706	5,412	5,586	5,461
RKWall/Kauffman	140	149	196	280	555	657	906	1,298
Ellis Co.	1,985	2,387	2,705	3,324	6,258	7,897	9,063	11,168
Johnson Co.	219	174	329	426	869	683	1,200	1,570
SE Tarrant Co	1,796	1,853	1,883	1,735	5,313	5,652	5,810	5,432
SW Tarrant Co	317	265	294	283	973	856	954	962
NW Tarrant Co	325	284	326	302	1,074	1,003	1,153	1,114
NE Tarrant Co	958	1,001	1,064	979	2,628	2,852	3,054	2,849
Fort Worth CBD	170	142	161	151	373	323	370	356
DFW Airport	267	307	306	301	1,568	2,176	2,417	2,751
Denton Co.	203	233	251	248	1,069	1,177	1,266	1,330
Collin Co.	321	360	384	420	1,209	1,419	1,520	1,594
TOTAL	40,958	41,904	43,275	43,508	189,885	200,409	203,075	205,278

Indicates the top 10 destinations from DeSoto

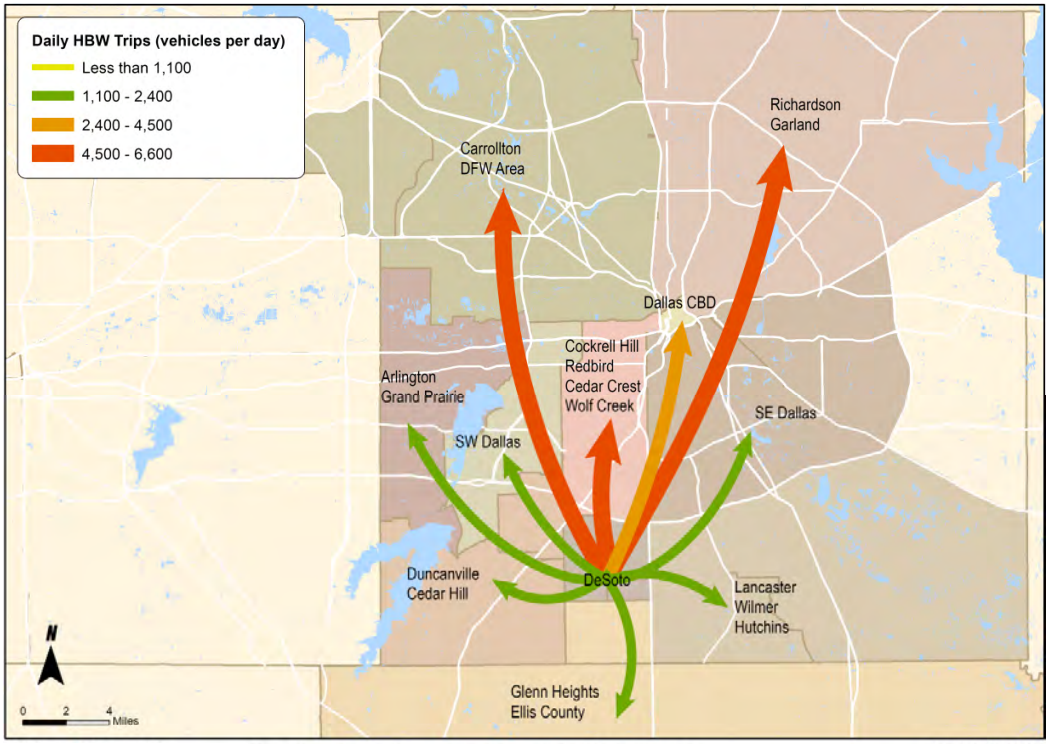
Source: NCTCOG Travel Demand Model

Current origin-destination patterns to/from DeSoto

Most people who live in DeSoto work in other communities, often distant from their homes. Figure 17 and Figure 18 illustrate the ways that people get to work today and how those travel patterns are projected to change during the next twenty years.

Today, the largest employment zone for DeSoto residents is Northwest Dallas County. This includes areas around Carrollton and the DFW Airport.

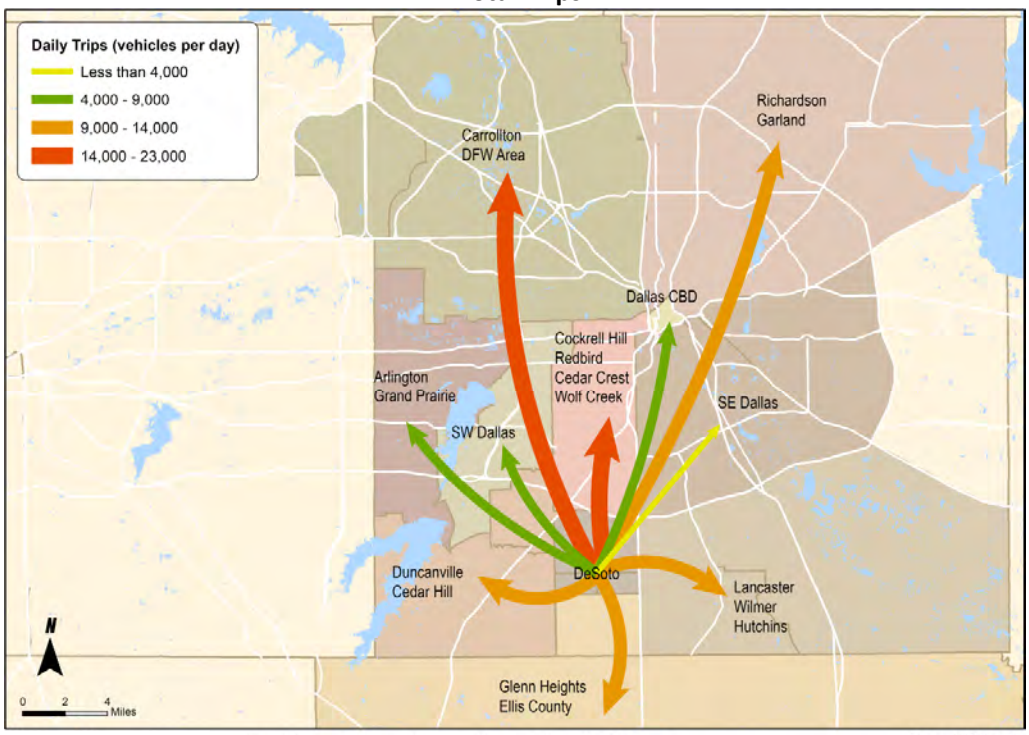
Figure 17 2009 Travel Patterns Home-Based Work Trips



Note: Trips to all other locations comprise an additional 3,412 daily trips.
Trips within DeSoto comprise an additional 5,787 daily trips.

Source: NCTCOG GIS

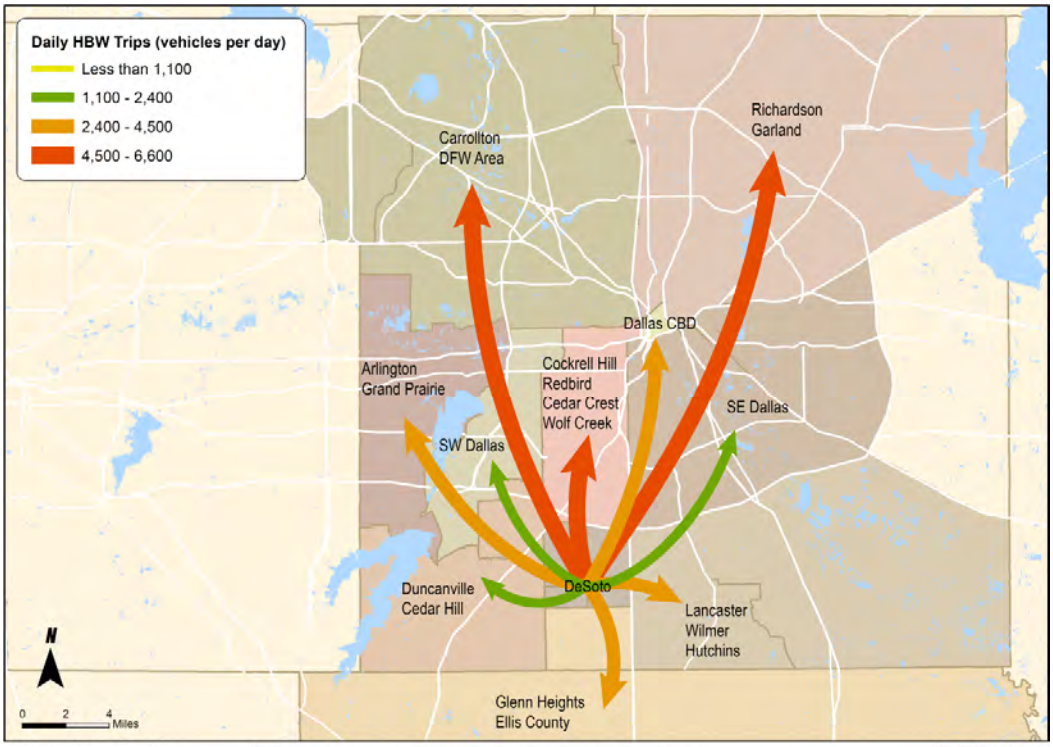
Total Trips



Note: Trips to all other locations comprise an additional 9,536 daily trips.
Trips within DeSoto comprise an additional 77,416 daily trips.

Source: NCTCOG GIS

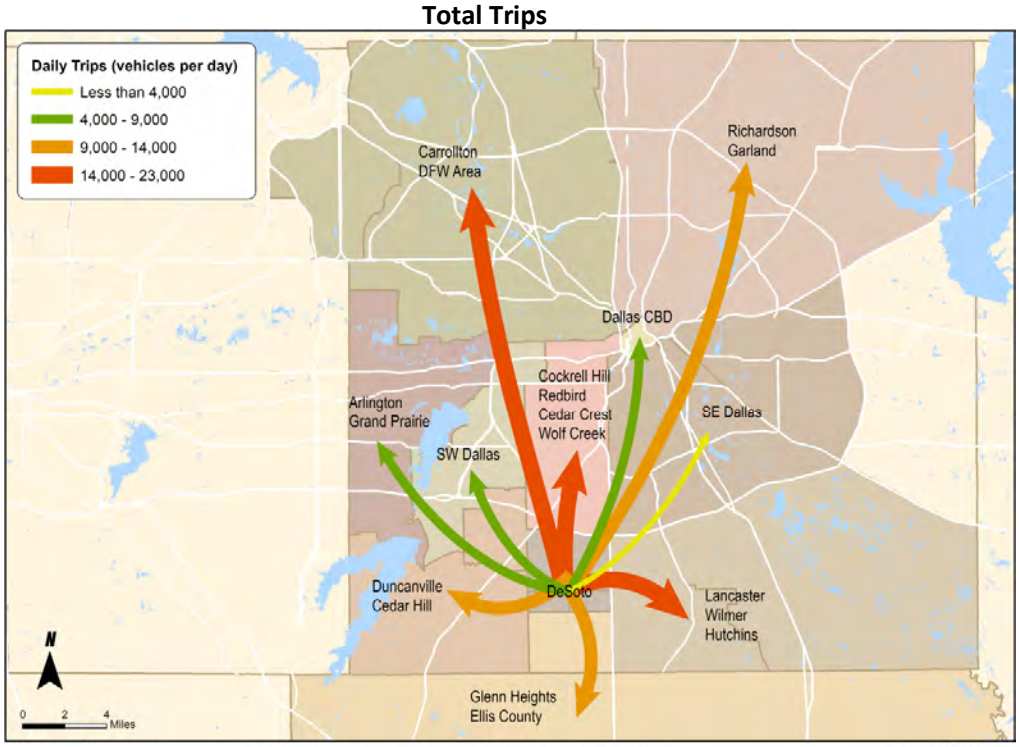
Figure 18 2025 Travel Patterns Home-Based Work Trips



Note: Trips to all other locations comprise an additional 3,240 daily trips.
Trips within DeSoto comprise an additional 5,342 daily trips.

Source: NCTCOG GIS

Total Trips



Note: Trips to all other locations comprise an additional 11,392 daily trips.
Trips within DeSoto comprise an additional 72,095 daily trips.

Source: NCTCOG GIS

Summary of Previous Discussions about Transit

Community Conversation about Transit

In January and February 2010, the City of DeSoto used a series of public comment opportunities to gauge the interest of residents for public transportation. The opportunities included a town hall meeting, a series of "DeSoto Dining & Dialogue" discussions held in the homes of DeSoto residents, and a blog on the City website where residents could write comments.

Overall, the comments from the public meeting were mixed, with many people in favor of public transportation and many people opposed to it. Question 1 at the town hall meeting asked: "Do you think there is a need for some type of public transportation in DeSoto?" There were a total of 26 comments, with 4 opposing public transportation entirely, 9 generally opposed to public transportation but open to a solution for the elderly and/or people with disabilities, 10 in favor of public transportation, and 3 that were neutral or did not address the question. Question 2 asked: "If you see a need, what form would that transportation system take?" Out of 12 comments, 7 favored a form of fixed-route transit and 5 favored an on-demand system. Question 3 asked if DeSoto residents would be willing to pay for public transportation with increased property taxes. Out of 10 comments, 3 said that they would support a tax increase, 4 said that they would not, and 3 were neutral.

Question 1 - Do you think there is a need for some type of public transportation in DeSoto?		
No public transportation	**4**	**17%**
Oppose public transportation, but in favor of elderly/disabled transportation	**9**	**39%**
Support public transportation	**10**	**43%**
Total	**23**	

Question 2 - If you see a need, what form would that transportation system take?		
Fixed route	**7**	**58%**
On demand	**5**	**42%**
Total	**12**	

Question 3 - Mass transit represents a new expense for DeSoto local government. Depending on the preferred delivery system, this cost would range from 5¢ to 12¢ on the tax rate. Would you be willing to pay for public transportation with increased property taxes?		
Support taxes	**3**	**43%**
Don't support taxes	**4**	**57%**
Total	**7**	

The most common reasons given by residents for supporting public transportation included support for the elderly and/or persons with disabilities, better mobility options, community and business development, to connect to other communities, and to save money. The most common negative comments given by residents were that public transportation would make the community worse or increase crime, damage streets, and increase taxes. In general, residents strongly opposed joining DART. They were more interested in a small city-run system that would provide transportation within DeSoto or connect to other communities and/or DART, or an on-demand system for the elderly and/or people with disabilities.

Comments during the DeSoto Dining & Dialogue sessions were similar to those in the public meeting. Many people were in favor of public transportation for numerous reasons, including improvements to mobility. Others opposed it; common reasons given were crime and taxes.

Overall, comments on the blog were much more negative than those during the public meeting and DeSoto Dining & Dialogue sessions. The majority of comments opposed public transportation entirely, with a small number supporting public transportation or elderly/disabled transportation. Many people commented that they moved to DeSoto because it did not have public transportation, and that they did not feel that it was needed. Other reasons for opposing transit included crime, an opposition to tax increases, and the desire for taxes to pay for other needs, such as schools and infrastructure. The most common reason given in support of public transportation was to help the elderly and/or people with disabilities.

Chapter 3. Ingredients of Successful Transportation Services

Some people assume that the only types of public transportation available are buses that operate along major arterial streets or some type of rail service that links suburban neighborhoods with a central business district. In fact, these are only two of a wide range of public transportation options, each designed to meet a specific need. This chapter discusses that range of travel opportunities and begins to consider those that may be appropriate for DeSoto. Subsequent chapters continue that analysis, incorporating community perceptions and attitudes to identify strategies that are both feasible and supported by a broad cross section of the community.

Matching Transportation to Trip Purpose

People travel for a variety of different reasons: work, shopping, recreation, and others. In fact, according to the North Central Texas Council of Governments (NCTCOG) only about 22% of all trip making by DeSoto residents is for work purposes.[14] Not only do their trip purposes vary, but peoples' destinations vary greatly. According to the NCTCOG, only about 18% of DeSoto residents' work destinations are inside the city limits, while 41% of total trip making stays within the city. This means that while most people work outside the city, many shop and socialize inside the city. Furthermore, the public transportation services that appeal to travelers for their work trips, may not appeal to people making non-work trips.

The type of public transportation service that is suited to these differing trip purposes can vary dramatically. Commuters generally make the same work trip almost every day, often at the same time. They need reliable service that will get them to their destination quickly and drop them off within easy walking distance. These are often relatively long trips. In contrast, other trips are much more oriented to the local community. People make trips to go shopping, to church, visit friends, conduct business at City Hall, or just get out of the house. This means that destinations are scattered throughout the community and a public transportation service that focuses on serving one place may not have value for many other trip purposes.

Successful public transportation services recognize this reality and are tailored to the needs of the community they serve. For example, vanpools, which are discussed in the next chapter, have proven a highly successful and cost-effective way of transporting people to worksites that are 10-40 miles from home but do not work very well for seniors making trips to the grocery store. A demand responsive or fixed-route service is generally more suited to that sort of local need.

The Connection to Land Use

Of all the factors affecting the demand for public transportation, the most important is the number of people who live and work within walking distance of that service. When population/employment densities are high, capital intensive and frequent services become practical. When these densities are low, service needs to be flexible so that it can economically serve a larger geographic area. Regardless of

[14] Source: North Central Texas Council of Governments

the type of transit involved, people must usually walk to and from transit service at the beginning or end of their trip (and sometimes both). The shorter the walking distance to access transit, the more likely it is to be used. When public transportation services operate in areas with high densities of population and/or employment, a larger segment of the population has more direct access to that service. The result is that, as densities increase, the demand for public transportation services also goes up.

Population and employment densities can also be used to provide an indication of the type and frequency of service that is most appropriate for a given area. As shown in Figure 19:

- Light rail generally requires 12 to 30 households per acre or 15 jobs per acre.
- Bus rapid transit (BRT) requires 10 to 20 households or more than 13 jobs per acre.
- Local bus service can be supported by communities with between 3 and 20 households per acre and 4 to 13 jobs per acre.

Population and employment densities can also provide an indication whether it will be feasible to provide frequent enough service in a cost-effective manner to attract significant numbers of riders who have travel options (i.e. choice riders) but choose to use transit because it offers a comparable level of convenience. In general, there need to be approximately five to six residents per acre to support transit service that will be frequent enough to attract choice riders. This roughly correlates to 30 minute service. For 15 minute service frequencies, population densities need to be greater than 12 households per acre.

With an estimated population of 49,047 in 2010, DeSoto's overall population density is about 3.6 persons per acre. [15] This falls at the very lowest level where local bus service may be supported. Figure 3 illustrates how the city's population is broadly distributed across its land area. Only a limited number of areas, largely confined to neighborhoods along Hampton Road and Pleasant Run, have densities above five persons per acre. Similarly, with about 13,350 jobs, the city does not appear to have employment densities that would support traditional transit services.[16]

[15] Source: 2010 Census

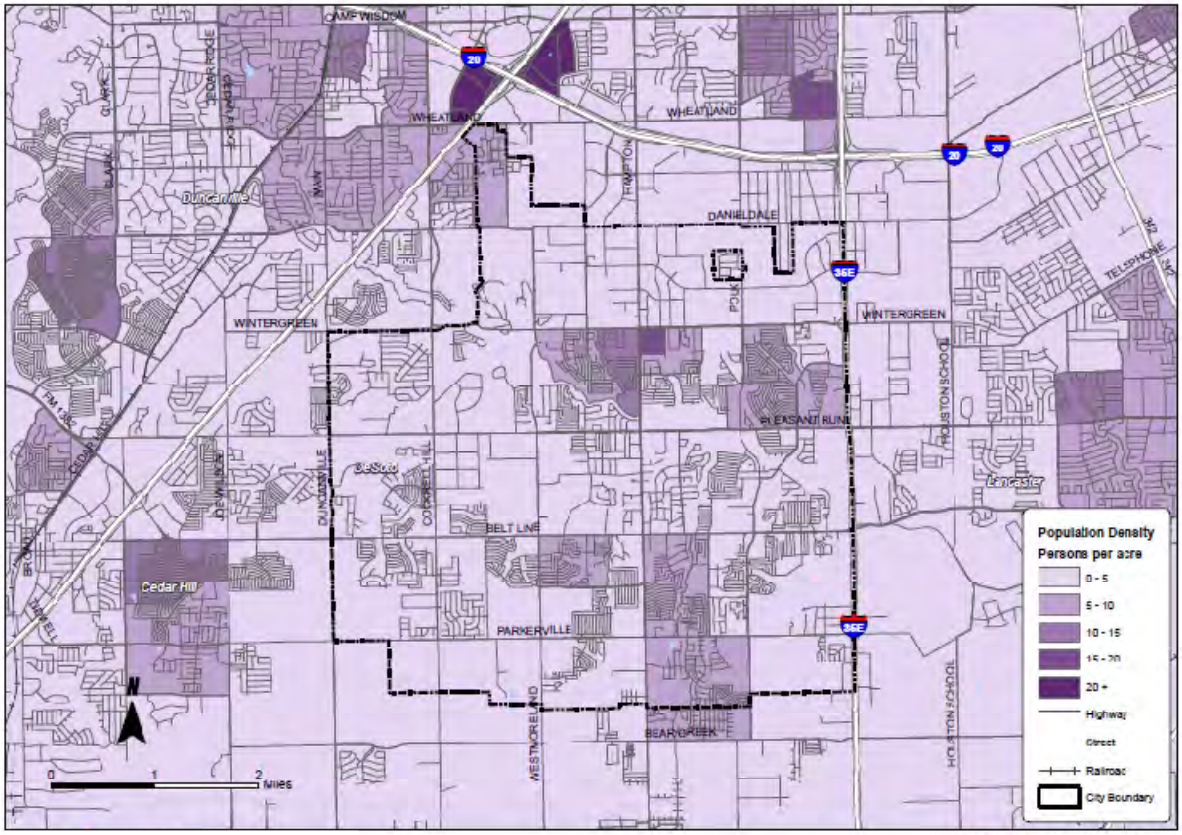
[16] Source: Bureau of Labor Statistics 2010

Figure 19 Transit Supportive Population and Employment Densities

SUMMARY

Taking into consideration DeSoto's population and employment densities, there are some neighborhoods that may support traditional transit services, such as local bus service that operates every 30-60 minutes. While this marginal appraisal applies to fixed-route bus service, it does not necessarily mean that other forms of public transportation service are not appropriate. The next section discusses a range of public transportation options, identifying several that may best serve the land use patterns in and around DeSoto.

Figure 20 Residential Densities in the City of DeSoto



Source: NCTCOG GIS, US Census

The Transit Toolbox

As stated before, public transportation takes on numerous forms, each suited to different communities and operating conditions. This section summarizes the different services that operate in American communities and identifies those that may appropriately serve DeSoto. A more detailed description of each service mode is presented in Appendix D.

Generally, public transportation services can be subdivided into three separate categories – commuter & long distance services, local services, and community-based transportation. These are not hard and fast categories; some commuter services also serve a local purpose. Community-based transportation is a unique category not because of the areas it serves, but because of its delivery structure.

- ***Commuter and Long Distance Services*** including Commuter Rail, Light Rail, Bus Rapid Transit, and Express Bus, are strategies that are intended to transport people over a relatively long distance with travel times that compete favorably with private autos. As a group they work best in communities with relatively high densities where large numbers of people will board and disembark at a relatively small number of stations.
- ***Local Services*** including Local Bus, Community Circulators, Business District Shuttles, Commuter Shuttle, Dial-a-Ride, and Deviated Fixed-Route, are designed to increase mobility within individual

communities. They move people around their local neighborhoods and are more concerned with providing convenience rather than speed.

- ***Community Based Transportation Strategies*** include Taxi Subsidy, Volunteer Driver/Escort Programs, Coordinated Community Transportation, Carpooling, Vanpool Services, Dynamic Ridesharing, and Taxi Sharing. These are strategies designed to make better use of existing facilities by efficiently combining common destinations when people travel.

Table 8 summarizes the strategies that have been considered, which include those that may be suitable for DeSoto. While several strategies, including possible rail services or regional bus services are clearly beyond DeSoto's current capabilities, they have been included in order to both present a full spectrum of public transportation service, and to illustrate the continuum of services that DeSoto may consider in the future.

Table 8 Summary of Public Transportation Strategies

Commuter & Long Distance Services	Local Services	Community Based Transportation
Commuter Rail	Local Bus	Taxi Subsidy
Light Rail	Community Circulators	Volunteer Driver/Escort Programs
Park and Ride Facilities/DART Subsidy	Business District Shuttles	Coordinated Community Transportation
Bus Rapid Transit	Commuter Shuttle	Carpooling
Express Bus	Dial-a-Ride	Vanpool Services
Shuttle to DART Stations	Deviated Fixed-Route	Dynamic Ridesharing
		Taxi Sharing

Chapter 4. What Residents Say About Public Transportation

Stakeholder Interviews

As part of the study effort, the project team conducted eleven interviews with local community leaders, gaining their perspective about DeSoto's transportation problems and needs. These interviews included people with leadership roles in schools, the senior community, social services agencies, and the local business community. A sample listing of the questions and issues discussed is contained in Appendix A.

Most stakeholders said that their constituents manage to get along without public transportation. Parents have learned to carpool, seniors find rides, and some people just do without. Still each stakeholder also identified transportation issues that affect their constituency. Specific transportation issues that were identified include:

1. Many seniors have difficulty getting around in the community, especially when traveling to medical appointments.
2. Low income people without an automobile find it very difficult to get to the DeSoto Food Pantry and other social service functions.
3. Parents of school age children develop informal carpools to get their kids to and from activities.
4. Some firms that rely on low-wage workers are finding that many applicants lack transportation options. Prospective employees who live outside the community are unable to reach jobs in DeSoto without access to a private vehicle. Surprisingly, half of the city's employees live outside of the DeSoto city limits.

A large variety of public transportation services was suggested by the stakeholders. These suggestions included trains, commuter express services, local fixed-route bus services, carpools, vanpools, and dial-a-ride services.

Travel Options Survey

The Survey:

Beginning in February 2011, DeSoto residents were encouraged to participate in a survey that asked about current commute habits, demographics, and respondents' opinion about different forms of transportation. The survey was taken primarily on the Internet, by paper, and through personal interviews using Apple iPads. As a part of the survey process, short vignettes (videos) were developed to emphasize the City's desire for its citizens to think about the future and the choices, or lack thereof, in future transportation modes. The vignettes used ordinary citizens from a variety of demographics and backgrounds. The vignettes were viewed before the respondent took the self-administered online survey. Apple iPads were used to show the videos during the intercept surveys conducted in public places. The survey team intercepted customers at local grocery stores, specifically, Kroger, Albertsons, and Wal-Mart. Tom Thumb declined to participate.

The consultant team also collected surveys at public Homeowner Association meetings, senior centers, and the City Hall lobby. The vignettes (a total of 9) ran continuously on a television in the City Hall lobby area, where paper surveys were readily available.

Appendix B illustrates a copy of the survey. It contained 17 questions that were designed to gauge respondents' travel habits and interest in public transportation services. Because participants were a self-selecting portion of DeSoto residents, the survey was not intended to provide a statistically valid cross-section of the community. It does illustrate how individuals with an interest in transportation issues feel about the prospect of initiating some type of service in DeSoto.

The Survey

Three types of surveys, using *non-random self-selection* and *intercept* samples, were conducted as part of this project:

1. The online survey on the project website.
2. Non-random *Intercept* surveys at Albertsons, Kroger, Wal-Mart, a senior center, and City Hall.
3. City of Desoto employee survey (those residing within DeSoto proper).

A self-selection sample has the following general characteristics:

- It is generally a low-budget sampling technique that can be administered within a short period of time.
- Participants tend to be people who are motivated and committed to the cause (either in a positive or a negative way), and are willing to spend more time replying to the survey, which brings in more insight to the undertaken research.
- Because the respondents volunteer to participate in the survey, the sample tends to have a bias and may not be representative of the larger population.
- Self-selection surveys are usually used in the exploratory phase of a study.

Appendix B includes a more thorough overview of survey techniques.

Survey Results

A total of 774 surveys were collected. Responses from people not living in DeSoto were eliminated as well as those that were non-responsive, leaving 647 valid surveys. The remaining surveys were tabulated and analyzed; responses are summarized in Appendix C. This data, along with detailed analyses of respondent groups' answers, is used throughout this report.

Recognizing that the survey was a self-selecting sample, project staff members were concerned whether it was representative of the broader DeSoto population. To address this question, the characteristics of survey respondents were compared with the city's population as a whole.

The team first looked at household size. The following table shows the household size distribution in DeSoto. The median household size of survey respondents is 2.0 (meaning that 50% of respondents have a household size greater than 2.0, and 50% fall below that figure) while the mean (average) is 2.7. Comparably, the 2000 Census reported that the mean household size is 2.8, a fairly close match to the survey. (Note: The 2010 Census data has not been fully released as of the writing of this report.)

Table 9 DeSoto Household Size (Survey Results)

Household Size		
Household Size	**Respondents**	**Percentage**
No Response	2	0.31%
1	97	14.99%
2	239	36.94%
3	138	21.33%
4	101	15.61%
5 or more	70	10.82%

Median household size is 2.0 while the average household size is 2.7 according to NCTCOG

In another test, the 2008 American Community Survey estimated that roughly 13% of DeSoto residents are over the age of 65. About 21% of survey respondents were in this age category, suggesting a slight overrepresentation.[17] Finally, females accounted for 67% of survey respondents while the Census Bureau estimates that females comprise 55% of DeSoto's population. In both cases, a larger proportion of women and persons over the age of 65 completed the survey than is representative for the city as a whole.[18]

In short, while the survey represents a broad base of DeSoto residents, it did oversample some resident groups. We have attempted to consider this issue throughout the project.

The project team next considered whether city residents have any interest in public transportation. Question 9 in the survey addressed this issue, asking, "If public transportation options were available for some of your regular trips, would you use them?" Table 10 below presents a tabulation of the answers that were received in response to this question. Note that responses are divided between people who say they would utilize public transportation, others who say they would not, and a smaller group who are unsure. While this illustrates a lack of community consensus regarding the provision of public transportation, the number of affirmative responses does suggest that there is sufficient interest in some form of public transportation in the city to merit closer investigation.

Table 10 Survey respondents who say they would use public transportation for some regular trips

	Number	Percent
Yes	297	46%
No	196	30%
Maybe	154	24%

[17] Table 13, later in this report, provides a complete listing of response levels by age group.

[18] As this report was going to print the US Census released more detailed results of the 2010 Census, while not materially changing the analysis the population of people age 65 and over for DeSoto is 10.8% and the percentage of females in the population is 54%. The total population of the city remains at 49,047.

Both the survey and stakeholder interviews were designed to elicit current attitudes about public transportation, not to educate people about the range of choices available to DeSoto. While a majority of respondents reported that they have not used public transportation in the past year, a substantial number have utilized some form of transit recently. Most commonly, they either rode DART bus or light rail services.

Table 11 People Who Report Riding Public Transportation in the Past Year

Used	Respondents	Percentage
No	400	61.82%
Yes	247	38.18%

When asked which population groups are best served by public transportation, respondents most commonly identified elderly individuals who are not able to drive (Refer to Table 12). This suggests that many DeSoto residents primarily view public transportation as an option for the elderly. However, senior citizens themselves gave a more mixed response. This was most pronounced among individuals in late middle age (55-64). Although they represented only 20% of respondents, they comprised 35% of people who identified public transportation purpose as being a primary service for the elderly.

Table 12 Persons Best Served By Public Transportation (Weighted Average)[19]

Persons Best Served by Public Transportation	Respondents
Elderly Not Able to Drive	1123
Disabled	865
Commuters working in other cities	652
Families with Limited Auto Availability	536
School Age Children	302

[19] Appendix C provides a description of how responses were weighted.

When asked whether they would use public transportation if it was available, the percentage of respondents between the ages of 65 and 70 answering 'yes' was below the average of all respondents. Only when they are over 70 did a higher percentage answer affirmatively (Refer to Table 13). This suggests there may be some reluctance to utilize public transportation among the 'young old.'

Table 13 Persons Who Say They Would Use Transit, If Available

	Yes	No	Percent Yes
18-24	5	4	56%
25-34	20	21	49%
35-44	55	48	53%
45-54	65	41	61%
55-64	79	45	64%
65-70	27	22	55%
over 70	38	12	76%
Totals	289	193	60%

154 people who answered "Maybe" are not counted.

The most popular destinations for transit service identified in the survey are communities served by DART. It is unclear how respondents perceived this choice but it likely reflects individuals' desires to reach destinations served by a DART light rail station and/or local bus services in the DART service area.

Table 14 Best Destinations for Public Transportation

Destination	Respondents
DART communities	853
DFW Airport/Love Field	745
DeSoto	687
Downtown Dallas	619
Neighboring Suburbs	558

Overall, there is fairly strong interest in public transportation among survey respondents, with most people supporting the concept. However, 101 people said that public transportation is not needed. Some respondents supplemented this with written comments expressing concern about the economic and social impacts of public transportation in the DeSoto community. Several specifically addressed their opposition to the extension of DART into DeSoto but others were more general.

Chapter 5. Potential Public Transportation Markets

This chapter addresses the market potential for each of the six potential public transportation markets identified by stakeholders and local residents. They include:

- Regional Commuters
- Local Commuters
- Local Shopping
- Local Transport for Persons with Disabilities/Seniors
- Youth Transportation
- Airport Transportation

Each begins by identifying the size and interest of the market in public transportation and then suggests service strategies that may be appropriate to meet expressed needs.

Regional Commuters (Work Trips)

Most respondents commute to work destinations outside their local community. The largest commute destination, as illustrated in Figure 3 on the next page, is Northwest Dallas County, closely followed by the southwest portion of Dallas (Cockrell Hill, Redbird, Cedar Crest, and Wolf Creek), DeSoto itself, NE Dallas County and downtown Dallas. Each of these is a very large geographic area that may or may not lend itself to traditional transit solutions.

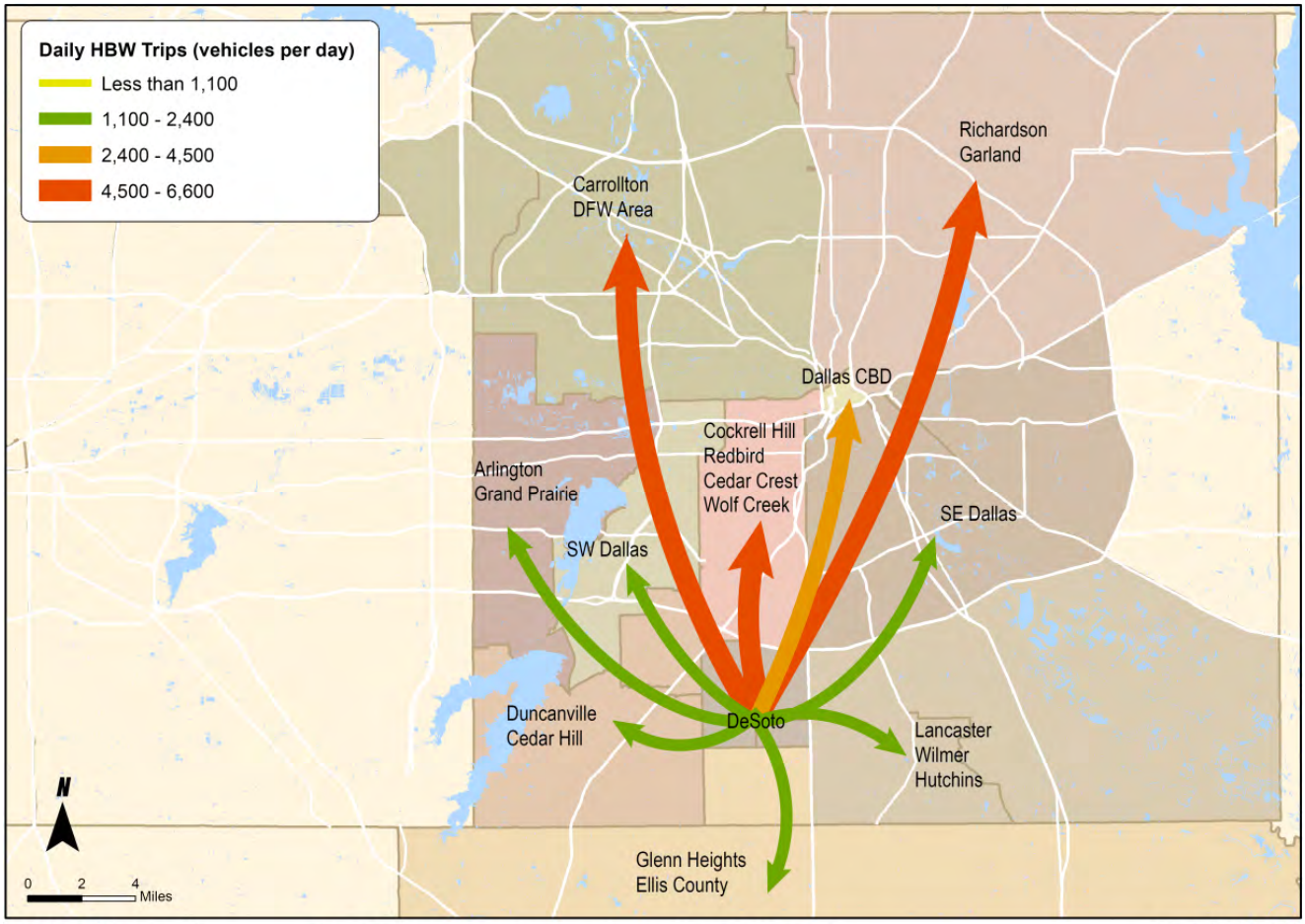
Interest in Public Transportation

The survey highlights a significant interest in public transportation options among many respondents. Table 15 summarizes the level of interest in using transit among respondents who work outside DeSoto. The percentage of people who said they might or are very likely to use public transportation for their work commute was applied to the total travel market identified by NCTCOG's travel demand model.[20] Thus, among respondents commuting to Oak Cliff and southern sector of Dallas, 54% said they might or would be very likely to use public transportation, if provided. This equates to a potential market of 4,505 daily trips or about 2,500 persons per day, assuming an average of 1.8 work trips per person.

Certainly not all of these people would actually ride transit. The southern sector of Dallas is geographically large and many people would find that any transit stops would not be within convenient walking distance. Others would find that their schedule is not compatible with available service. Still, if only 10% of this potential market actually used public transportation, this would equate to roughly 450 daily trips or 250 DeSoto residents.

[20] We recognize the fact that the survey is not a random survey and has a self-selection bias in that more people interested in transit might have chosen to participate while people less favorable to public transportation may have remained uninvolved. We also recognize there might be some definitional difference between the work trips in the NCTCOG data and the DeSoto survey. However, this expansion does give an indication as to what the maximum potential market in public transportation may be.)

Figure 21 Major Commute Destinations for DeSoto Residents[21]



Note: Trips to all other locations comprise an additional 3,412 daily trips.
Trips within DeSoto comprise an additional 5,787 daily trips.

Source: NCTCOG GIS

[21] These are broad geographic areas that encompass more than the geographic limits of any local jurisdiction. For the sake of convenience, some city names are used to identify broader geographic areas. They should not be confused.

Table 15 Potential Commute Markets from DeSoto

Destination	Work Destination by Likelihood of Using Public Transportation					Percent Maybe/ Very Likely	Market per Travel Demand Model	Total Potential Transit Market
	Total	No Response	Not likely	Maybe	Very likely			
Dallas-Oak Cliff/South Dallas	52		24	10	18	54%	8,366	4,505
Dallas-North, East or West Area	65	2	29	9	25	52%	8,230	4,305
Dallas-Downtown Area	99	1	31	19	48	68%	3,387	2,292
Richardson/Plano/Allen Area	12	2	1	2	7	75%	1,519	1,139
Ellis County	6		3	1	2	50%	1,985	993
Lancaster	12		5	3	4	58%	1,389	810
Carrollton/Farmers Branch Area	8		4	3	1	50%	1013	507
Cedar Hill	11		6	4	1	45%	968	440
Duncanville	11		7	3	1	36%	1,115	405
Garland/Mesquite/Rowlett Area	8	1	2	1	4	63%	363	227
Denton/Lewisville Area	2			1	1	100%	203	203
Glenn Heights	2		1		1	50%	360	180
Love Field Airport	1				1	100%	127	127
Fort Worth-Downtown Area	8		4	3	1	50%	170	85
DFW Airport	11		7	1	3	36%	163	59
Arlington	7		5		2	29%	104	30
Southeast Tarrant County	1		1			0%	1,796	0

These data suggest that four areas – the southwest portion of Dallas, North Dallas, the downtown, and Plano – have the greatest potential to support public transportation services outside DeSoto. With the exception of downtown Dallas, these are gigantic areas and nothing in the data suggests that travel demand is clumped in ways that would support large scale transit services within DeSoto.

Strategies for Further Consideration

Instead of large scale transit services, four possible strategies appear to have a potential transit market that is greater than 1,000 DeSoto residents:

1. ***Extending DART into DeSoto.*** The first strategy is the extension of existing local DART services that already operate in the southwest portion of Dallas region into DeSoto. This might include routes 415, 453, and/or 548. Because DeSoto is not part of the DART system, this would entail significant policy hurdles as well as likely resistance from a portion of DeSoto's residents. Notwithstanding the sales tax requirements to join DART, this is the only strategy that would cost-

effectively link DeSoto with adjacent employment centers. (Cost – Moderate, Market Potential – Moderate)[22]

2. ***Provision of a Rail Feeder Shuttle.*** Another strategy would be to provide a rail shuttle that links key neighborhoods in DeSoto with either the Westmoreland or Ledbetter Station. This strategy would face several hurdles. In order to be accessible to a majority of DeSoto residents, one or more park-and-ride facilities in DeSoto would need to be provided. These might be supplemented by local stops along the route, but pedestrian access would be hindered by the lack of sidewalks on many streets. Adding to the cost of service, the rail feeder shuttle would need to operate about every 15 minutes, at least in the afternoon, so that people would not be forced to wait for an extended period of time after getting off a DART train. (Cost – High, Market Potential – Low)

3. ***Vanpool and Carpool Services.*** DeSoto could actively support and embrace existing vanpool and carpooling efforts. Both DART and The T have established vanpool programs. Given the close-knit character of the DeSoto population, residents might feel more comfortable if they knew they were riding with their neighbors on a service that has been facilitated by the City. A designated City staff member could be assigned to oversee and promote residents' ridesharing efforts, arrange for vanpool parking areas, and facilitate the formation of DeSoto-only groups. This would be similar to facilitation efforts that are conducted by many merchant and employer groups in other parts of the country. (Cost – Low, Market Potential – Moderate)

4. ***Construct a Park-and-Ride Facility.*** Coordination with DART (and perhaps the City of Lancaster) to construct and operate a new park-and-ride facility along I-35E. Given the distance to both the Ledbetter and Westmoreland DART stations, an alternative approach toward improving access to downtown Dallas would be the placement of a new park-and-ride facility along I-35E that would be convenient to DeSoto and Lancaster residents. Among the three other cities in the Best Southwest, Lancaster expressed the most interest in public transportation. They would be the best allies, especially in constructing a park-and-ride near both cities' limits. However, with Glenn Heights nearby, more thought would need to be given to weigh the feasibility of the idea. Additionally, it is unknown what sort of financial participation DART would expect. (Cost – High[23], Market Potential – Moderate)

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[22] A general cost estimate and estimate of market potential is provided with each service alternative discussed. These are intended to be general estimates, based on experience in other communities.

Cost Estimates
- Low – Under $20,000 per year
- Moderate – Under $500,000 per year
- High – Over $500,000 per year

Market potential
- Low – Would likely appeal to fewer than 100 DeSoto residents
- Moderate – Would likely appeal to up to 1,000 DeSoto residents
- High – Would likely appeal to more than 1,000 DeSoto residents

[23] Total public costs whether borne by DeSoto, DART, or some other entity. Considers both the cost of constructing a park and ride facility and operating express transit services from that facility.

Local Commuters

The type of public transportation service that would be appropriate for local commuters differs markedly from those who travel longer distances to work. A total of 142 survey respondents said that they travel to work in DeSoto or areas immediately surrounding DeSoto, as illustrated in

Table **16**. Note that the Southwest portion of Dallas area was addressed in the previous section and not included in this count.

Table 16 Work Locations of Survey Respondents

Work Destination	Number
Cedar Hill	11
DeSoto	106
Duncanville	11
Glenn Heights	2
Lancaster	12

Interest in Public Transportation

The overwhelming majority of local area commuters currently commute using a single-occupant auto. No respondents said they currently utilize public transportation and only ten people said they carpool.

Table 17 Commute Mode of Work Trips to DeSoto and Surroundings

Commute Mode	Number
I drive alone	121
I drive/ride with someone	10
I walk	4
Other	6

When asked whether they would be likely to use public transportation if provided, 60% said it is unlikely they would ride. Only 20% said they would be very likely to use these services. This is a much lower percentage of likely riders than reported for longer distance commuters, which suggests there would be considerable challenges in attempting to create a successful local commute market.

Table 18 Likelihood of Using Public Transportation for Local Commutes

Likelihood	Number
Very likely	28
Maybe	28
Not likely	84

Strategies for Further Consideration

By itself, the local commuter category does not appear to be large enough to support a local transportation market. If, as suggested by their answers, 40% of local commuters have at least some interest in an alternate commute mode, this is still a relatively small group. Given the dispersion of residential housing and jobs throughout the DeSoto community, it would be difficult to attract a significant commuter market.

It may be possible to develop services that appeal to both commuters and shoppers, thus combining the market potential of these two groups. Persons with disabilities, seniors, and adolescents – groups that may be now excluded from the employment market because of transportation issues – may find that local public transportation options provide a new avenue to access the job market. This service could take a variety of forms, but five specific models are discussed.

1. ***Initiate community circulator services***. In the near term, this is likely the most intensive form of public transportation that could be cost-effectively operated in DeSoto. This would likely be a twenty-five foot van that would operate a fixed-route, with a fixed schedule, linking residential neighborhoods with shopping and employment districts. A fare might be charged, although the City could decide to operate it as a free service, seeking financial support from the commercial centers served. By federal law, a community circulator service would need to provide accommodation for persons with disabilities. (Cost – Moderate, Market Potential – Moderate)
2. ***Deviated fixed-route services.*** Circulator vans would operate along arterial streets, deviating into neighborhoods when requested. This might be a way to increase the percentage of local residents served without designing impossibly circuitous routes. Many communities use deviated fixed-routes as a way of identifying demand. Once high ridership areas are identified, the service is converted to a circulator service or local bus route that provides scheduled service to those locations. (Cost – Moderate, Market Potential – Moderate)
3. ***Dial-a-Ride Service.*** Most dial-a-ride systems work to combine several passenger trips together, increasing the system's efficiency but also increasing the length of time it takes to get around town. It would allow travel from any point in DeSoto to any other point in the city. As a result, people with transportation options generally find dial-a-ride transport undesirable for their own personal use. They do provide transport for individuals without other options, especially seniors, persons with disabilities, and those on a limited income. (Cost – Moderate, Market Potential – Low)
4. ***Taxi subsidy programs.*** Subsidizing taxi services are a strategy for providing public transportation without creating a public agency. While subsidy levels and methods of disbursement vary greatly, all would have the effect of creating a more favorable commercial climate for taxi operators than exists today. This would have the advantage of also fostering regional taxi transportation, even if that was not subsidized. (Cost – Low, Market Potential – Low)
5. ***Volunteer Driver Program.*** Volunteer drivers are most appropriate for non-work trips, but sometimes are a strategy for assisting persons with disabilities to enter the workforce. (Cost – Low, Market Potential – Low)

Each of these strategies could be extended to serve employment centers in adjacent communities. This would expand the scope and usability of the service.

Note that local bus service has not been included in the list of possible strategies. Several respondents identified local bus service as a desired service option, however, the cost associated with such services does not appear to be justified by the associated community benefits, or overall general interest expressed by survey respondents.

Local Non-Commute Trips

For the purposes of this section, a variety of trip purposes have been lumped together and called non-commute trips. These include school, medical, religious, and recreational trips, which are summarized in Table 19. Note that while most DeSoto residents do their grocery shopping in DeSoto, the largest destination for other types of shopping is Cedar Hill. Relatively few people travel to Glenn Heights or Lancaster for their shopping trips.

Table 19 Non-Commute Destinations and Trip Purposes (Number of Responses)

Responses	School	Medical	Church	Res/Rec	Groceries	Shop	Total
Cedar Hill	2	40	25	208	39	233	547
Dallas-Oak Cliff/South Dallas	15	71	174	13	9	18	300
DeSoto	41	170	120	130	494	146	1,101
Duncanville	5	44	41	16	11	9	126
Glenn Heights			1				1
Lancaster	12	11	14	3	12	2	54

As illustrated in Table 20, the frequency for various types of shopping trips varies greatly. Most common are school trips, which are typically daily for most students. At the other extreme are medical trips, which tend to be infrequent. Some trips pose special challenges for riders. Grocery shopping often requires people to get home before frozen items thaw or require people to carry too many bags, while church trips often occur at night or on Sunday, when public transportation services may not operate frequently.

Table 20 Non-Commute Trips by Frequency (Number of Responses)

Responses	School	Medical	Church	Res/Rec	Groceries	Shop
5 or more days per week	77*	2	4	9	12	4
2-4 days per week	38	18	207*	167*	236	83
Once a week	14	33	201	143	261*	144
Once a month	3	109	14	88	29	152*
Weekends only	2	1	63	87	36	73
A few times a year	15	354*	20	43	1	96

* Indicates the most frequent response

Many of the issues in the previous section that discussed local employment transportation also apply to shopping within the Best Southwest area. However, both the time span and potential rider population who are interested in transport to local shopping outlets are significantly larger.

Interest in Public Transportation

Considering only those people who say they will likely use public transportation if offered, the most frequently mentioned trip purposes for travel within the Best Southwest Cities area were shopping trips. For this group, most travel to other destinations is outside the community or trips are not conducted at all.

Table 21 Frequency of Travel Within The Best Southwest Cities Area – Likely Users Only

	Work	School	Medical	Church	Restaurant/ Recreation	Groceries	Shopping
Total Making Trip	44	29	109	80	148	242	164
Percent Making Trip	15%	10%	37%	27%	50%	81%	55%

Again only considering respondents who said they will likely use public transportation if provided, the most popular service was transit within DeSoto. While service for the elderly was mentioned less frequently, it remained a very popular second and third choice. This suggests that, while commuter based regional transit is popular, local service also enjoys support.

Table 22 Ranked Choice of Transit Service Alternatives – Likely Users Only

	First Choice	Second Choice	Third Choice	Weighted Average
Transit within DeSoto	82	55	40	396
Express to DART P&R	42	67	83	343
Carpool	47	62	48	313
Express service	55	50	37	302
Service for Elderly	42	56	54	292
Vanpool	41	27	32	209
Park & Ride	8	18	25	85
No transit need	4	7	21	47

Strategies for Further Consideration

The same five strategies that were identified for local commuters in the previous section are also applicable to shopping services. Both dial-a-ride and subsidized taxi services are likely more appropriate for shopping trips and shopping would likely constitute the overwhelming majority of trip purposes if these services were implemented.

Local Transport for Persons with Disabilities/Seniors

Persons with disabilities often have major problems arranging for basic transportation. Their disability can affect where they live, whether they can participate in the workforce, and the quality of their lives. The nature and severity of individual disabilities varies greatly and can affect people of all ages. Some people find they are able to lead an independent life on some days and are severely incapacitated on others. As DeSoto's population ages, these issues will only grow more significantly.

Interest in Public Transportation

Both representatives for the DeSoto Senior Center and the DeSoto Food Pantry noted that some of their clientele experience transportation challenges related to the lack of a public transportation system. The center typically provides a means of transportation before noon and typically as a part of a group activity, such as trips to Wal-Mart or the movies. While the Senior Center has a shuttle to transport seniors to and from their facility, many clients experience problems getting to personal doctor appointments at the Methodist Hospital, the Veterans Administration, and Baylor hospitals.[24]

The Food Pantry provides lifeline food distributions three days a week. Many recipients come as part of a larger group, and depend on friends or acquaintances for transportation. According to the Executive Director of the Food Pantry, "50-75 people would benefit instantly if public transportation is provided."

Strategies for Further Consideration

Each of the strategies mentioned in previous sections have applications for the disabled community. Circulator routes, dial-a-ride services, and taxi subsidy programs all have proven appeal to some disabled patrons. Two additional strategies – Volunteer driver/escort programs and coordinated community transportation programs – are especially suited to serving the disabled community.

1. Volunteer driver and escort programs can take advantage of the power of volunteerism to assist people in getting out of their homes for shopping, medical, and recreational outlets. A big part of these efforts is the recruiting, vetting, training, and coordination of volunteers. In its capacity as a local point of contact, the City may be the organization best suited to matching persons who need transportation assistance with people who can help. (Cost – Low, Market Potential – Low)
2. Following in this direction, DeSoto might serve to coordinate the activities of churches, social service agencies, and individuals who are acting to assist in disabled transportation issues. For example, if a social service agency is providing routine medical transportation to their clients, DeSoto might act as a clearing house to help other needy individuals secure an unused seat. These activities often increase the effectiveness of local providers at little or no added public cost. (Cost – Low, Market Potential – Low)

Youth Transportation

In an era of latchkey kids living in residential suburban neighborhoods, many efforts to provide meaningful after school activities are thwarted by a lack of realistic transportation services. Even when a parent is around, getting the kids to and from the recreation center or football game often means busy parents providing taxi services. Well-designed public transportation services may help address this emerging problem. Many transit systems note that a prime afternoon market is school age children going to the mall, gymnasium, movie theater, or a friend's house.

This alternative is not intended to create school bus services, Rather it only focuses on transporting school-age children to after-school and weekend activities, as well as considering access to local colleges. The Dallas County Community College District has numerous campuses throughout the Greater Dallas region, all of which are potential destination for DeSoto residents, especially Cedar Valley and Mountain

[24] From stakeholder interview with the Food Pantry's executive director.

View. In addition, the new University of North Texas campus is just northeast of DeSoto and will provide expanded educational opportunities as it grows – especially with the planned expansion of DART onto the college's campus in 2018.

Interest in Public Transportation

While they face transportation challenges, the level of need for transportation services directed toward school age children identified by stakeholders was somewhat less than for other groups.

- The DeSoto ISD provides bus service for children who live more than two miles from school but those living closer sometimes do experience challenges getting to and from school. This appears to be managed through informal carpools. Also, some parents have difficulty getting children to and from extracurricular events.
- The recreational center noted that students occasionally have problems accessing activities. Again, they seem to manage through carpools and it does not appear to be a major problem.

Strategies for Further Consideration

While many transportation agencies find that local colleges and universities provide a ready market for their services, DART already serves the major institutions. An initial strategy for DeSoto may be to provide services that connect with the DART routes that serve college campuses. DART Route 415 serves the University of North Texas, while Route 553 serves the Cedar Valley College. Because it operates along Wheatland, providing connections to Route 415 would be relatively easy.

A community circulator service, such as the one described in the local commuter section, is likely the single transportation service with the potential to attract significant youth ridership. Because connections to Route 515 (getting to Cedar Valley College) would be difficult, any shuttle service may find it easier to include the community college in its service area.

Airport Transportation

A large number of survey respondents expressed interest in public transportation services that link the city with Love Field and DFW Airport. TRE commuter rail services provide a link today from Dallas. Travelers can board at the downtown Dallas Union Station traveling to the Airport Station Monday through Saturday. From there a free Remote South shuttle bus service provides continuous connections between the station and airline terminals. Buses depart the station approximately every 15 minutes. This would require a DeSoto resident to somehow get to a DART station, board a DART bus or train, transfer again at Union Station, and then transfer a third time at the Airport Station, finally lugging any bags into the airport terminal itself. It would be surprising if any DeSoto resident attempts this ordeal.

Interest in Public Transportation

While a relatively small number of DeSoto residents work in the vicinity of DFW, it was identified as one of the best locations for the operation of future public transportation services. Like many communities, we suspect that the cost and inconvenience of getting to the airport sticks in peoples' minds, even when they make the trip only occasionally. Still, that does not mean that a service to either DFW or Love Field that is operated solely for DeSoto residents, or even residents of the broader Best Southwest area, would be economically viable. This may be a case where private sector initiatives provide the best alternative to airport parking.

Chapter 6. Overall Assessment of Need and Recommendations

The central question this chapter addresses is whether any of the strategies discussed in the previous chapter have the potential to effectively address the transportation issues facing DeSoto. This is not a simple question. DeSoto is a suburban community that has built quality lifestyles for its residents by integrating rural features with proximity to major freeway corridors and regional shopping outlets. The community relies on flexible auto travel to knit these features together. Traditional transit solutions, which rely on combining a mix of land use patterns into compact communities, are not well suited to DeSoto's current environment.

Anticipating these issues, the project work plan included an evaluation stage, where community development patterns, travel habits, and attitudes were considered to ascertain whether there is a sufficient market for public transportation to justify further effort in developing a specific service proposal. This chapter considers that question. If there is a sufficient market for public transportation, specific service options could be developed. If not, the issue of public transportation in DeSoto could be set aside for consideration at a future time.

The following sections summarize the basis for the evaluation and a recommendation.

Evaluation Criteria

Building off the results of the survey effort and stakeholder interviews, the project team developed a group of factors that affect the viability of alternative service concepts. The first six criteria consider how effectively a strategy addresses community needs that were identified in previous chapters.

1. Regional Commuters
2. Local Commuters
3. Local Shopping
4. Local Transport for Persons with Disabilities/Seniors
5. Youth Transportation
6. Airport Transportation

Together, these summarize the trip purposes that were identified by stakeholders and survey respondents throughout the project.

Six additional evaluation criteria were included to address issues of concern to stakeholders, survey respondents, and the City.

1. **Community Support -** Does the service respond to community comments and concerns addressing the specific travel needs identified by survey respondents and stakeholders? Is there significant opposition to the alternative? Answers to standardized questions and written comments were both considered.
2. **Ridership Potential -** Does the proposed service appear to have the potential to transport significant numbers of DeSoto residents? This is a measure of overall impact and considers whether a measure will make significant progress in addressing the transportation needs outlined by survey respondents.

3. **Total Cost** - Are the alternative's capital and operating costs within the city's financial capabilities?
4. **Cost per Rider** - This is a measure of efficiency, relating the service costs considered in the previous measure against the ridership potential. It addresses the City's desire to provide cost-effective services. This considers the amount of public support that would be needed.
5. **Implementation Issues** - Are there significant implementation issues involved in the alternative? This could include required new legislation, coordination with other jurisdictions, or unproven technologies.
6. **Timeframe** – Several stakeholders noted the immediate and near-term need for improved public transportation services. This considers the implementation timeframe for individual users. Can the alternative be implemented in a timely manner?

Figure 22 summarizes the scoring for each of the alternatives considered. The next section discusses the alternatives in more detail. Each alternative service concept was evaluated on the basis of each measure using a scale awarding 0-5 points. If a service concept does not respond effectively to a measure it was awarded 0-1 points. If it responds marginally, it was awarded 2-3 points. Alternatives that nearly or fully respond were awarded 4-5 points. This was a subjective evaluation. It was not intended to settle on a 'best' service model but to identity models that likely do not merit further attention at this time. That process was completed through a fatal flaw analysis, which considered three conditions that likely make a service less feasible:

- It is beyond the financial capacity of the community to construct or operate.
- It will not promote a market of sufficient size to justify the cost of providing the service.
- It faces significant opposition from a large segment of the community.

The end result of the fatal flaw analysis divided potential service alternatives into two groups, service strategies with potential for Desoto and service strategies not considered to have potential for DeSoto, at least at the time of this evaluation.

Figure 22 Service Alternatives Scoring Summary

	Serves the Needs of this Group												
	Regional Commuters	Local Commuters	Local Shopping	Persons with Disabilities	Youth	Airport	Community Support	Ridership Potential	Total Cost	Cost per Rider	Implementation Issues	Timeframe	Score
Strategies with Potential for DeSoto													
Community Circulators	↓	→	↑	→	↑	↓	↑	→	→	→	→	↑	31
Carpooling	↑	→	↓	↓	↓	→	↑	→	↑	↑	→	↑	30
Business District Shuttles	↓	→	↑	→	→	↓	↑	→	→	→	→	↑	27
Deviated Fixed-Route	↓	→	↑	↑	→	↓	→	→	→	→	→	↑	27
Park and Ride Facilities/DART Subsidy	↑	↓	↓	→	↓	→	→	↑	→	↑	↓	→	27
Volunteer Driver/Escort Programs	↓	↓	→	↑	↓	→	↑	↓	↑	↑	→	↑	26
Taxi Subsidy	↓	↓	→	↑	→	↓	↑	↓	↑	→	→	↑	25
Coordinated Community Transportation	↓	↓	↓	↑	↓	↓	↑	→	↑	↑	→	→	23
Dial-a-Ride	↓	↓	→	↑	→	↓	↑	↓	→	↓	→	↑	21
Vanpool Services	↑	↓	↓	→	↓	↓	→	→	→	↑	→	→	21
Strategies Not Considered to Have Potential for DeSoto													
Local Bus	↓	↑	↑	↑	↑	↓	↓	→	↓	→	↓	→	25
Express Bus Operated by DeSoto	↑	↓	↓	→	↓	↑	→	→	↓	→	↓	→	21
Light Rail	↑	→	→	→	→	↑	↓	↑	↓	↓	↓	↓	20
Bus Rapid Transit	↑	→	→	→	→	→	↓	↑	↓	→	↓	↓	20
Commuter Rail	↑	↓	↓	→	↓	→	→	↑	↓	↓	↓	↓	19
Shuttle to DART Stations	↑	↓	↓	→	↓	↓	→	↓	→	↓	→	↓	18
Commuter Shuttle	↓	↓	↓	→	↓	↓	→	↓	→	↓	→	↑	12
Dynamic Ridesharing	→	→	↓	↓	↓	→	→	↓	→	↓	↓	↓	10
Taxi Sharing	↓	↓	→	→	↓	→	→	↓	→	↓	↓	↓	10

Scoring: Each scoring factor was assigned based upon the expected impacts on DeSoto and its residents. Scores range from 0-5. Scores with 0 or 1 were considered deficient in that category. Scores of 2-3 means that there would be some benefit. Scores of 4-5 suggest there would be significant benefit. Ridership potential, cost per rider, and community opposition were assigned double weight.

High Benefit Strategy ↑

Moderate Benefit Strategy →

Low Benefit Strategy ↓

Recommended Services and Hypothetical Staging Plan

This section provides a summary overview as to whether there is enough support and potential for the initiation of public transportation services in DeSoto that might encourage a City decision to engage in further planning efforts.

In summary, there does appear to be a market for public transportation in DeSoto that justifies the City's involvement. What's more, community needs will very likely grow in the future as DeSoto's residents age. In the first chapter, five questions were raised. Based upon the research conducted to date, this study offers the following conclusions to those questions.

1. **What level of need for public transportation exists within the city?**

   There is a small but growing need for public transportation, Commuters worried about the high price of gas, seniors who are no longer comfortable driving, and people without a car all expressed interest in the establishment of some type of public transportation service.

2. **What is the current level of community support for public transportation in DeSoto? Is it considered a funding priority by local citizens?**

   While it does not appear to be a top priority for a significant segment of the community, the support for establishment of such services is fairly broad-based. Another segment of the community opposes such services, either because of anticipated cost or community impacts.

3. **What types of public transportation services will best satisfy community transportation needs?**

   This chapter addresses this question. Two specific needs are most apparent:

   - **Providing transportation options in and around the Best Southwest cities for individuals without access to an automobile.** This group represents the classic transit dependent population who, because of infirmity or economic condition, are not able to drive. Transit dependency is often not a permanent condition. A young couple starting out together may only be able to afford one car, leaving one partner without transportation during work hours. For such people, public transportation provides a bridge until better economic times come along.
   - **Providing commute alternatives to other parts of the Dallas region.** DeSoto is a city of long distance commuters. A large proportion of residents travel to jobs located north of downtown Dallas. This puts a strain on people's time and pocketbooks and survey results clearly point to a large group of residents who would like relief. That said, commuter transportation services tend to be very expensive and little public benefit would be served by duplicating existing DART services. The challenge will be to design services that provide commute options for people who are not well served by DART and other regional carriers today.

4. **Do these services have the potential to operate in a cost-effective manner?**

   Traditional transit services would likely prove prohibitively expensive but smaller scale community based services do have the potential to meet a variety of community needs without incurring excessive costs.

5. **Should DeSoto proceed with the development of a public transportation system? Which service models should be pursued?**

A staged implementation of public transportation services is appropriate. The City should start small, focusing on low-cost strategies and expand as warranted by demand.

Following is a sample staging plan that can be adjusted and refined during subsequent project phases. It is provided to illustrate the way that future public transportation services could be implemented over time, allowing the City to gauge public acceptance before moving to more intensive transportation solutions.

Phase 1 – Near Term Measures

In the near term, DeSoto would focus on addressing the two transportation needs most often addressed in the surveys: the lack of local mobility for people without access to an auto and the provision of commute alternatives. Initially, these efforts would focus on low-cost targeted measures that will help City staff members build an understanding of transportation issues and better assess the total levels of demand.

1. **Provide carpool matching assistance to DeSoto residents**. Several organizations provide carpool matching assistance in the Dallas/Fort Worth area but none focus specifically on DeSoto. The City would construct a database of local residents and help to match them with other partners. The City would closely coordinate with the Tryparking.com effort hosted by NCTCOG. The City's involvement would include marketing of the program, staffing the carpool matching service, coordinating with other ridematch organizations, and maintaining/updating the local database. This was the highest scoring alternative because it is relatively low-cost and can be implemented quickly. It was also the third most suggested transportation option suggested by likely users (See Figure 22).
2. **Provide vanpool matching assistance**. Vanpool matching is a logical supplement to the carpool matching program, although it did not gather the same sort of support as the carpool program. We suspect that fewer people are familiar with the concept. The City would market the program, assist people interested in the formation of vanpools and provide overnight storage of vans when drivers do not have room at their home. The City would not own or operate vanpools of its own.
3. **Initiate a taxi subsidy program**. DeSoto is currently not served by a taxi service. This is one primary cause of residents' isolation if no auto is available. To create a viable market for a local provider, the City would subsidize taxi service that transports at-risk individuals. This would be far less expensive than the cost of operating a transit service and would help the City gauge the actual level of demand for improved public transportation services. While not identified during the survey or by stakeholders, the initiation of taxi service would pave the way for more intensive future transit services.
4. **Volunteer driver program**. One travel need that stands out in the stakeholder interviews is the provision of transportation to/from doctor appointments, often at medical facilities distant from DeSoto. The City would work with the senior center and other service providers to develop a database of willing volunteers who will transport elderly and disabled residents to medical appointments.
5. **Begin coordination with DART**. As noted above, DART services end at DeSoto's city limits. Many respondents express support for the extension of DART into the city while others strongly objected to the concept. As a practical matter, no mechanism currently exists for the initiation of any type of service operated by DART inside the city limits. While the initiation of DART service

into DeSoto may be years away, any successful public transportation effort that DeSoto undertakes will benefit from the active cooperation of DART.

Even if the City takes no other action in the near term, it should begin discussions with DART. Initial discussions should focus on the following topics:

- Coordination of DeSoto's vanpool and rideshare efforts with the broader regional programs.
- Opening discussions about the construction of park and ride facilities that are designed to better serve DeSoto residents. These discussions will pave the way for Phase 2 strategies.

These five initiatives would pave the way and help judge levels of demand for the services that would be initiated during subsequent project phases.

Phase 2 – Intermediate Term

The Phase 1 improvements would likely take about two years to complete. At that point the City could transition into the second phase, which would build on those earlier changes. Three initiatives would be undertaken during this phase.

1. **Begin a startup shuttle service**. While reactions to any extension of DART service were mixed, there was much broader support for the operation of local transit services that are not part of the DART system. Likely riders rated this as their highest priority (Refer to Figure 22) and people who said they would not use the service were generally supportive. The service toolbox contains four different models for a local shuttle ranging from dial-a-ride service to deviated fixed-route service. Many communities actually move from one service model to another as a service matures and that would likely be appropriate for DeSoto. Whatever service design is adopted, it would be designed to link local residential neighborhoods with activity centers including grocery stores, community centers, and retail outlets.
2. **Begin a DeSoto park-and-ride lot**. The second most popular improvement that was identified during the survey process was the construction of a park-and-ride lot that can be conveniently accessed by DeSoto residents. This would be a complex project. The facility's location, funding, and operations would all need to be determined. Ideally, the lot would be served by DART, providing express connections to major employment locations. The coordination with DART that began in Phase 1 would facilitate this project.
3. **Expand the City's role in coordinating local transportation.** The connection with local community groups, senior care providers, and social service agencies would put the City in an ideal position to coordinate their various transportation facilities. For example, if two different retirement communities offer shopping shuttles, each to its own residents, they may be able to save resources and provide more choices of destinations to residents by pooling their efforts. Similarly, DeSoto could facilitate the larger regional coordinated transportation efforts that are working to coordinate the efforts of various social service agencies.

Phase 3 – Longer Term

By the end of Phase 2, which would likely take several years to accomplish, the City would have a comprehensive public transportation program that includes local services linking residential neighborhoods with community activity centers, access to regional express bus services, expanded

carpooling and rideshare efforts, local taxi service, and an active transportation management program. Phase 3 would focus on expanding these programs to meet the city's growing needs.

Most significantly, the local services that began operation during the previous phase would need to be evaluated and adjusted to address actual demands. If these services evolve into a fixed-route service, it might be necessary to implement complementary paratransit service that addresses the needs of people with disabilities who are not able to utilize the fixed-route service.

A key question the City would face during Phase 3 and beyond is whether DART services should be extended inside the city. As noted several times previously, because DeSoto is not part of the DART taxing area today, there is no mechanism for directly extending regular DART service into DeSoto. Conceivably, this could be accomplished, either by annexing into DART or contracting with the system for requested services. In either case, DeSoto's relatively low population densities would likely make DART services relatively uneconomical. However, continued focus on developing dense mixed-use nodes could facilitate this as a future possibility.

Services Not Recommended for DeSoto

A number of potential service improvements are not recommended. This section briefly summarizes the fatal flaws that led to their exclusion from the listing of recommended improvements.

- **Local bus service operated by the City**. At least for the next five to ten years, the cost of operating fixed route local bus service would likely not be justified by the patronage. Residential densities throughout DeSoto are at the very bottom end of those needed to support any sort of fixed-route bus service. To conform to requirements of the Americans with Disabilities Act, DeSoto would also need to provide for complementary paratransit service, further increasing operating costs. Additionally, a number of survey comments specifically objected to fixed-route service, especially if operated by DART. Any implementation would be both costly and controversial.
- **Express bus service operated by the City**. While express bus service is one of the most popular services in the toolbox, any new services should not be operated by DeSoto acting on its own. Regional bus services demand regional coordination efforts that would severely tax city staff and it is highly unlikely that even downtown Dallas would generate a viable market if only DeSoto residents are included. A better strategy is to partner with DART and the other BSW cities to see that regional services more fully accommodate DeSoto residents.
- **Commuter rail, light rail, and bus rapid transit**. These are all capital intensive regional transportation solutions that are clearly beyond DeSoto's funding capabilities. NCTCOG has performed initial alignment studies for two possible rail corridors in the DeSoto area. These are discussed more fully in the existing conditions report.
- **Shuttle service to DART stations**. This idea, which was originally raised by city staff members, would initiate a shuttle service from DeSoto to either the Westmoreland or Ledbetter DART stations, where riders could transfer to light rail services. It is an intriguing suggestion but does not appear to possess enough market potential to be economically viable. The park-and-ride lots at both stations are usually far below capacity. Today, DeSoto residents can simply drive to those facilities and park next to the train station. Recognizing that most DeSoto residents do not live within convenient walking distance of any likely shuttle route, if shuttle service is provided the

City would need to provide collection points where people could leave their car and ride the shuttle to DART. This raises the question of why not just drive to the station and save a transfer. Finally, few people suggested this sort of service when answering the survey, suggesting it is not widely desired within the community.

- **Commuter shuttle to local employers**. This alternative would link the closest DART bus stops with local employers, possibly complementing the DART shuttle discussed above. If DeSoto's employment base continues to grow, this sort of shuttle may become feasible. However, a less expensive approach would likely entail the extension of DART bus services to those employment sites.
- **Dynamic ridesharing and taxi sharing**. While in common use in some other communities, these two concepts are new enough in the Dallas-Fort Worth area that they would likely need considerable public education. Also, both depend on relatively large bases of participants in order to succeed. On its own, DeSoto is not a large enough community to make either concept successful.

Chapter 7. Case Studies and Application in DeSoto

Each of the service alternatives outlined in the sample staging plan in Chapter 6 are currently in use somewhere in the DFW region. The following section will highlight local examples of each approach. Some examples are specific to a city or institution, while others are regional efforts. The site-specific examples can serve as models for the City of DeSoto, while the regional efforts are meant to highlight existing initiatives that DeSoto can either sign onto or simply promote more actively. Each service alternative gives an outline of that that alternative could be applied in DeSoto. Finally, there is a cost summary and a "lessons learned" summary provided as a decision-making tool for the City.

Carpool Matching

As mentioned previously, the primary carpool matching service in the DFW region is "Try Parking It" developed by the North Central Texas Council of Governments (NCTCOG). Try Parking It allows users to locate carpool (or vanpool) matches within the region. After creating a profile that includes their home and employment locations, the website will present individuals with rideshare matches. Additionally, employers can register with the site and thereby assess travel reduction programs. The website counts miles not driven by individuals, employers, and the region as a motivational tool.

According to the North Central Texas Council of Governments, there are 35 active ridematch profiles in DeSoto. This means that 35 DeSoto residents have already registered on the Try Parking It website in search or carpool partners or available vanpool seats. While this number is relatively low, it does show that there is an interest among DeSoto residents for alternative commuting solutions.

The NCTCOG has reached out to major employers in the region to spread the word about Try Parking It, and it is likely that most of the DeSoto participants heard about the program through their employers. However, the City of DeSoto can help increase awareness of the program, which has no long-term budgetary impact on the city, at little or no cost. Promotional initiatives can include information on the city's website and "City Lights" newsletter, as well as the invitation of NCTCOG staff to attend city-wide events where the program can be promoted to a wide audience.

Vanpool Matching

Three vanpool services operate in the DFW region; DART, the Fort Worth T, and the Denton County Transportation Authority all offer vans to commuters who either live or work within their respective service areas. All three agencies have staff assigned to assisting prospective vanpool participants to organize or join an existing vanpool. These efforts are complemented by the NCTCOG's Try Parking It program which is described above.

There are currently 11 active vanpools that originate in DeSoto every weekday. These vanpools serve destinations as diverse as Dallas, Fort Worth, Coppell, Irving, Plano, Richardson, and Westlake. The costs of vanpool service are shared by the participants themselves, with limited subsidies from the regional transit authorities as well. Thus, the more participants there are per vanpool (up to a maximum of 15), the lower the cost is for each member. For example, the current subsidized rate for a DART vanpool is $350 per month, plus the cost of fuel. With 10 participants, the estimated monthly cost per passenger (including fuel) is $38.89, while 15 participants would be expected to pay $25 per person per month.

As with carpool matching, the City of DeSoto can increase awareness of vanpool service for little or no cost. The service can be promoted through the city's newsletter and website, and city staff can work closely with local employers and the vanpool coordinators of the regional transit authorities to help facilitate the vanpool matching program.

Taxi Subsidies

At the moment, there is only one municipal taxi subsidy program in the region: Plano's Senior Rides Program. While Plano is a DART member city, DART's fixed route bus service only covers about 60% of the city. DART has plans for expand service in Plano in mid-2012, but until that time, DART has agreed to fund a taxi subsidy program for Plano seniors who lack "transportation support" (i.e., who do not live in close proximity to fixed-route transit service, who do not have access to other services, who can use taxis, and who cannot afford private-for-hire services). This program began in 2008, with Yellow Cab as the program partner. The Geriatric Wellness Center of Collins County, located in Plano, manages the program.

Eligible seniors purchase books of ten $1.00 tickets for $2.50 per book. A maximum of 10 books may be purchased per month. Each ticket has a face value of $1.00. Thus, a senior buying a book of tickets pays $0.25 for each $1.00 ticket. The remaining $0.75 is subsidized by DART. The City of Plano does not participate in this subsidy per se, noting again that they are a DART member city. A senior may use any number of tickets (and cash) against the meter fare. Trips are restricted to destinations within the city, except for medical trips, which are permitted beyond the city boundary. Tickets expire 90 days after they are issued. Tickets cannot be used for tipping.

The annual budget for Plano's Senior Ride Program is $50,000 per year. Half of that budget goes to administrative labor and direct expenses. The other half goes to the subsidy. Thus $25,000 equates to over $33,000 of service (as the passenger's contribute $.25 for every subsidy dollar).

In 2009/2010, 1,900 taxi trips were taken by 80 individuals. The average meter fare per trip was $13.00. In the first half the current fiscal year, 17,030 $1.00 tickets were issued, and 12,335 were used by 57 individuals who used the service, including 14 "new" users. The top three destinations were medical (45%), shopping (26%) and the Plano Senior Center (10%).

A similar taxi subsidy program could be implemented in DeSoto as either a stand-alone program or in collaboration with the other Best Southwest cities. Ticket books could be sold in every BSW city and at the end of each month, the cities would be billed for the portion of eligible trips taken by their respective residents. A collaborative program would have the benefit of spreading the administrative cost out over multiple cities, while DeSoto or one of the other BSW cities could provide the administrative staff. Alternately, the administrative staff could be provided on-contract by DART. This scenario is discussed in more detail in the "Begin Coordination with DART" section below. However, a very significant challenge for a taxi subsidy program in DeSoto is guaranteeing enough volume to get a taxi operator interested in providing service in DeSoto or the BSW cities. Presently, taxis will provide service into DeSoto from DFW Airport or downtown Dallas, but there is insufficient market for them to stage a cab in town. Consequently calls for cab service are often not met with convenient scheduling. If this program is desired, the City will need to work closely with taxi companies to ensure there is reasonable availability of service.

Volunteer Driver Program

In northwest Dallas County, the cities of Addison, Carrolton, Coppell, and Farmers Branch jointly fund a non-profit organization called Senior Adult Services, which provides a number of supportive services to senior and disabled residents, including home delivery of meals and transportation for medical and social appointments. Together, these cities are known as the Metrocrest cities, an arrangement similar to the Best Southwest Cities in southern Dallas County.

Senior Adult Services provides around 4,000 one-way trips per year to about 250 unique individuals who are registered with the program. These trips are provided using a combination of one wheelchair accessible van, and more than 30 volunteer drivers providing their own vehicles. In both cases, passengers are billed for their trip after the fact, and fares range from $2 to $5 depending on the income of the passenger. 30% of trips are provided by volunteer drivers.

The Senior Adult Services transportation program has an annual cost of around $80,000, and annual revenue of about $18,000. The cost of the program includes one full-time driver and two part-time drivers. A portion of the hours of the agency's Financial Director and Program Coordinator go toward supporting the program as well. Costs would be lower with an all-volunteer driver pool ($20,000 annually), but volunteer drivers rarely have wheelchair accessible vehicles, which are critical for some clients.

While revenues do not cover costs for the Senior Adult Services transportation program, the agency is subsidized by the Metrocrest cities, TxDOT, and private donations. The Metrocrest cities provide about half of Senior Adult Services' operating budget, and each city's contribution is proportionate to its size. The transportation program is only one of a number of services offered by Senior Adult Services, and the total annual contribution of the four cities for all services is $300,000 (ranging from $17,000 from Addison to $140,000 from Carrolton).

Senior Adult Services has been serving the four Metrocrest cities for more than 30 years, and the agency's Executive Director has expressed interest in providing similar services to other cities (or groups of cities) in the DFW area. The existing relationship that DeSoto has with the other Best Southwest cities creates a particularly good opportunity to either directly contract with Senior Adult Services for supportive services for seniors and disabled residents or to model an similar program after the experience of Senior Adult Services.

With DeSoto's recent purchased of two Senior Center vans (at $62,000 each), the implementation of a volunteer driver program similar to the one employed by Senior Adult Services (a mix of vans and personal automobiles) is quite feasible. However, the funding received by the City of DeSoto for the current service is specifically earmarked for access to senior services and cannot be used for general public transportation needs or other senior transportation needs not related to the senior center such as shopping or medical trips.

The current service operates about 9,000 miles per year on about 1,500 gallons of fuel, which suggests there is room to expand the usage of these vehicles without substantial degradation to their longevity. If a secondary funding source can be identified, the vans could be put into service for other trip types when they are not being used to transport DeSoto's seniors between their homes and the Senior Center.

DART Coordination

Since the start of the Transit Needs Assessment Study, two significant policy and organizational changes, with direct implications for the City of DeSoto, have taken place at DART.

In April of 2011, the DART Board approved a modification to its long-standing policy of prohibiting the agency from contracting with non-member cities for any service other than commuter rail. The revised policy now allows DART to contract with non-member cities for express bus service in addition to the previously permitted commuter rail service. Soon after this change, several cities in the region, including Allen, McKinney, and Mesquite began discussions with DART on possible service contracts to link the respective cities to their nearest DART light rail stations.

Since non-member cities do not contribute any sales tax revenue to DART, contracted service will be structured in such a way as to allow DART to recover all service costs, including direct operating costs, overhead, general and administrative expenses, and the local share of capital costs for the buses used. For FY2012, the expected operating cost formula will be $33.92/hour plus $2.05/mile (or roughly $140,000 per year). In addition, all fares generated on the service will be kept by DART as "impact fees" associated with the impact of new connecting passengers on the rest of the DART network. Non-member cities may also need to make infrastructure investments such as bus stops signs, shelters, benches, trash receptacles, and parking facility upgrades to support the introduction of purchased transit service. Depending on the level of amenities that each city chooses to provide, transit-supportive infrastructure would be expected to range from $20,000 to $40,000.

Planning is currently under way for Mesquite to become the first "non-member" city to receive DART bus service under the parameters of the new DART Board policy. Express service between an interim park & ride at Mesquite's Handby Stadium and DART's Lawnview Station is set to begin in November 2011.

The second significant change at DART is the recent transformation of the agency's Paratransit Services Department into a more broadly focused Mobility Management Services Department. This new organizational structure is designed to provide greater flexibility for responding to ridership demand, including the growing demand for non-ADA demand-responsive service, both inside and outside the DART service area. As part of this transformation, the Mobility Management Services Department is in the process of developing five demonstration projects aimed at increasing ridership and productivity; creating new revenue streams and economies of scale; and facilitating regional coordination. These projects are still in the early stages of development, but the types of projects being considered include:

- Purchase of Service Agreements in which State agencies or neighboring communities purchase human services transportation through DART.
- In this demonstration project, local community transportation services can be offered through innovative partnerships between DART and non-member cities. This partnering is achieved through a form of purchase of service agreement that enables DART and a local municipality to co-sponsor a transportation service. Specific arrangements will vary depending on the needs of the local community, but a generic example would be for DART to provide a vehicle along with ongoing maintenance, fuel, and insurance. The City would provide a driver. Together, DART and the City would develop an appropriate marketing scheme and service plan. BSW cities have been identified as good candidates for this project.
- DART-managed taxi subsidy or flex voucher program, which would provide eligible participants with subsidies to pay for taxi trips or other specialized transportation services. For residents of

DART member cities, subsidy funding would be provided by DART, while non-member cities would provide subsidy funding for trips taken by their own eligible residents.

- Coordinated grant writing to leverage more funds and help address the chronic limited funding facing most cities and human services organizations. Cities and nonprofit organizations often receive different sources of state and federal funding that could be used as "match" to leverage more money while limiting the municipal or nonprofit's contribution. By coordinating grant writing efforts, all of the participants could benefit through a reduction in work duplication, higher quality proposals and more strategically leveraged funding.
- DART-managed vehicle sharing programs, in which several organizations make their vehicles available to others, but still retain ownership of their vehicles, or in which one agency or organization owns a fleet of vehicles and makes them available to multiple organizations.
- Cooperative purchasing agreements, where organizations that operate service are able to take advantage of economies of scale to procure vehicles, parts, and services such as maintenance, fuel, and even insurance at a reduced cost.
- Develop a one-stop access point to provide an online central repository of information on community transportation services, linking with existing databases that the North Central Texas Council of Governments and the Community Transportation Network maintain. Complementing these online resources would a telephone number that people can call for information or referrals.

These demonstration projects, along with the policy changes regarding contracted express bus service may present new opportunities for DeSoto to consider in the near to medium term. It is particularly important for DeSoto staff to stay engaged and keep lines of communication open with DART staff and other BSW cities at this transformative time in the evolution of regional transit.

In the long term, another DART policy change which took place some time ago, but may not have been sufficiently publicized, could allow DeSoto to become a full DART member-city if there were to be community interest in doing so.

In April 2002, the DART Board adopted a new policy regarding the admission of new cities into the transit authority. Prior to April 2002, non-member cities wishing to join DART were required to impose a 1-cent sales tax to fund transit in their community and pay an “initiation fee” equivalent to all the taxes that would have been collected in the city had the city joined DART at its inception in 1983. The 2002 policy change eliminated the initiation fee for new cities, meaning that voter support and sales tax assessment capacity would be the primary requirements for DeSoto to meet if the city wished to join DART one day.

Startup Shuttle Service

Two communities in Dallas County operate their own municipal transit services: Mesquite and Grand Prairie. Both systems are designed to provide curb-to-curb demand-responsive service for seniors and residents with disabilities.

Grand Connection

The city of Grand Prairie (population 175,396) has a fleet of 12 transit vehicles, including 9 cut-away buses and 3 wheelchair accessible vans that are used for a curb-to-curb paratransit service called Grand Connection. The service is available on Mondays, Wednesdays, and Fridays between 4:00 a.m. and 5:00

p.m. and on Tuesdays and Thursdays between 7:00 a.m. and 5:00 p.m. for city resident who are 60 years of age or older or have a physical or mental disability. Trips are provided primarily within the City of Grand Prairie, but trips to Arlington medical facilities as well as rail stations and the VA Medical Center in Dallas are also permitted.

$1 fares are charged for each one-way segment of shopping, school, or work trips. There is no charge for medical or dental trips or for trips to the Dallas County Health and Human Services Nutrition Program. Trips must be scheduled two days in advance, but "subscriptions" are permitted for recurring trips (meaning passengers only have to call in if they are not making the recurring trip). 83% of trips are currently subscription trips.

46,000 trips are provided per year on Grand Connection. This represents 2,300 unique individuals. 10 employees are needed to maintain the service, including 7 drivers, 2 dispatchers, and 1 program coordinator.

The annual budget for Grand Connection is $600,000. Operating expenses are split as follows: 50% FTA funding, 25% state grants, and 25% city funding. Federal funds cover 80% of capital costs, while the state picks up 13%, and 7% is funded by the city. The replacement cost for Grand Connection buses is estimated to be $71,000 per vehicle.

Mesquite Transportation for Elderly and Disabled (MTED)

MTED provides curb-to-curb service in the City of Mesquite (population 139,824) with a fleet of 11 cut-away buses, including three that are wheelchair accessible. MTED service is available to Mesquite residents who are at least 60 years of age or have a physical or mental disability. The service operates on weekdays only, from 6:00 a.m. and 6:00 p.m. Medical and non-medical trips are permitted within the City of Mesquite. Medical trips are also permitted to the neighboring cities of Balch Springs, Dallas, Garland, Seagoville, and Sunnyvale.

$1 fares are charged for each one-way trip segment. 12-ride ticket booklets are also available for $10. Trips can be scheduled at any time, but passengers are encouraged to schedule them as far in advance as possible. Subscription service for recurring trips is also available.

40,000 trips per year, representing 400 unique individuals, are provided by MTED. 13 employees, including 11 drivers, 1 dispatcher, and 1 program coordinator maintain the MTED service.

The City of Mesquite funds roughly half of the $650,000 operating budget of MTED, with the rest funded through FTA's 5307 grant program. When vehicles are replaced, 80% of the cost is usually funded through FTA's 5310 grant. The replacement cost for MTED vehicles is estimated to be $60,000.

Open Park-and-Ride Lot

As mentioned previously, the City of Mesquite has recently entered into a purchase of service agreement with DART for an express shuttle from the Mesquite Independent School District's Handby Stadium to DART's Lawnview Station. Service is set to begin in November 2011. In preparation for the service, the City has entered into an inter-local agreement with the school district on the use of 207 parking spaces at the stadium for commuter parking.

In addition, the City plans to install passenger amenities at the site, including an 8 ft. by 24 ft. passenger shelter, a bicycle rack, a trash receptacle, and a security camera. Some sidewalk improvements will also be required to bring the site up to ADA standards. In total, the estimated capital cost for the upgrades are

expected to be in the range of $30,000 to $40,000. Operating costs will be rolled into the on-going functions of the Parks & Recreation and Police Departments, with the former responsible for cleaning and maintenance, and the latter for security.

Expand the City's Role in Coordinating Local Transportation

Besides the highly visible public transportation authorities that serve the DFW region, there are dozens of other, less known transportation providers available to area residents. Some of these are private operators such as taxis or door-to-door van services, some are non-profits such as the American Cancer Society, and some are government agencies such as the Dallas County Health and Human Services Older Adult Services Program. Many of these transportation options are available to DeSoto residents, but there are a wide variety of eligibility requirements, pricing options, and other service parameters that affect prospective passengers.

The City of DeSoto could take a number of steps to assist residents in sorting through the many options that may be available to them. As a first step, city staff could attend meetings of the Community Transportation Network (CTN). The CTN is a collaboration of over 75 community organizations led by the Community Council of Greater Dallas and the Dallas Area Agency on Aging. The CTN's mission is to remove barriers that keep people with disabilities and older adults from getting where they need to go. This is accomplished by weaving together a network of public, private, human services, faith-based and volunteer-driver transportation providers to fill gaps in service.

The CTN meets every other month to discuss transportation coordination. There is no cost to the City of DeSoto to attend these meetings, but the value of attending is immeasurable. The City of DeSoto staff member who attends these meetings could serve as a liaison between city residents in need of transportation services and the various transportation providers who regularly attend CTN meetings. If demand warrants, this liaison role could eventually transition into a full-time staff position at an estimated cost of $40,000 to $60,000 per year.

Another option is for DeSoto, along with the other BSW cities, to follow a model similar to the one employed by the MetroCrest cities of Addison, Carrolton, Coppell, and Farmers Branch, and jointly fund a non-profit organization to provide senior and disabled services, including transportation. As noted previously, Senior Adult Services, which provides these services for the MetroCrest cities, has expressed an interest in establishing similar programs elsewhere. The cost to the BSW cities would likely be similar to the $300,000 currently paid by the MetroCrest cities, and would be divided proportionally among the participating cities.

*Summary of Potential Costs***Table 23** summarizes the potential costs for the City to engage in services and activities discussed above. The purpose is not so much to provide an absolute cost, but an order of magnitude cost estimate. Nor should the table be interpreted as a recommendation, the table is more like a menu of possible actions from which the City could chose a direction.

Table 23 Potential Costs for Strategies

	Estimated Capital Cost	Estimated Additional Annual Operating Cost (Over Current City Budget)	Potential for Cost-Sharing with other BSW cities
Phase I			
Carpool Matching	$0	$10,000	Yes
Vanpool Matching	$0	$10,000	Yes
Taxi Subsidies	$0	$50,000	Yes
Volunteer Driver Program	$0	$20,000	Yes
DART Coordination	Up to $40,000	Up to $140,000	Yes
Phase II			
Startup Shuttle Service	$600,000	$600,000	Yes
Open Park & Ride Lot	Up to $40,000	$10,000	Yes
Expand the City's Role in Coordinating Local Transportation	$0	Up to $300,000	Yes

Lessons Learned -- Serving Transit Niches - The Arlington Experience

The following section describes a more complete history of one city's history in terms of bringing transit to the citizens. Possibly not so much in the individual services, but more in the process and history there are lessons to be learned for DeSoto.

Arlington, TX is often referred to as the largest city in the United States without public transportation. However, the reality is that Arlington has an extensive history of specialized transportation services operated by the city or various organizations. Each has been designed to serve a very specific niche market. Many of these services began as pilot programs, and some only lasted for a very short time. Other services have been quite successful and have been expanded over time. In both cases, there are lessons to be learned for the City of DeSoto.

Arlington Handitran

Handitran is a city-wide door to door paratransit service for Arlington residents who are over 65 or disabled. The service is similar to the paratransit services in Mesquite and Grand Prairie, but with one major difference: the city-owned transit vehicles are supplemented with taxis that are dispatched as needed to accommodate demand. The taxis are dispatched by Handitran, rather than by the passengers, making them a fully integrated part of the service delivery model. Passenger fares are the same regardless of vehicle type, and unless a passenger has a special mobility need, either vehicle type may be dispatched for any trip.

Arlington Handitran is on pace to set an annual record of 117,000 passenger trips in 2011, representing 700 to 800 unique individuals served each month. More than 60% of trips are accommodated by taxis, which tend to be more efficient than the paratransit vans (in part because the passengers assigned to them require less mobility assistance).

Arlington Trolley

The Arlington Trolley is a rubber-wheeled retro-style trolley bus that connects a number of hotels in the city to the Arlington Convention Center and the city's famous sports and entertainment venues. The service is free of charge, but is only available to registered guests of participating hotels. Together, these hotels and venues fund the Arlington Entertainment Area Management District (AEAMD), a special district created under state law and separate from the City of Arlington. AEAMD manages the Arlington Trolley program.

Ride2Work

In January 2011, the City of Arlington partnered with the American Red Cross and six other non-profit and social services organizations to provide transportation to low-income Arlington residents who are not eligible for Handitran. Trips are provided on-request to work-related destinations within the cities of Arlington, Hurst, Euless, or Bedford, or to the Hurst/Bell or CenterPort Trinity Railway Express stations. Ride2Work is a four-year pilot program funded primarily through a Job Access and Reverse-Commute grant from the Federal Transit Administration. Passengers pay $2 per one-way trip in cash or vouchers provided by the participating social service organizations.

The T Express Bus Service

In 2008, the Fort Worth Transportation Authority (The T) began peak-period express bus service between Arlington and downtown Fort Worth. Two routes initially operated from park-and-ride lots in the north and south of the city, but after one year of service, the north route was eliminated due to low ridership. It has been announced that the remaining route will be discontinued at the end of 2011 due to low ridership and lack of funding. Five dollar fares supported a small portion of the $150,000 annual operating cost for the service, with the City of Arlington and various foundations covering the remaining costs. However, the City has not identified a funding source to extend the service beyond its initial three years. Current riders are being transitioned into vanpools to minimize the impact of the service elimination.

UTA Shuttle Services

The University of Texas at Arlington operates three free circulator routes on weekdays during the regular school year. The routes connect remote parking lots and student housing to the main campus. On Saturdays, a separate shuttle route provides service between campus and three shopping centers in the City of Arlington. This shopping shuttle, called the Mav Mover has a fare of $2 per direction. During the 2006-2007 school year, UTA also provided express bus service between the university and CenterPort Station, the nearest station on the Trinity Railway Express. However, this service was discontinued after one year due to low ridership.

Chapter 8. Financing and Revenue Options

As the Arlington experience shows, a primary challenge for the City of DeSoto will be to identify funding sources to start up and sustain transit services in the city, no matter how modest the service might be.

Whatever funding sources are identified and pursued, development of good working relationships with DART, NCTCOG, TxDOT, and FTA will be necessary to ensure funding streams are not contested or become unstable. It is imperative that these other agencies, each with some degree of authority over transit funding in the Dallas Metroplex, fully understand the intent and direction of DeSoto in establishing some form of public transportation for the community. The formation of a Transit Development Plan can assist in establishing DeSoto's intent, but there is also something to be said for cultivating direct relationships with those who hold authority over funding streams. In the case of DeSoto, coordinating with these agencies and adjoining jurisdictions will improve the probability of launching any new funding plan designed to support transit in DeSoto.

Federal Funding

As an introduction, it must be noted that most Federal funding comes to most transit activities through Congressional appropriations to the Surface Transportation Act. The act is designed around a 6 year re-authorization cycle which is now three years overdue for reauthorization. In the interim period, Congress has been continuing to fund transportation with a series of continuing resolutions. The current, and eighth, continuing resolution is set to expire on March 31, 2012. Conventional wisdom suggests that Congress will finally re-authorize the surface transportation act this winter. However, significant compromises are very likely in all Federal domestic spending programs as a result of the Bi-Partisan Deficit Reduction Committee efforts. The precise outcome of those negotiations is unknown at this time, making Federal funding far less of potential future funding source for public transportation efforts in DeSoto.

The Federal Government through the Federal Transit Administration (FTA) administers funds for transit. Within the North Texas area, including DeSoto, these funds are managed through the North Central Texas Council of Governments (NCTCOG). NCTCOG, as the designated MPO (Metropolitan Planning Organization) distributes these federal funds via a specific formula. These funds are distributed to the transit properties within the area and individual cities.

The Congestion Mitigation and Air Quality Improvement (CMAQ) program was established to encourage surface transportation projects and other associated projects which would contribute to improving air quality and reducing congestion. The following projects are eligible for CMAQ funding:

- Service or System expansion.
- Provision of New Transit Service.
- Financial incentives to use existing transit services.[25]

An example of a municipality utilizing CMAQ funding for start-up transit services is the City of Boulder Colorado. CMAQ funds are utilized only for initial start-up and not long-term funding.[26] However, the

[25] www.fhwa.dot.gov/environment/air_quality/cmaq/reference/brochure/brochure06.cfm

conditions in place for Boulder and DeSoto are very different, in particular the influence of the MPO (NCTCOG in DFW area). It is very unlikely this source of revenue would be applied in this manner within the allocation policies followed by NCTCOG.

Another Federal opportunity for funding is the Livability or Livable Communities grant. This grant is made available to communities to increase and improve transportation options for all communities.[27] This grant allows for funding which promotes the "Six Principles of Livability."[28]

- Provide more transportation choices;
- Promote equitable, affordable housing;
- Enhance economic competitiveness;
- Support existing communities;
- Coordinate policies and leverage investment; and
- Value communities and neighborhoods.

While the grant deadline has passed for 2011, it may be renewed for 2012 and this is certainly a funding opportunity that DeSoto should explore. However, the caveat is that these Federal funds are extremely competitive and there is a requisite 20% local match. Again, it is unlikely this source of Federal funding will be available to DeSoto, either due to changes in appropriations and transportation funding at the Federal level or due to competition at the regional level. This funding source also requires a fully designed and planned system that can demonstrate local support, including support for local financing. As attractive as this funding source may seem, it is unlikely that DeSoto will be able to access it any time in the near future.

Other Federal programs that DeSoto could apply for include:

Section 5307-Urbanized Area Formula Program which programs funding for capital and operating assistance for urbanized areas as well as transportation related planning.[29] Because DeSoto is part of the Dallas/Fort Worth/Arlington metropolitan area, the city population is included in the overall population figures, which is one part of the Federal funding formula for 5307 funds. This allows DeSoto eligibility to apply for these funds through NCTCOG, which includes capital and operating funds. For capital funds, there must be a 20% local match and for operating funds, there must be a 50% local match.[30] Distribution of 5307 funds is based on an adopted policy of NCTCOG. The most likely pathway is for NCTCOG to allocate some amount of funding to the BSW cities for transit start-up, similar to the sub-area allocations for Fort Worth, east Dallas, and Denton County, but given the relative population of the areas compared to the Dallas Metroplex and the fact that the funds are already being allocated to other purposes, meaning some program in the NCTCOG area would lose funding, it is unlikely this is a significant near-term funding source.

Section 5310-Elderly and Individuals with Disabilities Program is designed to provide for the purchase of vehicles for seniors and the disabled. These funds are for the capital acquisition of vehicles, not operation

[26] www.fhwa.dot.gov/environment/air_quality/cmaq/reference/brochure/brochure06.cfm#note8.

[27] www.fta.dot.gov/publications/publications_11003.html.

[28] www.gpo.gov/fdsys/pkg/FR-2011-06-27/pdf/2011-16015.pdf.

[29] www.fta.dot.gov/funding/grants/grants_financing_3561.html.

[30] Conversation with NCTCOG staff member, Jessie Huddleston, on 8/4/11.

and maintenance.[31,32] This funding source is a less likely candidate as it requires NCTCOG concurrence and the provisions of the program are fairly stringent. However, this may prove to be a good source of funds to acquire vehicles for a transit program designed to support seniors and people with disabilities.

Section 5316-Job Access and Reverse Commute (JARC) is designed for low income individuals and those receiving welfare to access transportation to and from jobs and reverse commute activities. This program was designed for individuals whose family income is at or below 150% of the poverty line, as determined by the latest U.S. Census data[33] in order to get them to jobs in other parts of a city or a metropolitan or rural area.[34] These funds may have some likelihood of becoming available, but only as part of a cooperative or coordinated program involving DART.

Section 5317-New Freedom Program is for those individuals with disabilities who are in the workforce or wish to get into the workforce. Both capital and operating expenses are eligible under this program.[35] These funds may have some likelihood of becoming available, but only as part of a cooperative or coordinated program involving DART.

Section 5316 and 5317 are administered through either TxDOT or NCTCOG. In many instances, the funds are awarded on an 80/20 basis, with a 20%local match required. These programs are specific within their target area and cannot be utilized for general public transit needs. In all cases access to these funds depends on a coordinated effort, e.g. with DART and the BSW cities, as opposed to the singular effort of a municipality such as DeSoto.

The Regional Transportation Commission (RTC) has a policy which encourages municipalities to work with existing transportation authorities and existing providers rather than implement new services.[36,37] NCTCOG staff encourages cities to focus on the type of service to be provided and then seek to procure that service through a standard purchase of services process. It is anticipated that local providers, of which there are many very good organizations, who provide transit services under contract to municipalities would respond to the procurement effort and to contract for public transit services within the city. For example, STAR Transit (formerly KART-Kaufman Area Rural Transportation) provides service for Kaufman, Navarro, Rockwall and Ellis Counties.[38] STAR, like many area private providers, already has buses in place to provide transit services immediately rather than encounter delays for capital funding and/or procurement/acquisition of rolling stock. There are also other types of procurements which may prove useful, such as an exclusive arrangement with a franchise operation where the city provides the capital equipment and an operator runs the service on a for profit basis, similar to a charter operation. This would be classified as a public-private partnership which is described in further detail below.

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[31] www.fta.dot.gov/funding/grants/grants_financing_3556.html.

[32] www.txdot.gov/business/governments/grants/programs.htm.

[33] www.fta.dot.gov/documents/FTA_C_9050.1_JARC.pdf.

[34] www.fta.dot.gov/funding/thirdpartyprocurement/faq/grants_financing_10913.html.

[35] www.fta.dot.gov/funding/grants/grants_financing_3549.html.

[36] www.nctcog.org/trans/committees/rtc/2009/09Sept/Ref.Itm_4.1.rtc091009.pdf.

[37] www.nctcog.org/trans/mtp/2035/PolicyLanguageReviewRTC071510.pdf.

[38] www.terrelldepot.com/Star%20Transit%20Home.html.

State Funding

While NCTCOG is the centralized funding source for pass through of Federal funds, TxDOT also serves as a pass-through agency for a variety of Federal funds for areas that are not part of the metropolitan planning organization. It remains to be seen what share, if any, of the pass through Federal funds could be available for DeSoto as the TxDOT funds are more typically targeted for rural areas where there is no centralized funding authority. TxDOT pass through funds could include:

- **United We Ride** - a collaboration between a variety of state agencies, including the Department of Aging & Disability Services, the Department of Assistive & Rehabilitative Services, the Department of Family & Protective Services, Department of State Health Services, the Texas Workforce Commission and other health and human services departments. This program funds pilot programs using Federal funds to bring case workers and transportation managers together to assist a specified population (meaning those served by the aforementioned state departments) to provide public transportation to meet their clients' needs.[39]
- **Job Access Reverse Commute (JARC)** - There is opportunity for DeSoto to tap into the JARC funds at the state level for general population needs and to enhance current senior transportation to include the disabled. This would provide assistance to those captive riders who need public transportation to get to work, school, medical and shopping needs These funds could assist in establishing commuter shuttles to connect to larger transit routes, including light rail and buses to allow for citizens to reach jobs and to broaden the employee base for employers within DeSoto. However, it should be noted that these funds, when distributed at the state level, are more typically targeted to rural populations. It is unlikely that this state-level funding source would produce a significant or on-going revenue stream. Equally important is the same caution presented at the beginning of the Federal funding section; the future of Federal funds is very much in doubt. It is possible that many current Federal programs will be collapsed into a large pot of competitive block grant funds that are intended to serve a variety of purposes. As the work of the Federal Deficit Reduction Commission proceeds, the future of some of specialized funding sources will become clearer.

TxDOT also offers state funds to smaller standalone jurisdictions, such as DeSoto, as a match to locally raised or Federal funds for capital and operating expense. In the case of DeSoto it is not clear to what extent these funds may be available given DeSoto's somewhat unique position as a non-member city in the DART taxing area but at the same time a city within the jurisdiction of NCTCOG. This potential will require direct contact with TxDOT to determine availability and eligibility. It is also possible this could be a source of funds to assist the City in assembling a transit development plan, a logical follow-on to this feasibility study should the City decide to move forward.

Local Funding

Under Texas state law there are a variety of local taxing options open to DeSoto that could be used to fund transit. Few of these funds are available except through a local ballot issue. This often means a significant lag time between the time a decision is reached that local funding should be pursued and the arrival of the first dollar in local accounts.

[39] ftp.dot.state.tx.us/pub/txdot-info/ptn/uwr_responsibilities.pdf.

Sales Tax

In North Texas, communities which are members of DART (Dallas Area Rapid Transit), The T (Fort Worth Transportation Authority) and DCTA (Denton County Transportation Authority) pay a percentage of sales tax revenue for transit services. This ranges from 1/2 cent to a full penny per dollar of taxable purchase.

DeSoto's current rate for sales tax is 8.25%, which is the cap for sales tax a municipality can collect. Under state law, municipalities can change, repeal, or modify sales tax with the approval of the majority of qualified voters.[40] Sales tax revenue break down includes 6.25% to the state and the remaining 2% for municipality's discretion. Currently, DeSoto utilizes the entire 8.25% for purposes other than transit. The voters can choose to redirect the sales tax to transit and/or transit projects if there are no bonds or committed funds currently in place. This would include moving the 4A/4B tax to a transit only tax even if it is a percentage of the tax, for example ½ cent.

The challenge for DeSoto is to overcome political barriers and public perception to any type of tax increase or addition or substituting a transit tax for current economic development tax. A municipality may also face more of a challenge to implement an independent or stand-alone transit system when abutting a large transit system.

There are several revenue sources which could have been tapped for possible funds, but the State of Texas may be using these same sources for state-wide mobility improvements. In the report, "It's About Time: Investing in Transportation to Keep Texas Economically Competitive"[41] (March 2011), the 2030 Commission identified possible increases to several options that DeSoto might try to utilize, including vehicle sales tax, but currently these tax sources are not authorized under state law.

Any momentum to increase taxes such as vehicle sales or registration tax would likely be at the State level and programmed for State projects. There is the likelihood that local agencies and governments may be able to tap into these sources but it is unclear at this time whether that might be considered. DeSoto should keep in close contact with its State legislators to monitor. There might be opportunity through a Texas Department of Transportation (TxDOT) or NCTCOG Call for Projects to receive planning, capital, or operating funds for transit service within the city.

Texas State Senator John Corona sponsored a bill in the 2009 Texas Legislative session (Senate Bill 855 Texas Local Options Transportation Act) which would have allowed local municipalities to choose different fees to support transportation projects. Unfortunately, this bill failed in the session and the crisis in education funding seems to have overshadowed efforts to revive this bill. This bill may be introduced in a future legislative session. DeSoto could benefit by supporting efforts to re-introduce and pass the legislation.

Property Tax

Property tax is revenue collected based upon the value of property and buildings. This is not the same as creating a Tax Increment Financing (TIF) or special district which capitalize on an increase of property tax. This discussion relates only to utilizing property taxes as an on-going, permanent source of revenue for the transit agency. One option that does exist within the property tax arena is the creation of a special

[40] www.statutes.legis.state.tx.us/Docs/TX/htm/TX.321.htm.

[41] www.texas2030committee.tamu.edu/documents/final_03-2011_report.pdf.

authority or "municipal management district" to further the cause of development and activity that is directly related to stimulating business and economic development. This exact form of governance and funding has been used by the City of Arlington, described above, to create a special transportation service that supports the unique combination of hotels, restaurants, sporting venues and recreation sites. A similar form of governance and taxation could be explored by DeSoto to create an "entertainment zone," including transit, to directly support activity in the zone, should that be a direction the City decides is the right direction for DeSoto. A few selected sections for the Texas State Code are provided below which speak more directly to a few aspects of this governance form and funding opportunities.

Texas Local Government Code - Section 375

375.001. LEGISLATIVE FINDINGS; PURPOSES.

(a) The creation of a municipal management district is declared to be essential to the accomplishment of the purposes of Article III, Section 52, Article XVI, Section 59, and Article III, Section 52-a, of the Texas Constitution and to the accomplishment of the other public purposes stated in this chapter.

(b) The creation of each district is necessary to promote, develop, encourage, and maintain employment, commerce, economic development, and the public welfare in the commercial areas of municipalities and metropolitan areas of this state.

(c) The creation of districts and this chapter may not be interpreted to relieve any municipality from providing services to an area included in the district or to release the municipality from the obligation it has to provide municipal services to that area. A district is created to supplement and not supplant the municipal services of the municipality.

(d) All of the land and other property to be included within the boundaries of a district will be benefited by the works and projects that are to be accomplished and the services to be provided by the district under powers conferred by Article III, Section 52, Article XVI, Section 59, and Article III, Section 52-a, of the Texas Constitution and other powers granted under this chapter.

(e) A district is created to serve a public use and benefit.

(f) The creation of a district is essential to further the public purposes of development and diversification of the economy of the state, the elimination of unemployment and underemployment, and the development or expansion of transportation and commerce and is in the public interest.

(g) A district will promote the health, safety, and general welfare of residents, employers, employees, and consumers in the district and the general public.

(h) A district is designed to provide needed funding for metropolitan areas to preserve, maintain, and enhance the economic health and vitality of the areas as community and business centers.

(i) The present and prospective traffic congestion in municipalities in this state, the need for traffic control and the safety of pedestrians, and the limited availability of funds require the promotion and development of public transportation and pedestrian facilities and systems by new and alternative means, and a district will serve the public purpose of securing expanded and improved transportation and pedestrian facilities and systems. The public transportation and pedestrian facilities and systems promoted and developed by a district will be attractive, safe, and convenient and will benefit not only the land and

property in the district, but also the employees, employers, and consumers of the district and the general public.

(j) A district will further promote the health, safety, welfare, morals, convenience, and enjoyment of the public by landscaping and developing certain areas within the district that are necessary for the restoration, preservation, and enhancement of scenic and aesthetic beauty.

(k) A district will not act as the agent or instrumentality of any private interests even though many private interests will be benefited by the district, as will the general public.

(l) The purpose of this chapter is to promote and benefit commercial development and commercial areas throughout the state. Each improvement project or service authorized by this chapter is found and declared to carry out a public purpose.

§ 375.021. AREAS ELIGIBLE FOR CREATION OF DISTRICT.

(a) A district may be created only:

(1) in an area devoted primarily to commercial development and business activity inside the boundaries of a municipality with a population of at least 25,000; or

(2) in an area devoted primarily to commercial development or business activity.

(b) A district created as authorized under Subsection (a)(2) may include the extraterritorial jurisdiction of a municipality with a population of at least 25,000 if the area has an assessed valuation of $500 million or more according to the rolls of the central appraisal district for the year preceding the date of creation of the district.

375.111. GENERAL POWERS RELATING TO ASSESSMENTS. In addition to the powers provided by Subchapter E, the board of a district may undertake improvement projects and services that confer a special benefit on all or a definable part of the district. The board may levy and collect special assessments on property in that area, based on the benefit conferred by the improvement project or services, to pay all or part of the cost of the project and services. If the board determines that there is a benefit to the district, the district may provide improvements and services to an area outside the boundaries of the district.

375.112. SPECIFIC POWERS RELATING TO ASSESSMENTS.

(a) An improvement project or services provided by the district may include the construction, acquisition, improvement, relocation, operation, maintenance, or provision of:

(1) landscaping; lighting, banners, and signs; streets and sidewalks; pedestrian skywalks, crosswalks, and tunnels; seawalls; marinas; drainage and navigation improvements; pedestrian malls; solid waste, water, sewer, and power facilities, including electrical, gas, steam, cogeneration, and chilled water facilities; parks, plazas, lakes, rivers,

bayous, ponds, and recreation and scenic areas; historic areas; fountains; works of art; off-street parking facilities, bus terminals, heliports, and mass transit systems; and the cost of any demolition in connection with providing any of the improvement projects;

(2) other improvements similar to those described in Subdivision (1);

(3) the acquisition of real property or any interest in real property in connection with an improvement, project, or services authorized by this chapter, Chapter 54, Water Code, or Chapter 365 or 441, Transportation Code;

(4) special supplemental services for advertising, economic development, promoting the area in the district, health and sanitation, public safety, maintenance, security, business recruitment, development, elimination or relief of traffic congestion, recreation, and cultural enhancement; and

(5) expenses incurred in the establishment, administration, maintenance, and operation of the district or any of its improvements, projects, or services.

(b) An improvement project on two or more streets or two or more types of improvements may be included in one proceeding and financed as one improvement project.

Tax Increment Financing

TIFs are used by municipalities to help improve specified areas within a city or county. When a TIF district is established, the current valuation on the property is established as a "base" and taxes collected on the base value continue to be collected by the municipality. As the value of the properties increases, the amount collected over and above the base rate is deposited into a special fund to be reinvested in the area for infrastructure or other improvements to encourage further investment into the area.

The City of Dallas has created six TIF districts around DART light rail stations to encourage development and improve infrastructure.[42] One such area is the Cedars area, just south of downtown Dallas.[43] The City established this area as a TIF district in 1992, and to date there have been seven distinct residential projects which are now valued at approximately $33,000,000 with a TIF investment of $1,600,000. There have also been projects within this area that have not utilized any TIF district investment but have contributed to the tax base within the area. These new projects have a valuation of approximately $50,000,000. With new investments in an area, including residential, retail, and office, the area benefits from increased public transit uses, increased sales tax revenue, and increased property values. DeSoto certainly can utilize a TIF district to encourage development or redevelopment of specified areas and encourage transit uses by constructing buildings close to the sidewalks, improved pedestrian and bicycle access, and a mix of uses to meet the needs of the neighborhood or city.

This form of finance only has application to capital expenses, but has been used on at least two occasions to assist in funding construction of park-and-ride lots in the greater Dallas area. While this funding tool

[42] - www.dallas-ecodev.org/images/community_redevelopment/area_redevelopment/tif/TOD_TIF_presentation.pdf.

[43] - www.dallas-ecodev.org/images/community_redevelopment/area_redevelopment/tif/cedars_report_2008.pdf.

has limitations, it may be useful as a way to raised local funds that are matched or leverage regional, state, or Federal funding streams.

Transportation Development Districts

Transportation Development Districts (TDD) are special districts which are established to construct transportation-related projects. These districts have the authority to tax property, levy tolls, and sell bonds. The State of Missouri has used TDDs successfully for roadway projects, and these districts also have the authority for other types of projects for bus service and aviation.[44] The Missouri State Legislature approved the TDD to accelerate construction of projects within urban areas (St Louis and Kansas City) and rural areas (a community bridge at the Lake of the Ozarks).

To date, there are no Transportation Development Districts in Texas but these are similar to TIF districts.[45] These TDDs could be used to construct facilities such as bus stop amenities or transit facilities. It should be noted that Texas state law may not currently allow the formation of a TDD to fund transit-related improvements in an area. This specific issue needs further legal research should this funding source be of interest.

Public Private Partnership

The National Council for Public Private Partnership defines public private partnership (PPP) as "a contractual agreement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility."[46]

The US Department of Transportation defines it further: "A public-private partnership is a contractual agreement formed between public and private sector partners, which allows more private sector participation than is traditional. The agreements usually involve a government agency contracting with a private company to renovate, construct, operate, maintain, and/or manage a facility or system. While the public sector usually retains ownership in the facility or system, the private party will be given additional decision rights in determining how the project or task will be completed."[47]

The opportunities for a public private partnership could begin with employer-funded shuttles from a DART transit station or bus stop to businesses within DeSoto or from DeSoto to employment sectors outside the city. Identifying employer needs with the employee base can assist DeSoto in determining potential activity centers and employers to discuss working with DART. This would include accessing any DART transit facilities and working out a schedule and an Interlocal Agreement (ILA) between the City and DART. DART has worked with other cities and agencies, including the Texoma Express which links the Sherman/Denison area with the Parker Road light rail station. It is important to recognize that the initial assessment of transit markets in DeSoto did not find any occurrences of employment sites large enough to support this type of service. But should a large employer end up constructing a new site in DeSoto, this

[44] www.missouridevelopment.org/Community%20Services/Local%20Finance%20Initiatives/Transportation%20Development%20District.html.

[45] utcm.tamu.edu/tfo/transit/summary.stm.

[46] www.ncppp.org.

[47] www.ncsl.org/documents/transportation/PPPTOOLKIT.pdf.

could be a useful tool to encourage less auto dependence and help prevent traffic congestion so often created by development of large suburban employment sites.

There are three parts of a public private partnership:

1. The mission: What are the goals of the project for both the public sector and private.
2. Project delivery and risk allocation: What is the risk to both parties and how will the project be delivered, e.g. private construction or public construction; private or public concessionaire.
3. Money: Financing by both parties, through equity partnerships, loans, or other means.

In many discussions, the state infrastructure bank (SIB) may be mentioned as a possibility for a loan. However, SIBs were established for highway construction projects only.

Public private partnerships are a viable and logical opportunity to begin any dialogue in creating public transit within DeSoto or connecting a public transit network to other systems, such as DART. For example, a local employer could work with the City and DART to hire a bus transportation company (such as "Buses By Bill") to transport passengers from a specified point in DeSoto to the nearest DART transit facility. This could also be a non-profit agency or a social agency to lay the foundation for a shuttle.

Summary of Financing/Funding Options

The current economic climate has increased the complexity of and decreased the opportunity for many state and local agencies and municipalities to tap into federal and state funding opportunities. With state governments pursuing an increase of a variety of taxes that a municipality or county may be able to leverage for their own needs, municipalities must be creative and aggressive to meet their goals; in this case, public transportation for the citizens of DeSoto.

Table 24 Summary of Financing/Funding Options Strengths and Weaknesses

Funding Type	Strengths	Weakness
Federal Funds	• Often available to assist with planning, startup, or capital acquisitions. • Several different funding programs at the Federal, state and local level. • Often used to leverage small amount of local funds to advance greater financing of a project.	• Unknown future. • Not a good source to fund on-going operations. • Often complex. • When funds are competitive, competition for funds is fierce. Chances are less than 30% of landing funds through a competitive process.
Sales Tax	• Pre-recognized form of funding for transit. • Can be a dedicated source of funds for transit.	• City already has maximum sales tax assessed meaning the sales tax would have to be repurposed and the revenue replaced to fund the current purpose. • Requires a vote of the people. • May cause issues at some future point should the city decide to join DART. • Is an unstable revenue source in times of economic downturn.
Property Tax	• Tap into a larger revenue base. • Small additional amount may generate larger revenue for project.	• Citizen/political objection to additional property taxes.
Municipal Management District	• Flexible and available source to establish a separate governance, involve private sector and fund economic development.	• Limited application to very specialized and specific purposes related to economic development and job creation. • May take a substantial period of time to establish. • Is a separate authority which may, over time, move in a direction different than city desires.

TIF	• Opportunity for development of greenfields or redevelopment of brownfields with infrastructure being constructed concurrently. • Reinvestment for a specified area.	• Tax base may be kept low for period of years, thus resulting in some perceived loss of tax revenue. • Only useful for capital projects that have a nexus benefit for adjacent properties.
TDD	• Opportunity for tax dollars to be earmarked for a specific project.	• Need to establish specific goals and plan for setting up the district. • Unknown application and acceptance in Texas.
PPP	• Potential new source of funding. • May reduce costs and construction schedule.	• Risks for the private and public sector in terms of financing and construction. • Can be very complex if Federal funding is part of the mix. The requirements to share risk must be stringently proven. • Can be very complex when used to fund on-going operations.

Appendix A: Stakeholder Interview Report

Organization	Person Interviewed	Date	Sector Represented	Q1. Who do you represent ?	Q2. What are the major challenges facing your constituents re: Transportation	Do you think the the lack of transp keeps people from participating in your organization's programs	What concerns do you hear from community	What do you see as the primary users for transportation in DeSoto	Are their any particular travel characteristics about DeSoto that make it different from the other cities in the BSW	How has the current demand for travel changed from 10 years ago	What role do you see for public transportation	What is the most effective form of service (options were given to rank)	What are the major constraints in providing public transportation	Do you have any ideas about innovative financing options?
Desoto ISD	Ron Cagle	2/20/2011	Public School	school age children	ISD has contract with Dallas County Schools to provide transportation for kids who live more than 2 miles from their school; the challenge s for those children/parents that live less than 2 miles.	Not sure, but was certain that some parents are organized and share carpooling duties	There are many people who do not have a way to work. Some parents have difficulty getting students to extra curricula activities, but they all figure it out. Students will bubby up with other students with transportation	The elderly		Demographics have changed tremendously. There are many more poor people hear than in the past.		1. Carpool; 2. Vanpool; 3. Build Park and Ride and express passengers to DART stations; 4. Commuter Service	Safety concerns	Had no idea of how to finance transit
DeSoto Senior Center	Nathan Busby	2/24/2011	Elderly	400 members ages 50+; both non-resident and resident	They get 5-10 calls a day asking about trips to medical appointments. They only provide van service to make personal group-type trips like to the store or pharmacy	No because the Senior Center has pickup/drop off service. These services are limited because they are provided before lunch. If public transportation was available, he could see people being dropped off in AM and taking transit back	They do not have personal vehicles to make doctor appointments and run individual personal errands. Doesn't know if it pertains to their ability to drive or lack of means to afford a vehicle. Currently they pick up residents about 8AM till noon and bring them to center. They take seniors to store or pharmacy till noon.	Number one is medical trips. They tend to use Methodist Charlton, the VA, and Baylor (downtown Dallas)	All other senior centers in BSW provide same thing. D'ville is the biggest and their patrons have more personal vehicles to get around. DeSoto is equal in size to Lancaster and bigger than Cedar H. Some centers charge fees for non-resident patrons.	They use to have more vehicles but the quality of those vehicles were not good for transporting wheel chair passengers. They were also not in good shape. Now they have better quality vehicles and and only a few.	To take folks on special personal trips like the medical visits, perhaps to downtown Dallas or to movies	Services that could take elderly to specific destinations, especially medical trips		
Park & Recreation	Chris Glover	2/24/2011	Recreation	Youth Sports, adhow youth that frequent the DeSoto recreational center. Also "Summertime on Beltline".	Youth often face being dropped off at center and not having a way home. Youth often carpool either with another family or young adult.	No. Lack of public transportation does not prevent people from participating, because they find a way. But the participation level might grow if it was available.	Not sure he's heard any concerns	Youngsters getting to the events, so that they are more independent and not as dependent upon parents with busy schedules.	DeSoto rec center is more centrally located. Parents feel better dropping them at DeSoto rec center. The other cities' rec centers are not as convienently located.	Demand is greater especially to get to entertainment venues; need to have ways that people can get to a central location where a cluster of places are located; then pedestrian traffic would be easy.	Assist parents with active children; elderly transporation; travel to other BSW cities.	1) Trains; 2) vanpools; 3) Park and ride to transit locations. Also, the service should be safe and reliable so that people will feel good about using it.	How to pay for it.	
City of DeSoto Human R	Andre Houser	2/23/2011	City of DeSoto Human Resources	City employees - 330 people	Since maybe half of employees live outside of DeSoto, some people struggle with cost of fuel	Public transit would offer choices.	Beltline and Cockrell Hill is more congested than ever before. Ozone levels are higher; We have more standing traffic than we use to.	People who can use public transit for shopping related or medical related purposes	Between 1-6PM most residents leave; DeSoto is a bedroom community. We can access 3 highways quickly and others have access to 2	Increase in traffic over the last 7 years. Also an increase in population.	Relieving congestion and helping with the environment	Commuters because the senior center has vans and the schools have buses. Commuters have limited choices.	Attitude of citizens and money to pay for it.	Don't know since sales taxes are not available; perhaps bonds could be issued.
ROTOR - Reach One Teach One to Read	Sandra ldDeen	12/20/2010	Education; Youth	K-6 students for summer academics, K-12 for tutoring, rights of passage for maile, teen and parent counseling, practical parent education (PPE). The center deals with kids K-12 grade and has contract with Dallas, DeSoto and BSW, Lancaster. Average # trips to center is 25.	Parents have problems (especially coming from North Dallas getting children to her location. Even parents in DeSoto have prob leaving work (outside of DeSoto) and getting children to ROTOR. There is an organization called Taxi-moms who transport many kids.	Yes, definitely. If students could get here on their own, ROTOR could have more students.	Just getting students here. They are located at 108 W. Beltline Road (corner of Beltline and Hampton)	People need transporation to get out of DeSoto.	DeSoto is centrally located and have freeways on east, west, and north. Transporation along major thoroughfares would make it accessible to many major destinations.	More people are here now. More demand for the youth and aging. Beltline is a busy thoroughfare - more today than before.	True gateway for our youth and seniors. Thinks that DeSoto residents would stop driving so much	Commuters to Dallas and DFW areas; 1) local circulation for the youth	Cost	Major industry here could invest and help defray the cost
DeSoto Food Pantry	Debby Baugh	12/8/2010	Social Services	Member of the North Texas Food Bank; clients come from 75115 zip and Glenn Heights. Hungry and homeless come to food bank (Hours Mon 9A-12P; Thur 1P - 4P; Sat 10A - 12P)	People cannot get to jobs or interviews, so they can't always feed themselves; most people who come to settle come in groups, old cars that are not dependable	Definitely. There are at least 50-75 people that could instantly benefit and another 25 that carpool to get food	They can't get a job because of lack of transportation. They got to DeSoto because they may have lost their job, moved in with relative and now call DeSoto home. A lot of seniors from the senior homes carpool to get food.	Work trips and shopping	Our freeways are different than Cedar Hill. Cedar Hill has retail and we drive there. We have closer medical facilities, though.	Transportation is more choice related than the demand 10 years ago. DeSoto socioeconomic status has decreased. There are environmental changes and knowledge of the effects of these changes. Future influences will include population growth, travel to Dallas. Also, eventually the "old" folks will die and the community will get younger.	Helping mitigate the environment; benefiting the aging population	1) Fedder service to DART transit; 2) Vanpool; 3) Shuttle for Elder; 4) Bus service to key activity centers; 5) local fixed along major arterials; 6) build park & ride; 7) carpool	Getting citizens to think long term and about the community as a whole. DeSoto residents have a perception that DeSoto on caters or houses the affuent. That's not true. Her customers want to do better, but lack of transporation is a major deterrent. The cost of services is of concern especially if taxes are increased.	

Organization and Date Interviewed	Sector Represented	Q1. Who do you represent ?	Q2. What are the major challenges facing your constituents re: Transportation	Do you think the the lack of transp keep businesses from wanting to relocate in DeSoto	What concerns do you hear from prospective or current businesses or their constituents about travel in the DeSoto area	What do you see as the primary travel markets in DeSoto	Are their any particular travel characteristics about DeSoto that make it different from the other cities in the BSW	How has the current demand for travel changed from 10 years ago	What changes do you expect to influence travel demand in next 5 to 10 years.	Which of the travel markets - Commuters to dwntn Dallas, DFW, local for elderly or work trip, or BSW trips	What will be the most effective form of Service (ranking question)	What are the major constraints in providing public transportation	Do you have any ideas about innovative financing options?	Do you think there are opportunities for a PPP
Randal Livingston DeSoto EDC 12/8/2010	City of DeSoto El	businesses in DeSoto and tax payers	None	Companys that hire lower waged employees may not live in DeSoto and those employees will need to come from other area; they may not have a way to get to DeSoto; these include manufacturers, distributors and universities; Martin Transport on the other hand, was not concerned about public transportation - they intend to hire from the BSW cities	Danieldale needs to be widen and rehabilitated from Cockrell Hill to I35. Assessibility to I35, I67 and I20. Seniors have trouble getting around.	School trips and shopping trips	Traffic patterns are different when we shop or go to eat.	Population has changed the the demand for travel has remained the same	There is only 2 sites that can be developed (a 90 acre and a 60 acre). Pleasant Run/Hampton revitalizations, revitalizing K-Mart near I35, the old Albertson and Win Dixie. Also, widening Pleasant Run	1) Downtown or Addison; 2) Commuters into DeSoto, especially if we develop Eagle Park; 3) Service for elderly and youth	1) Build Park & Ride and express passengers 2) Express bus feeder to DART; 3) Carpool; 4) Vanpool; 5) Shuttle for Elderly; 6) Local fixed along arterials; 7) Bus service to key activity centers	Cost - may eliminate 4A funds ; 2) the Mindset of the community	Grants & iniative from federal and state. Does not want increase in sales or property taxes	Don't know if it would be feasible unless it was profitable

Appendix B: Survey Sheet and Overview of Survey Validation

DeSoto is interested in your opinion about the future of transportation OPTIONS. This survey is intended to gather information about DeSoto residents and their routine travel patterns. Your personal information will be used only for the purposes of evaluating the feasibility of future public transportation options in DeSoto.

Please ANSWER ALL of the questions. Your identity will remain anonymous. Only one survey per person please.

* 1. Are you a RESIDENT of DeSoto?

- ◯ Yes
- ◯ No

* 2. How long have you lived in DeSoto?

- ◯ 0-5 years
- ◯ 6-10 years
- ◯ 11-20 years
- ◯ Over 20 years

3. Describing your NORMAL TRAVEL ROUTINES, where do you:

	What area? Example: DeSoto, Downtown Dallas, Oak Cliff, Fort Worth, etc	How often? # times/wk	How do you get there?	Likelihood of using public transit Yes, maybe , No
Go to work				
Go to school				
Usually go to the doctor				
Go to church				
Usually go to a favorite restaurant/recreation				
Usually shop for groceries				
Usually shop for clothing or household goods				

4. IN THINKING ABOUT OUR COMMUNITY and its residents, what are your concerns?

	Not concerned	Slightly concerned	Moderately concerned	Very much concerned
Concerned about TRAFFIC congestion IN DESOTO in the next 5-10 years?	◯	◯	◯	◯
Concerned about TRAFFIC congestion IN DALLAS/FORT WORTH in the next 5-10 years?	◯	◯	◯	◯
Concerned about AIR QUALITY in the next 5-10 years?	◯	◯	◯	◯
Concerned about the future COST OF GAS?	◯	◯	◯	◯
Concerned about the LIMITED transportation CHOICES for the AGING population in DeSoto?	◯	◯	◯	◯
Personally, are YOU concerned about LOSING YOUR ABILITY TO DRIVE in next 5-10 years?	◯	◯	◯	◯

5. When you think about ways public TRANSPORTATION could BEST SERVE DESOTO, what are your TOP 3 CHOICES in order of importance. You may not choose more than one choice for the same option.

	First Choice	Second Choice	Third Choice
Travel to/from Dallas downtown area	○	○	○
Travel to/from communities serviced by DART	○	○	○
Travel in and around DeSoto	○	○	○
Travel to/from DFW or Love Field airports	○	○	○
Travel to/from our neighboring suburbs (Cedar Hill, Duncanville, or Lancaster)	○	○	○

LARGE BUSES PROBABLY WILL NOT BE FEASIBLE FOR DESOTO. With that in mind, please answer the following questions.

6. When you think about possible TRANSPORTATION OPTIONS, what are your TOP THREE CHOICES in order of importance. Please read all of the choices before responding. You may not choose more than one choice for the same option.

	First Choice	Second Choice	Third Choice
Vanpooling (subscription service with designated drivers in city leased vehicles)	○	○	○
Express service (limited stops) to popular destinations such as downtown Dallas or DFW airport, etc	○	○	○
City constructed park and ride	○	○	○
Special transportation service for elderly and disabled (on demand)	○	○	○
Carpooling (matches organized and coordinated by the City)	○	○	○
Public transportation is not needed	○	○	○
Local public transportation within the city of DeSoto	○	○	○
Express service to existing DART park and ride/transit centers	○	○	○

Suggest and rank a different choice not included above

7. Considering transportation options other than a private vehicle, which DESOTO RESIDENT would public transportation BEST SERVE. What are your TOP THREE CHOICES in order of importance. You may not choose more than one choice for the same option.

	First Choice	Second Choice	Third Choice
Families with limited auto availability	○	○	○
Persons with disabilities	○	○	○
Commuters who work in other cities	○	○	○
Elderly who cannot or should not drive	○	○	○
School age children to get to local events or nearby jobs	○	○	○

Suggest and rank a different choice not included above

*** 8. Have you used any public transportation services in the past year?**

- Yes
- No

If yes (please specify)

*** 9. If public transportation options were available for some of your regular trips, WOULD YOU USE IT?**

- Yes
- No
- Maybe

Please explain your answer to help us understand your thoughts.

*** 10. Including yourself, HOW MANY people are living in your HOUSEHOLD?**

- 1
- 2
- 3
- 4
- 5 or more

*** 11. Including yourself, how many people living in your household are AGE 65 OR OVER?**

- 0
- 1
- 2
- 3
- 4
- 5 or more

*** 12. Including yourself, how many people in your household are AGE 15 OR YOUNGER?**

- 0
- 1
- 2
- 3
- 4
- 5 or more

*** 13. Are you?**

- Male
- Female

*** 14. What is your age?**

- Under 16
- 16 - 17
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-70
- over 70

15. What do you estimate was the COMBINED TOTAL ANNUAL INCOME 2010 FOR EVERYONE who lives in your household?

- Less than $15,000
- $15,000 - $24,999
- $25,000 - $34,999
- $35,000 - $49,999
- $50,000 - $74,999
- $75,000 - $99,999
- $100,000 or more

*** 16. Including yourself, how many people in your household have a VALID drivers LICENSE?**

- 0
- 1
- 2
- 3
- 4
- 5 or more

*** 17. How many WORKING VEHICLES are available in your household?**

- 0
- 1
- 2
- 3 or more

18. Do you have any comments or other feedback regarding this survey that you'd like to share?

Sampling Techniques:

Sampling is the process of selecting units (e.g., individuals, households, organizations, etc.) from a general set of population. By studying the traits of units in the sampleand generalizing the results back to the population, we can draw conclusions regarding the opinions and the tendencies of the larger target group. There are two types of sampling techniques:

- ß Probability Sampling - A sampling technique where by using some form of random selection procedure, different units of the population are given equal probabilities of being chosen.
- ß Non-Probability Sampling - A sampling technique where the non-randomprocedure used in selecting samples of the target population does not give all the members of the population equal chances of being selected.

In general, probability sampling techniques require random selection of units from a target population, whereas samples drawn under the non-probability sampling techniques are non-random samples andare subject to sampling bias.

Survey results, which are based on statistically valid random samples, may be generalized back to the target population in order to reveal their opinions and/or preferences. The same can be done with surveys that are based on non-random sampling techniques, provided that using valid statistical procedures, the bias inherent in such samples are corrected.

Examples of a number of procedures falling under the above two sampling techniques are shown in the table on the next page.

Examples of Sampling Techniques

Probability Sampling	Non-Probability Sampling
A sampling technique where by utilizing some form of random selection, different units of the population are given equal probabilities of being chosen.	A sampling technique where the non-random procdure used in selecting samples of the population does not give all the units in the population equal chances of being selected.
1) Simple Random Sampling - Easy to implement, results can be generalized from the sample back to the population, may not get good representation of subgroups in a population.	1) Convenience Sampling ñ Involves selecting the units that are easiest to access. A good example is interviewing the nearest passer-by for a quick, but non-representative, reading of public opinion.
2) Stratified Random Sampling ñ Involves dividing the population into homogeneous subgroups and then taking a simple random sample in each subgroup. The resulting sample is representative of not only the overall population, but also key subgroups of the population. It enjoys higher statistical precision than simple random samples.	2) Quota Sampling - Units are selected non-randomly trying to meet a pre-defined sampling quota. This can be a proportional quota when the desire to represent the general population by certain proportions (e.g.males and females), or it can be a non-proportional quota where a minimum number of units for each predefined group are to be sampled so that all groups are better represented.
3) Cluster Random Sampling ñ Used primarily for efficiency of survey administration when a large geographical area is to be covered. The population is grouped into geographical clusters (e.g. counties), which are then randomly sampled, and all units within the sampled clusters are measured.	3) Self Selection Sampling ñ A non-random sample strategy, where individuals decide to take part in the survey and join the sampling group voluntarily and on their own accord. Usually intent for the survey is publicized and members of the target population are invited and encouraged to participate.

Advantages and Disadvantages of Self-selection Samples:

Three types of surveys, all using non-random self-selection samples, were conducted as part of this project:

- The online survey on the project website;
- Non-random Intercept surveys at Albertsons, Kroger, Walmart, a senior center, and the City Hall;
- City of Desoto employee survey (those residing within DeSoto proper).

A non-probability self-selection samplehas the following general characteristics:

- It is generally a low-budget sampling technique that takes advantage of accessibility ofsampling units (individuals or organizations) within a short period of time.
- Participants are usually those who tend to be motivated and committed to the cause (either in a positive or a negative way),and are willing to spend more time replying to the survey, which brings in more insight to the undertaken research.
- Because the respondents volunteer to participate in the survey, the sample tends to have a bias and not be representative of the target population. Therefore, without proper statistical corrections of the sampling bias, results cannot be generalized back to the larger population.
- Researchers use self-selection surveys to show the existence of a particular pattern or trait in the behavior of the target population.
- It can be safely used when it is not necessary to generalize the results to the entire target population.
- Self-selection surveys are usually used in the exploratory phase of a study, and are most likely followed by a random probability-sampling survey.

Despite the fact that a self-selection sample does not benefit from the random choice of selection of a probability sample, it remains a popular procedure in social study surveys.

Appendix C: Survey Data Analysis

DeSoto Public Transportation Feasibility Study Survey Results

The information reflected in this survey was collected at an early point in the project. Thus, the views and opinions expressed by survey participants represent a baseline rather than a response to the findings of the study. With the study now complete, new data should be collected to ascertain the public mood based on the findings and recommendations.

Number of Surveys

The total number of surveys considered for analysis was 647. All of the respondents were residents of DeSoto.

Duration of Stay in DeSoto

The following table shows the respondents' duration of stay in DeSoto. Those who have lived in the area for 10 years or less were approximately 49% and those who have lived longer were approximately 51%.

(Q02) Duration of Stay in DeSoto		
Duration	**Respondents**	**Percentage**
0-5 years	175	27.05%
6-10 years	144	22.26%
11-20 years	169	26.12%
Over 20 years	159	24.57%

Destination by Trip Purpose

The following table shows the destinations for different trip purposes for survey respondents.

(Q3-1) Destination by Trip Purpose Counts							
Destination	**1-Go To Work**	**2-Go To School**	**3-Doctor**	**4-Church**	**5-Res/Rec**	**6-Groceries**	**7-Shop**
No Response	182	493	94	134	102	63	84
Arlington	7	10	12	6	53		46
Carrollton/Farmers Branch Area	8	1	4	1			1
Cedar Hill	11	2	40	25	208	39	233
Dallas-Downtown Area	99	10	66	7	34		9
Dallas-North, East or West Area	65	15	94	69	53	11	64
Dallas-Oak Cliff/South Dallas	52	15	71	174	13	9	18
Denton/Lewisville Area	2						
DeSoto	106	41	170	120	130	494	146

(Q3-1) Destination by Trip Purpose Counts							
Destination	1-Go To Work	2-Go To School	3-Doctor	4-Church	5-Res/Rec	6-Groceries	7-Shop
DFW Airport	11	3		1			
Duncanville	11	5	44	41	16	11	9
Ellis County	6	4	5	8	5	2	
Fort Worth-Downtown Area	8	1		3	1		3
Garland/Mesquite/Rowlett Area	8	3	2	5	2		3
Glenn Heights	2			1			
Lancaster	12	12	11	14	3	12	2
Love Field Airport	1		1		1		
Other	43	25	12	24	25	4	26
Red Oak/Ovilla		6	13	9		1	
Richardson/Plano/Allen Area	12		6	4	1	1	2
Southeast Tarrant County	1	1	2	1			1

The following table shows the same information in percentages. Areas in the City of Dallas and the City of DeSoto are the major destinations for work trips. Of these Dallas Downtown ranks second with 15.3% to DeSoto's 16.38% of respondent's destinations for work. As for School trips, DeSoto ranks first as the destination with approximately 6.3% of school trips with areas in Dallas amounting to approximately 6.2% of school trips. DeSoto ranks first as the destination for trips to see doctors (26.28%) and buy groceries (76.35%) . The area including Dallas-Oak Cliff and South Dallas ranks first as the destination for church trips (26.89%) with DeSoto coming in second at 18.55%. survey respondents go to Cedar Hill as the top destination for restaurant/recreation (32.15%) and shopping (for clothes and household goods) trips (36.01%) with DeSoto ranking second with 20.09% of restaurant/recreation trips and 22.57% of shopping trips.

(Q3_A) Destination by Trip Purpose as Percentages							
Destination	1-Go To Work	2-Go To School	3-Doctor	4-Church	5-Res/Rec	6-Groceries	7-Shop
No response	28.13%	76.20%	14.53%	20.71%	15.77%	9.74%	12.98%
Arlington	1.08%	1.55%	1.85%	0.93%	8.19%		7.11%
Carrollton/Farmers Branch Area	1.24%	0.15%	0.62%	0.15%			0.15%
Cedar Hill	1.70%	0.31%	6.18%	3.86%	32.15%	6.03%	36.01%
Dallas-Downtown Area	15.30%	1.55%	10.20%	1.08%	5.26%		1.39%
Dallas-North, East or West Area	10.05%	2.32%	14.53%	10.66%	8.19%	1.70%	9.89%
Dallas-Oak Cliff/South Dallas	8.04%	2.32%	10.97%	26.89%	2.01%	1.39%	2.78%
Denton/Lewisville Area	0.31%						

(Q3_A) Destination by Trip Purpose as Percentages							
Destination	1-Go To Work	2-Go To School	3-Doctor	4-Church	5-Res/Rec	6-Groceries	7-Shop
DeSoto	16.38%	6.34%	26.28%	18.55%	20.09%	76.35%	22.57%
DFW Airport	1.70%	0.46%		0.15%			
Duncanville	1.70%	0.77%	6.80%	6.34%	2.47%	1.70%	1.39%
Ellis County	0.93%	0.62%	0.77%	1.24%	0.77%	0.31%	
Fort Worth-Downtown Area	1.24%	0.15%		0.46%	0.15%		0.46%
Garland/Mesquite/Rowlett Area	1.24%	0.46%	0.31%	0.77%	0.31%		0.46%
Glenn Heights	0.31%			0.15%			
Lancaster	1.85%	1.85%	1.70%	2.16%	0.46%	1.85%	0.31%
Love Field Airport	0.15%		0.15%		0.15%		
Other	6.65%	3.86%	1.85%	3.71%	3.86%	0.62%	4.02%
Red Oak/Ovilla		0.93%	2.01%	1.39%		0.15%	
Richardson/Plano/Allen Area	1.85%		0.93%	0.62%	0.15%	0.15%	0.31%
Southeast Tarrant County	0.15%	0.15%	0.31%	0.15%			0.15%

Travel Frequency by Trip Purpose

The following table shows the frequency of trips made by survey respondents for various trip purposes. As to be expected, work trips are the most frequent trips with 57.03% of people travelling 5 or more days per week. Buying groceries, going to church, and restaurant/recreation trips form the largest percentage of trips made 2-4 days per week at 36.48%, 31.99%, and 25.81% respectively.

(Q3_B) Travel Frequency by Trip Purpose							
Frequency	1-Go To Work	2-Go To School	3-Doctor	4-Church	5-Res/Rec	6-Groceries	7-Shop
No Response	29.68%	76.97%	20.09%	21.33%	17.00%	11.13%	14.68%
5 or more days per week	57.03%	11.90%	0.31%	0.62%	1.39%	1.85%	0.62%
2-4 days per week	10.82%	5.87%	2.78%	31.99%	25.81%	36.48%	12.83%
Once a month	0.62%	0.46%	16.85%	2.16%	13.60%	4.48%	23.49%
Once a week	1.08%	2.16%	5.10%	31.07%	22.10%	40.34%	22.26%
Weekends only		0.31%	0.15%	9.74%	13.45%	5.56%	11.28%
A few times a year	0.77%	2.32%	54.71%	3.09%	6.65%	0.15%	14.84%

The following table shows the travel modes used by survey respondents for various trip purposes. Driving alone is the dominant mode for work trips (59.04%), visiting doctors (73.42%), going to church

(42.97%), buying groceries (64.30%), and shopping for clothes and household goods (55.64%). Restaurant/recreation trips are often made sharing a ride with someone (46.52%).

Travel Mode by Trip Purpose

(Q3_C) Travel Mode by Trip Purpose							
Travel Mode	1-Go To Work	2-Go To School	3-Doctor	4-Church	5-Res/Rec	6-Groceries	7-Shop
No Response	28.28%	76.04%	16.38%	22.26%	17.00%	11.28%	14.68%
I drive alone	59.04%	16.54%	73.42%	42.97%	34.93%	64.30%	55.64%
I drive/ride with someone	7.42%	5.26%	8.50%	34.00%	46.52%	23.03%	28.13%
I park and ride public transit	2.63%	0.62%	0.31%		0.31%		
I walk	0.93%	0.46%	0.31%	0.31%	0.62%	0.62%	0.77%
Other	1.70%	1.08%	1.08%	0.46%	0.62%	0.77%	0.77%

Likelihood of Using Public Transportation

The following table shows the likelihood of survey respondents choosing some form of public transportation for different trip purposes. When one adds the responses 'May be' and 'Very Likely' as 'likely' responses, then one sees that a plurality of survey respondents (38.02%) making work trips are likely to use some form of public transportation as opposed to those not likely to do so (34.78%). For all other trip purposes, those not likely to use public transportation outnumber those likely to do so.

(Q3_D) Likelihood of Using Public Transportation							
Responses	1-Go To Work	2-Go To School	3-Doctor	4-Church	5-Res/Rec	6-Groceries	7-Shop
No Response	27.20%	74.34%	18.39%	24.88%	19.01%	14.37%	16.85%
Not likely	34.78%	13.14%	44.36%	48.22%	49.00%	56.26%	47.30%
Maybe	13.45%	3.25%	17.31%	12.06%	16.69%	16.54%	18.39%
Very likely	24.57%	9.27%	19.94%	14.84%	15.30%	12.83%	17.47%

Work Destination by Likelihood of Using Public Transportation

The following table shows the likelihood of work trips to various destination areas being made by survey respondents using public transportation. Dallas Downtown has the maximum number of likely public transportation users followed by DeSoto and other parts of Dallas.

Work Destination by Likelihood of Using Public Transportation					
Destination	**Total**	**No Response**	**Not likely**	**Maybe**	**Very likely**
No Response	182	166	8	1	7
Arlington	7		5		2
Carrollton/Farmers Branch Area	8		4	3	1
Cedar Hill	11		6	4	1
Dallas-Downtown Area	99	1	31	19	48
Dallas-North, East or West Area	65	2	29	9	25
Dallas-Oak Cliff/South Dallas	52		24	10	18
Denton/Lewisville Area	2			1	1
DeSoto	106	2	65	18	21
DFW Airport	11		7	1	3
Duncanville	11		7	3	1
Ellis County	6		3	1	2
Fort Worth-Downtown Area	8		4	3	1
Garland/Mesquite/Rowlett Area	8	1	2	1	4
Glenn Heights	2		1		1
Lancaster	12		5	3	4
Love Field Airport	1				1
Other	43	2	22	8	11
Richardson/Plano/Allen Area	12	2	1	2	7
Southeast Tarrant County	1		1		

Concerned about Traffic in DeSoto in 5-10 Years

The following table illustrates the number of survey respondents concerned about the roadway traffic congestion in DeSoto in 5 to 10 years. A majority of the survey respondents are at least moderately concerned about traffic congestion in DeSoto.

(Q4_1) Concerned about Traffic in DeSoto in 5-10 Years		
Level of Concern	Respondents	Percentage
No Response	11	1.70%
Not concerned	153	23.65%
Slightly concerned	156	24.11%
Moderately concerned	148	22.87%
Very much concerned	179	27.67%

Concerned about Traffic in the DFW Area in 5-10 years

The following table shows how many survey respondents are concerned about the traffic situation in the DFW area in 5 to 10 years. About 70% of survey respondents are at least moderately concerned about traffic congestion in the DFW area.

(Q4_2) Concerned about Traffic in the DFW Area in 5-10 years		
Level of Concern	Respondents	Percentage
No Response	12	1.85%
Not concerned	98	15.15%
Slightly concerned	84	12.98%
Moderately concerned	143	22.10%
Very much concerned	310	47.91%

Concerned about Air Quality

The following table shows the extent of concern about air quality among the survey respondents. About 67% of the survey respondents were moderately or very much concerned about air quality.

(Q4_3) Concerned about Air Quality		
Level of Concern	Respondents	Percentage
No Response	14	2.16%
Not concerned	76	11.75%
Slightly concerned	122	18.86%
Moderately concerned	136	21.02%
Very much concerned	299	46.21%

Concerned about Price of Gas

The following table shows the extent of concern about price of gas among the survey respondents. Approximately 73% of the respondents were very much concerned about the gas price.

(Q4_4) Concerned about Price of Gas		
Level of Concern	**Respondents**	**Percentage**
No Response	15	2.32%
Not concerned	31	4.79%
Slightly concerned	59	9.12%
Moderately concerned	69	10.66%
Very much concerned	473	73.11%

Concerned about Aging Population

The following table shows that more than 66% of survey respondents were at least moderately concerned about transportation choices for the aging population in DeSoto.

(Q4_5) Concerned about Aging Population		
Level of Concern	**Respondents**	**Percentage**
No Response	13	2.01%
Not concerned	97	14.99%
Slightly concerned	104	16.07%
Moderately concerned	136	21.02%
Very much concerned	297	45.90%

Concerned about Ability To Drive in 5-10 Years

The following table shows that only approximately half of the respondents were concerned at least slightly about their losing the ability to drive in the next 5-10 years.

(Q4_6) Concerned about Ability To Drive in 5-10 Years		
Level of Concern	**Respondents**	**Percentage**
No Response	24	3.71%
Not concerned	318	49.15%
Slightly concerned	99	15.30%
Moderately concerned	83	12.83%
Very much concerned	123	19.01%

Preferred Service Destination

The following table indicates the first choice for public transportation desired by survey respondents. A plurality of the respondents (27.98%) desired service to DART communities as their first choice followed by those desiring service within DeSoto (18.55%).

(Q5) First Choice for Preferred Service Destination		
Destination	**Respondents**	**Percentage**
No Response	58	8.96%
DFW Airport/Love Field	102	15.77%
DeSoto	120	18.55%
DART communities	181	27.98%
Neighboring Suburbs	81	12.52%
Downtown Dallas	105	16.23%

Weighting the first choice with a value 3, second choice with value 2, and third choice with value 1, and multiplying the number of responses for each choice with its weight, we get the following weighted distribution of service destination preferred by the respondents. Service to DART communities ranks as number one service destination, with DeSoto coming in at third place.

(Q5) Weighted Choice for Preferred Service Destination	
Destination	**Weighted Response**
DFW Airport/Love Field	745
DeSoto	687
DART communities	853
Neighboring Suburbs	558
Downtown Dallas	619

Preferred Service

The following table shows the first choice for the type of service preferred by the respondents. Park and Ride facilities constructed by City of DeSoto ranks as the most preferred service (28.59%), followed by vanpools (16.72%), local transportation within DeSoto (13.93%), and carpools (12.54%).

(Q6) First Choice for Preferred Service

Service	Respondents	Percentage
No Response	37	5.73%
Local Transportation within DeSoto	90	13.93%
City Constructed P & R	185	28.59%
Express to Popular Destinations such as Dallas Downtown and DFW Airport	65	10.05%
Carpooling matched by City of DeSoto	81	12.54%
Vanpooling using vehicles leased by the City	108	16.72%
Special Transportation service for Elderly and disabled	59	9.13%
Public Transportation Not Needed	16	2.48%
Express To Existing DART P&R and transit centers	6	0.93%

When the preferred service types are weighted with value 3 for first choice, value 2 for second choice and value 1 for third choice, we get the distribution in the following table. The top choices are City constructed Park& Rides, Local Transportation within DeSoto, Carpools, and Express to popular destinations such as Dallas Downtown and DFW Airport in decreasing order of preference. Vanpools sink to the bottom.

(Q6) Weighted Choice for Preferred Service	
Service	**Weighted Response**
Local Transportation within DeSoto	592
City Constructed P & R	895
Express to Popular Destinations such as Dallas Downtown and DFW Airport	476
Carpooling matched by City of DeSoto	507
Vanpooling using vehicles leased by the City	108
Special Transportation service for Elderly and disabled	378
Public Transportation Not Needed	166
Express To Existing DART P&R and transit centers	133

Work Destination by First Choice of Service Type

The following table shows the first work trip choice by service type to different destination areas. Very few of respondents working in DeSoto chose local transportation within DeSoto as their first choice. A plurality of them chose Park and Rides constructed by City as their first choice. Interestingly, a plurality of people who worked in Dallas Downtown chose local transportation within DeSoto as the first choice followed by DeSoto constructed Park and Rides. There seems to be significant interest in carpools and vanpools from respondents working in DeSoto and Dallas.

Work Destination by First Choice of Service Type									
Destination	No Response	Local Transportation within DeSoto	City Constructed P & R	Express to DFW Airport and Dallas Downtown	Carpooling Matched by City	Vanpooling using vehicles leased by City	Special Transportation Service for Elderly and Disabled	Public Transportation Not Needed	Express To Existing DART P&R and Transit Centers
No Response	14	22	66	19	18	15	19	7	2
Arlington		2		2		3			
Carrollton/Farmers Branch Area	1		1	1	2	1	2		
Cedar Hill	1	1	2		1	4	1	1	
Dallas-Downtown Area	4	24	22	10	12	16	7	4	
Dallas-North, East or West Area	6	7	15	5	10	14	6	1	1
Dallas-Oak Cliff/South Dallas	2	7	11	7	6	10	7	1	1
Denton/Lewisville Area		1	1						
DeSoto	6	9	34	13	13	23	8		
DFW Airport		3	1		3	1	1	1	1
Duncanville		2	4		2	3			
Ellis County			4	1		1			
Fort Worth-Downtown Area		1	2		2	2	1		
Garland/Mesquite/Rowlett Area	1	3	1	1	2				
Glenn Heights			1		1				
Lancaster	1	2		2	3	3	1		

Work Destination by First Choice of Service Type									
Destination	No Response	Local Transportation within DeSoto	City Constructed P & R	Express to DFW Airport and Dallas Downtown	Carpooling Matched by City	Vanpooling using vehicles leased by City	Special Transportation Service for Elderly and Disabled	Public Transportation Not Needed	Express To Existing DART P&R and Transit Centers
Love Field Airport		1							
Other	1	5	16	4	1	10	4	1	1
Richardson/Plano/Allen Area			4		5	1	2		
Southeast Tarrant County						1			

Persons Best Served by Public Transportation

The following table shows whom the survey respondents think as the ones who will be best served by any public transportation service within DeSoto. Clearly the elderly who are not able to drive and the disabled are thought of as being benefited by public transportation services.

(Q7) First Choice for Persons Best Served by Public Transportation		
Persons Best Served by Public Transportation	Respondents	Percentage
(No Response)	51	7.89%
Commuters working in other cities	125	19.35%
Families with Limited Auto Availability	75	11.61%
School Age Children	28	4.33%
Disabled	142	21.98%
Elderly Not Able to Drive	226	34.93%

The following table of weighted choices also corroborates the view that the elderly who are not able to drive and the disabled are thought of as being benefited by public transportation services.

(Q7) Weighted Choice for Persons Best Served by Public Transportation	
Persons Best Served by Public Transportation	**Weighted Response**
Commuters working in other cities	652
Families with Limited Auto Availability	536
School Age Children	302
Disabled	865
Elderly Not Able to Drive	1123

Use of Public Transportation Last Year

The following table shows that 3 out of 5 respondents have not used public transportation in the last year.

(Q08) Used Public Transportation Last Year		
Used	**Respondents**	**Percentage**
No	400	61.82%
Yes	247	38.18%

Potential Public Transportation Use for Regular Trips

The following table shows the potential users of public transportation for regular trips among the respondents. These numbers are larger than the numbers of responses affirming the likely use of transit in Question 3. This may be because even a person saying that he/she is 'not likely' to use public transportation does not really rule out the possibility of using public transportation and hence does not say he/she 'would not use public transportation'.

(Q09) Potential Public Transportation Use for Regular Trips		
Would Use?	**Respondents**	**Percentage**
Yes	297	45.90%
No	196	30.29%
Maybe	154	23.80%

Household Size

The following table shows the survey respondents' household size distribution. The median household size seems to be two.

(Q10) Household Size		
Household Size	Respondents	Percentage
No Response	2	0.31%
1	97	14.99%
2	239	36.94%
3	138	21.33%
4	101	15.61%
5 or more	70	10.82%

The Elderly in Household

The following table shows the number of elderly persons among the respondents' households. Seventy percent of the households do not have any elderly persons.

(Q11) The Elderly in Household		
Persons 65 or Over	Respondents	Percentage
No Response	1	0.15%
0	453	70.02%
1	115	17.77%
2	77	11.90%
3		
4		
5 or more	1	0.15%

Children in Household

The following table shows the number of children of age 15 or younger in the respondents' households. 67.54% of survey respondents had no children of age 15 or younger in their household.

(Q12) Children in Household		
Persons of Age 15 or Younger	Respondents	Percentage
No Response	4	0.62%
0	437	67.54%
1	93	14.37%
2	80	12.36%
3	24	3.71%
4	7	1.08%
5 or more	2	0.31%

Gender of Respondents

The following table shows that 67.39% of respondents were female. This is higher than the female percentage in DeSoto population. Usually surveys of DART riders show more female respondents than male. The present result seems to suggest that transportation may be of more importance to females and hence their responsiveness to the survey.

(Q13) Gender of Respondents		
Gender	**Respondents**	**Percentage**
No Response	1	0.15%
Male	210	32.46%
Female	436	67.39%

Age Distribution

The age distribution of survey respondents is shown below. Persons in the 35-64 age group comprise about 68% of the respondents. Persons younger than 35 form less than 10% of the total.

(Q14) Age Distribution		
Age, Years	**Respondents**	**Percentage**
No Response	6	0.93%
16 - 17	8	1.24%
18-24	11	1.70%
25-34	46	7.11%
35-44	131	20.25%
45-54	136	21.02%
55-64	172	26.58%
65-70	66	10.20%
over 70	71	10.97%

Annual Household Income

The distribution of annual household income distribution of the survey respondents is shown below. The median household income falls in the $50,000 - $74,999 range.

(Q15) Annual Household Income		
Income	Respondents	Percentage
No Response	50	7.73%
Less than $15,000	23	3.55%
$15,000 - $24,999	36	5.56%
$25,000 - $34,999	37	5.72%
$35,000 - $49,999	85	13.14%
$50,000 - $74,999	150	23.18%
$75,000 - $99,999	126	19.47%
$100,000 or more	140	21.64%

Household Drivers Licenses

The following table shows that about 57% of the households have two persons with driver's licenses. Households with no driver's license amount to less than 1%.

(Q16) Household Drivers Licenses		
Number of Drivers Licenses	Respondents	Percentage
No Response	4	0.62%
0	5	0.77%
1	139	21.48%
2	366	56.57%
3	99	15.30%
4	29	4.48%
5 or more	5	0.77%

Vehicles in Household

The following table shows that 97% of the households have at least one car. Approximately 45% of the households have two cars.

(Q17) Vehicles in Household		
Number of vehicles	Respondents	Percentage
No Response	4	0.62%
0	16	2.47%
1	157	24.27%
2	288	44.51%
3 or more	182	28.13%

Text Comments

The following table indicates the text comments by the survey respondents categorized by issue of concern and whether they viewed public transportation negatively or neutrally or positively. On the whole the number of positive comments (115) exceeded the number of negative comments (107).

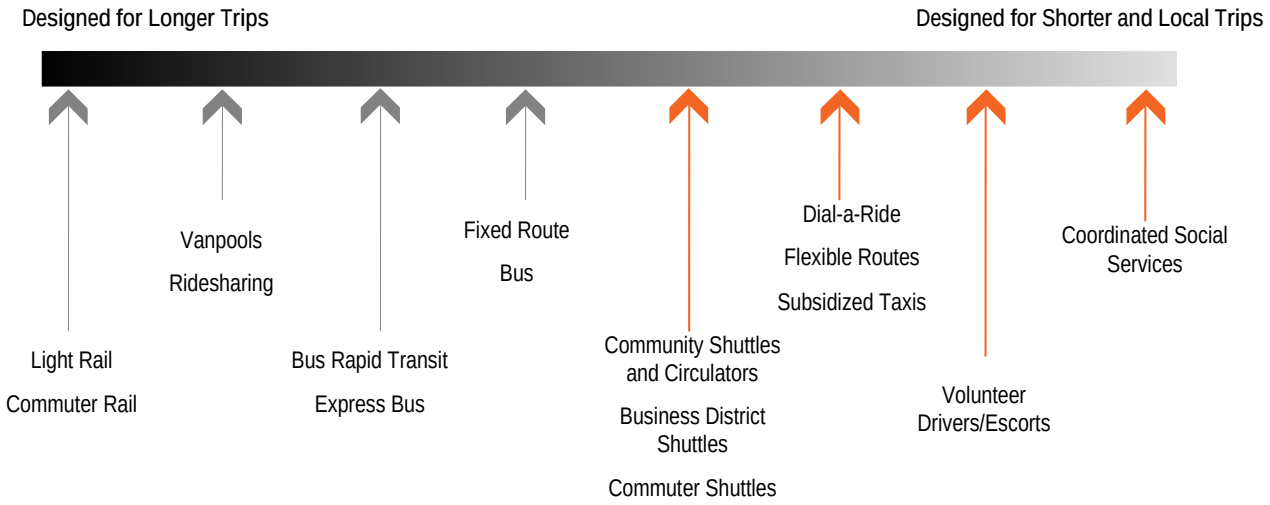
Q18_Category					
Q18_Category	**No Response**	**Negative**	**Neutral**	**Positive**	**Total**
No response	352				**352**
Airport				1	**1**
Comment about survey		8	3	2	**13**
Convenience/independence			2	18	**20**
Crime/safety/traffic		50	1	3	**54**
Economic		10	1	11	**22**
Elderly/disabled		1	5	22	**28**
Environment		1		3	**4**
Errands/work/doctor/school				7	**7**
Generic		42	29	67	**138**
Limited transit		4	1	2	**7**
Vote on the issue			1		**1**
Total	**352**	**107**	**38**	**115**	**647**

Appendix D: Types of Transit Service

The Transit Toolbox

Public Transportation Service Options for DeSoto

Around the world a broad range of public transportation services have been invented that may prove applicable to DeSoto. These go beyond traditional bus and rail services, including a wide range of strategies, each with its own unique features designed to meet different types of community needs. While they can be classified in many ways, the chart below lists 15 different types of public transportation, divided according to the length of trips they typically accommodate. Depending upon the community's goals, each may have a role in DeSoto's transportation future and is discussed in more detail in the sections following.



Commute Transportation Options

Longer distance commute travel places special demands on a transportation system. To effectively compete with private autos public transportation needs to provide speedy travel, as well as reliable and comfortable service. A number of strategies to accomplish this are in use.

Commuter Rail

Commuter rail is typically designed to link city center employment locations with outer suburbs. Trains typically operate on a schedule at speeds from 30 to 125 mph. Most commuter trains are different from light rail in several ways:

- They are larger
- They provide more seating and less standing room
- Normally have a lower frequency of service

- Serve lower-density areas, typically by connecting suburbs to the city center
- Share track with intercity or freight trains
- Are not fully grade separated (containing grade crossings with crossing gates)

Many, but not all, newer commuter railways offer service during peak times only, and on a round-trip basis. For example, West Coast Express commuter rail runs trains only into Downtown Vancouver during the morning rush hour, and out to the suburbs during the evening rush hour. Many older, established commuter rail services operate their routes on an seven day a week basis, with services running through from early morning to just after mid-night. Some, like the Long Island Rail Road (LIRR), operate key routes on a 24/7 basis. On many of these older systems, patrons use the trains not just for work, or school, but for attending sporting events, concerts, theatre, and the like. Some also provide service to popular week-end getaway spots, and recreation areas.

New Mexico RailRunner Commuter Rail

Commuter trains are typically connected to bus services both at their destination and along their route to extend the range of accessibility.

Applicability to DeSoto

Two possible future commuter rail services may come near to DeSoto in the future. The Midlothian Line would serve station locations in Duncanville and Cedar Hill while the Waxahachie Line would serve Lancaster. While neither service is funded, both would significantly impact DeSoto resident's travel options. Assuming that park and ride facilities would be provided at the rail stations, residents would be able to access either service via local city streets. Feeder bus services, linking residential neighborhoods in DeSoto with rail stations, would also be possible.

Because these rail service are outside the timeframe for this study, possible services linking to the rail stations are not being considered for now. However, they will become a realistic possibility whenever these two lines open for commuter rail operations.

Light Rail

Light rail provides urban rail service that operates in a combination of exclusive rights-of-ways and mixed traffic. It is typically operated with one to three car trains and is designed to serve high volume corridors at moderate speeds.. One line of light rail has a theoretical capacity of up to 8 times more than one lane of freeway (not counting buses) during peak times.

Valley Metro Rail Light Rail Service

The DART light rail system comprises 48.6 miles (78.2 km) between its three lines — the Red Line, the Blue Line and the Green Line. DART's light rail system has a daily ridership of 57,700 average trips per weekday. The following lines are currently active:

- Red Line (Opened in 1996, completed in its current state in 2002)
- Blue Line (Opened in 1996, completed in its current state in 2002, additions scheduled for completion in 2012 and 2018)
- Green Line (Opened in 2009, completed in its current state on Dec. 4, 2010)

The Orange Line, connecting to Irving/DFW is under construction, with a proposed opening in 2011. The DART board has agreed to extend Orange Line to Terminal A in DFW Airport by 2014.

Westmoreland is a station located in the Oak Cliff neighborhood at Illinois Avenue and Westmoreland Road. It opened in 1996 and is the southwest terminus of the Red Line, serving the nearby residential and commercial areas and featuring bus service to Southwest Center Mall.

Ledbetter Station is located in the Oak Cliff neighborhood. It is near the Intersection of Lancaster Road and Ledbetter Drive. It opened in 1997, and is the southern terminus of the Blue Line, serving Paul Quinn College and Cedar Valley College.

Applicability to DeSoto

While there is no near-term prospect for extending light rail service to DeSoto, a shuttle that links DeSoto with the Ledbetter and/or Westmoreland Station is a realistic possibility. A major element of this feasibility study will be the identification of current and future demand to these stations. We do note that, at present, the park and ride lots at each station have significant excess capacity.

Bus Rapid Transit

A relatively new innovation, Bus Rapid Transit (BRT) systems combine the features of light rail and traditional express bus services. Things that set BRT apart from other bus services include:

- Operation on a dedicated right of way
- Less frequent stops
- Off board fare collection
- Very frequent service
- Specialized vehicles

Examples of Best Practices

Los Angeles is developing a comprehensive network of BRT services that will blanket the region with a network of fast and convenient services. These are designed to complement that region's rail and local bus systems, offering a full range of public transportation option. BRT is specifically designed to operate along high-volume corridors that have high levels of passenger demand.

Applicability to DeSoto

BRT generally requires substantially higher population concentrations than currently exist in DeSoto and the Best Southwest area. It is presented here as an example of the types of innovative transportation solutions that are emerging in other parts of the country.

Express Bus

Express bus service provides fast limited stop bus service that is typically designed to serve moderate to long distance commute trips to and from major employment areas. Express bus service often operates only during peak commuting periods, but in some high volume areas, provides all day service. Many express bus services are anchored from a park and ride lot, continuing to major employment areas. While most express bus services are designed to serve commuter markets, others find sufficient demand to support all-day services linking suburban communities with central business districts.

Maricopa Xpress

Examples of Best Practices

Express bus service is provided in nearly all major urban areas, and typically operates from outlying areas. Valley Metro operates a large express network in Maricopa County, the City of Maricopa provides Maricopa Xpress express bus service between Maricopa, Phoenix, and Tempe. The Denton County Transit Authority (DCTA) provides a similar service that links Denton and Lewisville with Downtown Dallas. Similar to DCTA, but on a larger scale, the 'Seattle Express' service links Tacoma with Downtown Seattle. This service operates seven days a week, with a bus about every five minutes during rush hours.

Applicability to DeSoto

DART already operates a successful bus route that links Glenn Heights with Downtown Dallas. Based from a park and ride lot located on E. Bear Creek Road near its intersection with I-35E, this route is patronized by DeSoto residents, especially people living in the south end of town.

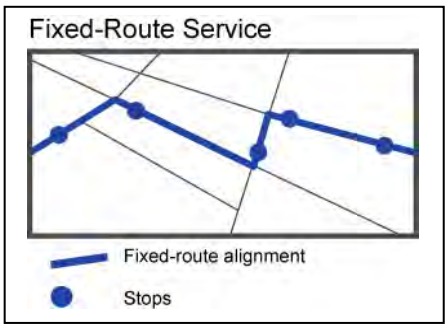
Many express routes include intermediate stops and some people have suggested that a park and ride stop could be located along I-35E, possibly in the vicinity of Baseline Road. Alternatively, new express routes, linking DeSoto with Downtown Dallas, the DFW area, or other major employment zones could be established.

Local Transportation Options

While there is a broad range of commute transportation services, it is dwarfed by the number of different local services in operation around the country. Many of these have the potential to be adapted for use in DeSoto.

Fixed Route Bus

Fixed-route bus services operate along a fixed route at set times and headways. Services typically operate with designated stops or as a flag stop service, where riders "flag down" the bus at any safe location along the route. Fixed-route service works in areas of concentrated travel demand, for example downtown shopping and business districts and where significant concentrations of people live or stay close enough to major destinations that they can be linked by a feasible bus route.



There are a number of advantages associated with fixed-route service:

- It has the ability to carry large numbers of people
- It tends to be cost efficient if there is enough demand
- Fixed route services tend to have good schedule reliability if proper planning efforts have been undertaken
- Because they have a set schedule, passengers are able to make spur of the moment trips without advance reservations
- This is a familiar service concept that is easy for passengers to understand
- Where large residential concentrations fixed route services can link these neighborhoods to rail stations

To be successful, fixed route bus services tend to require at least moderate levels of employment or residential density. Generally, the ¼ mile corridor on each side of a fixed route need between 3,000 and 4,000 employees and/or residents per square mile on average throughout the entire length of the route in order to provide a large enough market to support a bus route operating every 30 minutes.

Whenever a public entity operates a fixed-route transit service, it is required by the Americans with Disabilities Act to provide "complementary paratransit" to serve people who cannot use the fixed-route service due to a disability. The complementary paratransit service is required to and from all locations within three-quarters of a mile of the route, regardless of city or county boundaries, whenever it operates. This means that any fixed-route services operating in DeSoto will need to be supplemented by a separate paratransit service. The ADA also requires that vehicles used in fixed-route transit service operated by a public entity be accessible to people with disabilities, including wheelchair users.

Applicability to DeSoto

DeSoto faces to significant hurdles before fixed route bus services could successfully operate. The first is that the city is a relatively limited area. Most trips that DeSoto residents make extend beyond the city limits so a bus service that is confined to the city would have limited value for most resident trips. Additionally, with the possible exception of the Hampton Road Corridor, DeSoto's suburban residential land use patterns do not provide sufficient densities to support local fixed route service.

It may be that one or more DART routes could be cost-effectively extended into DeSoto. They might be able to balance DeSoto's lower densities with stronger markets in Southern Dallas in order to create a viable service. However, because DeSoto is not part of the DART system, this does not appear to be a realistic alternative, at least in the short term.

Community Circulators

Community circulators are fixed-route, fixed-schedule transit routes. They have a number of features that distinguish them from regular fixed-route bus routes, primarily that they are designed to be particularly attractive to specific groups such as older adults or school children. For a circulator designed to appeal to older people, drivers are trained to provide extra assistance in boarding and alighting, sometimes even helping with packages. The focus is on convenience, with an emphasis on ease of use and highly-personalized driver service, at the expense of direct routing.

Community circulators often have winding routes that provide "front door" service to key locations like community or senior centers, major retail locations, and schools. While community bus routes have the greatest applicability and success rate in medium to high-density areas, they also work in places where they can link high density housing to shopping, medical, and public services and more regional services (bus/rail) within a confined area. Community bus routes typically use small low floor buses able to operate on neighborhood streets and enter easily driveways and parking lots.

Community bus routes can enhance travel options in areas which lack fixed-route systems, increasing traveler independence, and possibly reducing demand for paratransit services. In order to create a community route system, funds must be secured for capital, administrative and operating expenses, and the sponsoring agency must develop service, implementation and marketing plans.

Examples of Best Practices

Many different 'flavors' of community circulators operate across the country. Many combine aspects of other transit strategies in order to serve unique local needs. Here are two examples of fairly pure circulators.

The Menlo Park Midday Shuttle is a free bus route that operates on an hourly schedule in the midday between 9:30 AM and 3:30 PM. Two 20-passenger buses operate on a single route connecting senior housing, grocery stores, senior centers, the library, shopping centers, medical facilities, and downtown Menlo Park. The Midday Shuttle was designed to serve the needs of older adults and indeed has proven to be popular with seniors. Drivers pick up and drop off passengers at the front door, and drivers are able to help passengers carry packages and groceries onto the bus. This shuttle stops at all SamTrans stops, and is also a flag service, stopping on request wherever it is safe to do so.

Broward County Florida established community bus routes in 15 communities to provide more convenient mobility options for seniors and persons with disabilities; to divert ADA paratransit trips to a less costly service; and to streamline regional services. The operation has been successful in achieving all of these goals.

Applicability to DeSoto

Community circulators are likely to be a successful strategy for DeSoto. The area has a combination of lower-density residential and industrial areas and more dense business areas and corridors. Further study of transportation gaps would inform the planning process for additional community circulators for this area.

One challenge that DeSoto would face are the large number of travel destinations that are outside the city limits. For a community circulator service to be successful, it would likely need to extend outside the city limits. Additionally, DeSoto is a large enough spatial area that it would be both costly and difficult to serve every neighborhood in the city. Decisions regarding which neighborhoods should be served would need to be made.

Business District Shuttles

Business District Shuttles typically travel short routes in areas of relatively dense development, such as a downtown shopping district. Large employers, government buildings of interest to the general public, and concentrated residential areas may also be served. These services let people park once and conduct all their business, let employees who have commuted by transit conduct business during their lunch hour, and let downtown area residents conduct business without using a car. A well-designed business district shuttle should follow these basic principles:

- *Clearly defined purpose*, since good shuttles can never serve all possible markets well

- *Frequency* sufficient to compete with walk trips and short car trips
- *Directness* to improve travel time and ensure passengers can understand the service, using the same street in both directions.
- *Easy to understand*, including the route, frequency, stop locations and hours of operation
- *Free* -- nothing encourages non-regular riders to take transit more than free service.
- *Strong identity* – vehicles, stops and marketing should clearly distinguish the shuttle from the "regular bus"

Examples of Best Practices

The Emery Go Round in Emeryville, CA is a free shuttle service sponsored by a consortium of large employers, developers, and retailers. Service connects the MacArthur BART station and the Emeryville Amtrak station with routes serving a large number of corporate centers, schools, stores, hotels, and neighborhoods. Buses run every day, with a frequency of 10-12 minutes during weekday commute hours.

In San Mateo County, the Burlingame Trolley is a free service running seven days a week, from 11:35 AM to 9:38 PM, connecting hotels east of Highway 101 with the Burlingame shopping districts and Caltrain stations. This is one of three trolley systems funded by regional planning boards, downtown business, hotels, and the City. To be convenient for hotel guests and shoppers, the Trolley operates seven days a week.

Applicability to DeSoto

Business district shuttles are likely less suited to DeSoto than the community circulators discussed in the previous section. DeSoto does not have a strong downtown, nor does it have widespread parking problems. This strategy may be more appropriate for other Best Southwest cities, especially Cedar Hill.

Commuter Shuttles

Commuter shuttles share some features with community circulators, such as use of small vehicles and short routes. Commuter shuttles typically connect a transit hub and one or more employment sites, or to nearby residential concentrations. They usually operate only during the morning and evening peak, so opportunities exist to share vehicles and/or drivers with community circulator services during the midday.

Examples of Best Practices

In the San Francisco area, Caltrain and SamTrans operate shuttles, which connect Caltrain and BART with major employers along the Peninsula. Commuter shuttles are often employer-subsidized as they may attract employees and reduce the need for onsite parking.

San Leandro, in Alameda County, undertook redevelopment efforts starting in the 1960's to revitalize undeveloped and blighted areas. One of these districts was West San Leandro, where abandoned and underused land was redeveloped into a diverse commercial and industrial area. In 2001, in response to the lack of public transportation in this area, the city of San Leandro created a free shuttle service, "LINKS" to connect the San Leandro BART station with residential and employment centers in West San Leandro. Service is provided on weekday mornings from 5:45am to 9:30am and evenings from 2:00pm to 7:30pm, with 20-minute headways, using 40-passenger CNG-fueled, wheelchair-accessible buses. There are a total of 11 stops on the routes, with intermediate stops along the way on an as-needed basis. Because of the service gap in the middle of the day, this program works in conjunction with a "Guaranteed Ride Home" program sponsored by Alameda County.

The San Leandro Transportation Management Organization (SLTMO), a 501 C (3) non-profit corporation, was formed to handle the day-to-day operations and to provide operational oversight of the LINKS. The West San Leandro Shuttle Business Improvement District (BID) was established by the San Leandro City Council in 2005 to partially fund LINKS. In recognition of the benefits to the local economy, about 35 percent of the total cost of the LINKS Shuttle is funded by over 300 businesses in this assessment district. The Redevelopment Agency and regional transportation and air quality agencies provide the remainder of the funding.

Applicability to DeSoto

Applicability of commuter shuttles to DeSoto is limited. They likely have a larger purpose transporting DeSoto residents to DART rail services but may be able to increase their market by also providing transportation from the rail stations to local employers.

Dial-a-Ride

In dial-a-ride service, vehicle routing is determined entirely or primarily in response to passenger requests. Typically passengers may request to be picked up from and taken to any safe location within the defined service area. Dial-a-ride services are called "door-to-door" if drivers assist passengers between vehicles and the front door of pickup and drop-off locations, otherwise the service is called "curb-to-curb." In a large dial-a-ride system, with multiple vehicles operating throughout a large service area, trips must be requested through a call center where vehicles are scheduled and dispatched. In smaller settings it is common to have a single vehicle providing

dial-a-ride service in a small area, with all requests received and scheduled by the driver. Dial-a-Ride service sometimes includes taxi subsidy programs, described later.

A common approach of dial-a-ride service is to make regularly scheduled stops at a rail station, transit hub, or large activity center. The stop locations are sometimes called “checkpoints” and the service type is sometimes called “feeder” or “connector” service. Passengers who board at the checkpoint do not need a reservation and may request to be dropped off anywhere in the defined service area. Passengers who want to be picked up at other locations need to call, usually directly to the driver. In order to serve all the passengers who board without a reservation (as well as some pickup requests that may have been phoned in) and still make it back to the checkpoint at the scheduled time, the driver may negotiate pickup and drop-off points up to a few blocks from some passengers’ ultimate destination or origin.

Dial-a-Ride service is highly personalized service, somewhat like a shared taxi ride. Once clients understand how to make reservations and standing appointments, this kind of service can be extremely valuable for those who can’t walk far or take regular public transportation.

Critical decisions for a dial-a-ride service include the size of the area to be served, how far in advance requests will be taken, whether requests will be phoned directly to the driver or through a dispatcher, and whether unscheduled boardings will be allowed at a transfer point with a bus or rail route. A large service area may generate high levels of demand, but also limits the number of trips that can actually be served with each vehicle since each trip is likely to be longer than in a smaller service area. If unscheduled boardings are allowed at a transfer point, the area served needs to be balanced against the service frequency and the number of vehicles used. For example, if it is desired to meet a train every 30 minutes using one vehicle, then the service area needs to be small enough that all the likely drop-off points can be served and the vehicles can return to the transfer point in 30 minutes.

Examples of Best Practices

In San Mateo County, the Bayshore/Brisbane Senior Shuttle provides Dial-a-Ride service through a pilot program funded by SamTrans and the San Mateo County Transportation Authority. The Shuttle operates request-ride service during the midday and connects to the Bayshore Caltrain Station. Passengers may request rides for any purpose within the service area. To request a ride, the passenger must call the driver’s cell phone and leave a message stating when and where they would like to be picked up and dropped off. The driver will then return the call and work out the schedule with the passenger.

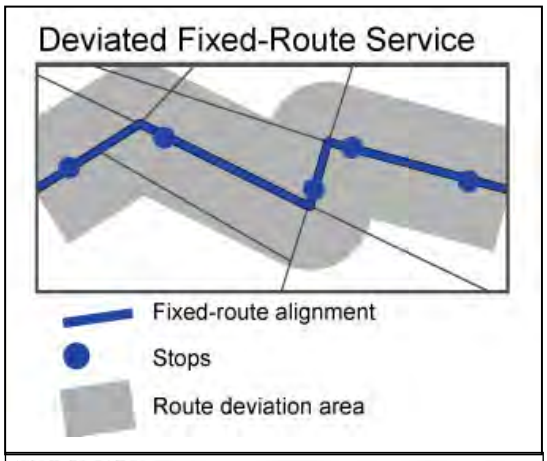
Applicability to DeSoto

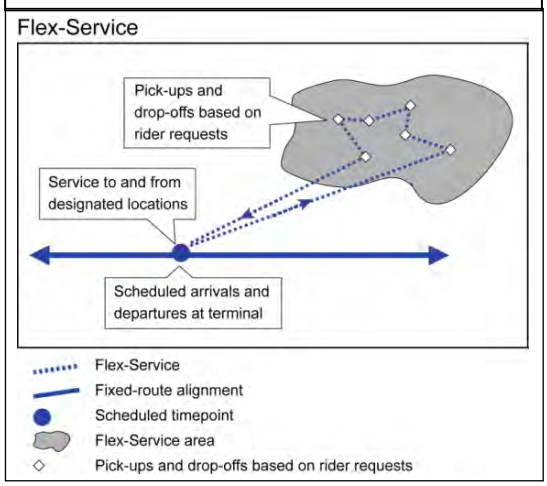
Given the relatively low density and the lack of adequate fixed-route transit coverage, Dial-a-Ride service might be a good fit for this area.

Deviated Fixed Routes

Deviated fixed-route service is a variation of fixed-route service that travels off of the fixed route to provide curbside service in certain locations. When there are no requests for the deviation, service operates in the same manner as standard fixed-route service.

In order to be dropped off of the normal route, riders simply request the service from the driver when they board the bus. For pick-ups, riders must call the transit system in advance with the location where they want to be picked-up, and the time or trip that they want to be picked-up by. Specific reservation procedures vary and are determined by the transit system based on factors such as policy, level and type of demand, and other factors.





Deviated fixed-route service is typically used in rural and suburban areas to expand service coverage. As a result, if deviated fixed-route service is provided, it is not also necessary to provide complimentary paratransit service.

A variant of the deviated fixed route concept are flex services. At one end, it operates on a fixed schedule to and from specific locations. At the other end, it operates within a designated flex-area along a variable route providing demand-responsive service. Flex routes are a strategy for expanding service to areas where current population and employment densities or the road network make traditional fixed route service infeasible.

Flex routes can serve a variety of different markets. For example, a flex route could pick up riders at a rail station, travel a fixed route through an industrial park, including flex route segments to smaller worksites. Similarly, flex routes could serve low density suburban neighborhoods before getting on a main arterial traveling to a regional mall. Such routes typically do not compete with the travel time advantages offered by private autos but they succeed in serving a larger population base than is possible with traditional fixed routes.

- ***Route deviation***, the bus operates along a fixed route with a fixed schedule but may deviate to pick-up or drop off customers within a certain distance from the route, returning to the route at or as near as possible to the point of exit, before continuing on the route
- ***Point deviation***, the bus may operate along any path to serve “in-between” requests, as long as the bus gets to the next scheduled bus stop on time.

Policies vary about how far off-route vehicles can flex. Typically there are marked bus stops along the route where service is guaranteed without a reservation. The more closely spaced these stops are, the less flexibility there is in how the vehicle will flex from the route. If it is desired to serve all intersections along the route, then vehicles need to return to the designated route within one block of the point of deviation. Passengers on the bus may have a longer travel time than for fixed-route service; passenger travel times and arrival times at stops will be less predictable.

Some means is needed for passengers to phone in requests, either through a dispatcher or by calling the driver directly. Policies vary about how far in advance passengers should call to request an off-route pickup. Requiring requests a day in advance allows for advance planning, and is convenient if passengers call into an office. For passenger convenience, however, it is common to allow calls up to an hour before the requested time. Calls coming directly to the driver may be the simplest and most practical policy. Since a flexible route needs to keep to a schedule, the number of deviations needs to be limited, usually to a handful each time a bus completes a circuit of the route.

Policies also need to be established for how far off the route buses will deviate, and whether passengers can request a deviated drop-off at the time of boarding. The larger the allowed deviation area the more time must be allowed for deviations. For example, OmniLink, a well-known service in Manassas, Virginia, will deviate up to three-quarters of a mile off the route and began by allowing a 25% cushion for deviations, or about ten minutes per run, and then made adjustments based on experience[1]. No matter how much time is allowed, it will never be possible to accept all deviation requests.

Benefits of flexible services are that they can provide an alternative service in less-densely populated areas where fixed-routes are not feasible; because they deviate from the set route, they can meet the needs of passengers over a wider area but only on a demand basis. Since the service area expansion is on-demand rather than a regular route, this type of service expands coverage without triggering an ADA paratransit obligation. Flexible routes can also be used to test demand and build ridership for eventual fixed-route service.

At the same time, this type of service is more complicated than fixed-route for operators and dispatchers, and drivers may find it more difficult to stay on schedule. Passengers need to be educated on how the system works, and must be willing to call ahead to be picked up. Operators considering establish a flexible route service need to study and evaluate costs differentials between flex and fixed route services.

Examples of Best Practices

Pierce Transit in Tacoma WA operates deviated fixed route service on the Longbranch Peninsula, a predominately rural area that is isolated from the rest of the service area. Twelve passenger vans operate a fixed schedule, offering service approximately every90 minutes. Residents have a choice. They can wait at any one of approximately 25 ‘on route’ stops and the van will pick them up while traveling the regularly scheduled route or they can call in and reserve a pickup at an ‘off route’ stop. All stop locations are prominently marked to minimize the likelihood of confusion about where the pickup will occur. Both members of the general public and persons qualifying under the disability requirements of the ADA are served.

Applicability to DeSoto

Deviated fixed route service may be a good fit for DeSoto neighborhoods that do not have the density to support traditional fixed route services..

[1] Eric Bruun and Eric Marx, “OmniLink--A Case Study of a Successful Flex-Route Capable ITS Implementation,” paper presented at the January 2006 Annual Meeting of the Transportation Research Board.

Community-Based Transportation

In addition to fixed-route and flexible route services, social services which provide transportation can fill transportation gaps for people with particular needs, and when coordinated, can expand their area and client population.

Taxi Subsidies

Taxi subsidy programs typically involve an arrangement between a sponsoring organization (or its agent) and a participating taxi company or companies. These programs accept and accommodate requests from sponsored customers, clients, or residents and/or accept vouchers provided by the sponsoring organization to riders as partial payment for the trip. Most taxi subsidy programs focus on seniors and/or persons with disabilities residing within the sponsoring municipality or agency service area, but some are available to general public residents as well. Human service agencies that employ this strategy generally limit taxi subsidies to agency clientele or program participants.

For example, a city may give or sell scrip or coupons to eligible people which they can redeem for taxi rides. The amount of subsidy may vary from as much as 90% to 50% or less. Usually, each participant is limited to taking a small number or value of rides per month. Taxi subsidy programs can be very popular, so strict limits on trips per month and the amount of the subsidy may be needed to control costs.

A taxi subsidy program requires a mechanism for paying the subsidy and decisions about the amount of subsidy per trip and limits on the number or value of trips that will be provided per month. Some large taxi subsidy programs use automated means and central call centers, but small-city or community programs usually use coupons or scrip in some form. If the program is limited to one or a small number of selected taxi companies, it may be possible to establish a system administered by the companies with City oversight. Auditing and fraud control measures need to be established.

Potential obstacles and challenges with taxi subsidy programs include the absence of taxi service within a community, the lack of accessible taxi vehicles to accommodate wheelchairs, fraud by taxi drivers or participants (for example selling coupons) and complaints about service quality, including reluctance by drivers to accept the scrip or coupons. A program of this type is most likely to be successful if the area is well served by taxis, the public entity has effective taxi regulations in place, and there is good communication among all parties.

Examples of Best Practices

The DuPage County (IL) Pilot II Subsidized Taxi Service is a nearly county-wide, user-side taxi subsidy program. Each sponsor (municipalities and human service agencies) defines its eligibility criteria and decides how much to charge for a voucher/coupon that is worth $5.00 towards a taxi fare. Service is available countywide 24 hours per day, 365 days per year.

Linn County, IA. Linn County uses taxis to provide service to residents when the regular paratransit service is not operating. With Cedar Rapid's Transit Department, the County provided an accessible taxi to the taxi contractor, resulting in 250 (new) w/c trips per month.

Soldotna-Kenai, AK. The ILC in Homer started an accessible taxi subsidy program in 1996, with FTA 5310 funding, and with AAA Alaska Cab as its partner. The program was so successful that the cab company purchased three additional accessible cabs. In 2005, the program, which served 14,000 trips in 2005, has been transferred to the Central Area Rural Transportation System.

Applicability to DeSoto

Taxi subsidy programs work best in areas with good taxi service. This would be a major issue in DeSoto, which has no current service. However, a taxi subsidy program might be one strategy for creating sufficient demand to attract taxi service to the community.

Volunteer Driver/Escort Programs

Volunteer driver programs typically provide mileage reimbursement to individuals that operate their own vehicles when they take individuals to medical appointments or other services, thereby negating the need for additional labor and capital costs. Volunteer escort programs (e.g., "Bus Buddies") have volunteers accompanying riders to/from their destination on transit or paratransit. This kind of program can provide service to riders who may otherwise be unreachable and/or are too costly to serve.

Benefits and Challenges

Many community transit services use volunteers for some aspect of service delivery. Leveraging volunteer labor can make community transit services more affordable. Having volunteer drivers can increase schedule flexibility and reduce costs. Volunteers can develop into program advocates in community, and can provide physical and emotional support to riders.

As might be expected, recruiting and retaining volunteers can be challenging and requires on-going effort/attention; in addition, most volunteer drivers are limited to ambulatory passengers. Most volunteers are reimbursed for mileage; the higher the reimbursement, the greater the number of people willing to become volunteers. The IRS guideline (raised to $58.5 per mile on 2009) is the amount volunteers can be "reimbursed" without it counting as income they would have to declare as income. Any program should consider paying the maximum; if this is beyond current funding, then getting the funding to bring reimbursement up to the maximum should be considered a need in the program's plan.

If volunteers are used, time needs to be devoted to continuing volunteer recruitment, recognition, and training. Volunteer programs may take years to establish, and volunteers can be in short supply. Some shifts are hard to cover with volunteers, who may prefer not to drive at night. Fuel costs and vehicle insurance can be prohibitive, and insurance coverage requirements may limit participation. However, in some communities, a local transit agency is willing to cover some of the insurance under their policy.

Examples of Best Practices

Transportation Reaching People (TRP), is a program in the Social Services Department of Clackamas County, Oregon. Part of the Division's Volunteer Connection, the program recruits, screens, trains and schedules 125 volunteer drivers. In 2005, the volunteers provided more than 17,000 rides to medical appointments and other errands for seniors and adults with disabilities. TRP also uses three vans with specially trained drivers to meet specialized transportation needs.

The Catch a Ride project is an example of one of these specialized transportation programs. Catch a Ride serves low-income transportation-disadvantaged citizens in the Milwaukie and Oregon City areas. With the help of community partners, the Catch a Ride Project will provide, in fiscal year 2006-07, more than 2,000 rides to at least 100 very low-income riders struggling to improve their self-sufficiency. An innovative element of this project is the use of welfare recipients as volunteer van drivers. Through Catch a Ride, TRP will train and assist at least 10 welfare recipients each year to find living wage jobs as professional drivers. TRP receives funds from federal and state sources, as well as donations from riders. Social Services Department of Clackamas County provides funds to support both the volunteers and the van programs.

Ride Connection in Portland, Oregon is a non-profit community service organization run for and by older adults that developed a volunteer driver program to meet the special needs of older adults. In addition, Ride Connection coordinates transportation operations of 33 small community-based providers of elderly and disabled transportation (and thus is also a good example of coordinated social service transportation, described later in this memo). The partner network includes a variety of human service organizations serving elders and people with disabilities throughout the metropolitan area. By partnering with these agencies, they are able to provide transportation services customized for different geographic areas and different client groups much more efficiently than if they acted independently. These services include:

- Service coordination between partners, and scheduling for some partners
- Driver training and continuing education
- Call center information and referral services
- Fundraising
- Grant writing and serving as conduit for state and federal funds
- Volunteer recruitment and placement
- Advocacy
- Equipment purchases and coordination of shared use vehicle programs
- Vehicle insurance
- New service design
- Contract administration, technical assistance and performance reporting, customer service monitoring

Ride Connection service partners include the local chapter of the American Red Cross, faith-based groups, senior centers, residential care facilities and multi-service centers. The vast majority of people served by the Ride Connection network are ADA eligible.

Ride Connection has been instrumental in the development of low cost/no cost services, regional

one stop travel information, and travel training services. Ride Connection provides key connections to social service organizations and county aging and disability services, a role that urban transit agencies have not traditionally emphasized within their organizations.

This network operates a fleet of approximately 100 accessible vans and small buses, in addition to volunteer-owned vehicles. Approximately 600 drivers, of whom two-thirds are volunteers, provided over 371,500 E&D rides in FY08, an increase of 4.1% over FY07. Ride Connection volunteers provided approximately 52,000 rides in FY08.

The Beverly Foundation. The Beverly Foundation's mission is to foster new ideas and options to enhance mobility and transportation for today's and tomorrow's older population. The foundation pursues this mission through a specialized series of research programs, community demonstrations, and technical assistance products. The Foundation searches for and gives awards to volunteer programs across the country, providing the data gathered back to the public in research reports and assistive products, including complete guidebooks on how to start and manage volunteer transportation programs. This foundation has a database of almost 400 volunteer driver programs reflecting a variety of exemplary models, including TRIP Volunteer Friends in Riverside, CA; the YCCAC paratransit service in York County, ME; the West Austin Caregiver program in Greater Austin; TX; and the Independent Transportation Network model in Portland, ME.

Applicability to DeSoto

Managing a cadre of volunteer drivers would require the creation of a Mobility Manager position. Such a program could consolidate any current sponsoring funds and possibly augment those funds to increase the reimbursement rate and be able to serve non-medical trips, especially those for individuals whose mobility needs are difficult to meet or whose travel needs go beyond the Health Shuttle service areas. The Mobility Manager could also recruit, train and manage a roster of “Bus Buddies” to assist transit-dependent individuals to use DART and vans provided by local social service agencies.

Coordinated Community Transportation

Within a community, many social services provide transportation for their particular clients. These facilities may include people with disabilities, seniors, or even church groups or schools. Often the vehicles and drivers are idle for at least part of the day, and may be picking up or dropping off people close to those in other programs. With some coordination, these resources can be more fully utilized. Where there is room, some groups can travel together or vehicles not in use can be loaned to other organizations needing to transport their clients. Some coordinating agencies combine the coordination function with a volunteer program, such as Ride Connection described above.

Benefits and Challenges

The benefits to coordinating transportation resources are obvious; with funding for social services scarce, coordinating transportation resources can save everyone money. Sometimes agencies with vans and drivers are reluctant to participate, particularly if doing so would require comingling their clients with others. The coordinating task would be likely to require a funded position for such a program to be effective.

Examples of Best Practices

Ride-On Transportation began operating in 1993 as the Consolidated Transportation Services Agency (CTSA) for San Luis Obispo County. In this role, Ride-On has assisted local social service agencies with their transportation-related needs. In 1995, Ride-On expanded its mission with transportation services to the commuting public and seniors and the formation of a Transportation Management Association (TMA). Ride-On now offers a variety of services ranging from transportation for social service agencies, as originally required, to offering various innovative transportation and ridesharing services to the general public.

Ride-On Transportation is a non-profit entity governed by the San Luis Obispo County United Cerebral Palsy Association (UCP). The Board of Directors allocates a large portion of the UCP budget to transportation, while the Agency's other activities include a range of family and adult services for persons with disabilities. The UCP Executive Director also serves as the Director for Ride-On and the Transportation Management Association (TMA). The two programs work closely to effectively administer a variety of transportation services.

Ride-On operates three primary services including:

1. The United Cerebral Palsy (UCP) Association Services
2. Consolidated Transportation Services Agency (CTSA) services, using TDA 4.5 funds
3. Transportation Management Association (TMA) general public services

New York School Buses for Seniors. One unusual approach to coordinated transportation resources is to use school buses to shuttle seniors. Under a plan unveiled in late August 2009 by Mayor Michael R. Bloomberg, the city's fleet of yellow school buses, idle during the middle of the day, would be used to shuttle seniors to grocery stores. Officials said that the cost of the bus program would be minimal, since the drivers are already paid for more hours than they actually work. A pilot project in Brooklyn carried an estimated 1,800 riders in 2008, helping seniors get to supermarkets out of their neighborhoods. Creating such a service would depend on the availability of school buses to the community and the contractual arrangements with bus drivers. It may also require a financial contribution to cover fuel and vehicle maintenance.

Applicability to DeSoto

NCTCOG is already pursuing strategies to better coordinate community transportation services. DeSoto could provide a local boost to these effort by working with local churches, schools, and community organizations to combine their transportation resources. However, community resources are scarce, and coordinating the use of these vehicles for other purposes may open up questions of liability for both the vehicle and the driver. There may be opportunities, using some of the methods used by Ride-On or the Ride Connection, to catalog and recruit vehicles and drivers which might be idle during some periods, for other community-based trips such as shopping.

Carpooling

Carpooling is the shared use of a car by the driver—usually the owner of the vehicle—and one or more passengers. When carpooling, people either get a ride or offer a ride to others instead of

each driving separately. Carpooling arrangements and schemes involve varying degrees of formality and regularity. Carpools may be formal - arranged through an employer, public website, etc., or casual, where the driver and passenger might not know each other or have advanced agreed upon arrangements. Carpooling can be used as a first mile/last mile connector by efficiently connecting with public transit or other alternative commute modes.

Carpools help to improve the efficiency of road/freeway systems by increasing the number of people per vehicle. Ridesharing reduces the number of cars on the road, carbon dioxide emissions, oil consumption and other positive environmental benefits. They provide a viable option to commuters and others who want to share a ride and do so without restricting personal mobility or incurring high operating costs.

Carpools are most effective for short commutes. Participants of rideshare programs often are part of commute trip reduction programs, which can provide economic and time-saving benefits, including:

- Discounts on parking permits
- Access to priority parking spaces reserved for car or vanpool vehicles
- Shared vehicle expenses and tolls
- Use of dedicated carpool or vanpool 'diamond' or high-occupancy vehicle (HOV) lanes on major roadways, tunnels, or bridges
- Waived or reduced tolls

There are little or no direct costs for a sponsoring organization associated with carpooling. Some programs may have additional fees for added services such as guaranteed ride home programs. The costs to offer preferential parking for carpools are zero to minimal.

Specific intended benefits to employers and the general public include reduction of automobile congestion around major employment centers, reduction of parking requirements at employment sites, conservation of energy, and reduction of air pollution. Intended user benefits for the journey-to-work trip include low costs, acceptable travel time, ability to read and relax, and convenience.

Traveler Benefits	Public Benefits
Time savings	Reduced congestion
Cost savings	Increased efficiency of the transportation system
Preferential parking	Reduced environmental impacts

Carpools can be difficult to form because of the challenges associated with matching users, and can be difficult to maintain due to changing travel patterns and needs. Drivers carry the additional burden of potential legal action from passengers in case of an accident.

Applicability to DeSoto

NCTCOG manages the region's ridematching program. As with vanpooling, DeSoto could give a local flavor to these efforts by providing links through the city's website. Because ridesharing strongly depends upon personal relationships, this sort of city involvement may pay extra

dividends.

Alternatively, the city could sponsor a real-time ridesharing effort.

Examples of Best Practices

King County Metro in Washington State has combined its carpool and vanpool programs into a comprehensive program. Ridematching for carpools is facilitated by RideshareOnline.com, a project managed by the Washington State Department of Transportation that serves Washington and Idaho. The program provides free carpool, vanpool, and bicycle ride matching services as well as information about other commuting options. It also provides a free online tool to assist employers in managing their employment program. The agency provides vans for vanpools and vanshares, provides ridematching services, and performs the administrative functions associated with vanpooling and vansharing.[2]

Vanpool Services

Vanpools typically collect riders at a central point within a community and then travel directly to major employment centers such as Downtown Dallas or the DFW area. Typically an agency or private company owns the vans with capacities of 6-15 people depending upon the number of riders. Individuals using the vanpool share the cost and may even share the driving responsibilities. The schedule and routing for the service is decided by riders, typically people who work and live near each other and have similar commute schedules.

Vanpools are a very cost-effective way of accommodating commute trips, especially trips that are more than ten miles long.

Examples of Best Practices

Choose Your Way Bellevue: The city of Bellevue, WA sponsors a transportation demand management program that actively promotes alternate transportation modes, including vanpools. While Bellevue does not operate its own vanpools, it actively promotes the programs offered by the Puget Sound area's local transit providers. This includes a website that has been tailored to the needs of people who live or work in the city and provides a local feel for region-wide vanpooling and carpool matching efforts.

Dallas: DART has a very active vanpool program, offering vehicles that accommodate between six and 15 people. The cost is between $270 and $290 a month plus the price of gas, divided

[2] http://metro.kingcounty.gov/tops/van-car/van-car.html

among all riders. DART supplies both the van and insurance. A person with either a work or home destination within Dallas, Denton or Collin Counties, and not originating in areas served by the rideshare program of the Fort Worth Transit Authority, is eligible to participate.

Applicability to DeSoto

While DeSoto would gain little from operating its own vanpool program, the city may have a productive role facilitating the formation of DART vanpools that are comprised of local residents. This could be accomplished by establishing a vanpool link on DeSoto's home page. It would either redirect the person to the DART program or feed a city database of residents interested in participating in a local vanpool. The advantage would be that the program would have a much more local flavor and people who might hesitate about riding with 'strangers' from DART would feel more comfortable knowing that other participants are local residents.

A second city role might be the provision of parking for vanpool participants. As shopping centers have become more restrictive about allowing all-day parking in their lots, vanpool participants often have problems finding a place where they can congregate. This forces them into 'park-and-hide' strategies which create problems both for merchants and the commuters. DuPont could encourage vanpooling by providing and advertising safe and secure parking facilities that are set aside for vanpool participants.

Dynamic Ridesharing

The main objective of dynamic ridesharing is to improve the efficiency of road/freeway systems by increasing the number of people per vehicle. Dynamic ridesharing is also known as real-time ridesharing or ad-hoc ridesharing as it forms carpools "on the spot." It also differs from regular carpooling and vanpooling in that ridesharing is arranged on a per trip basis rather than for trips made on a regular basis.

Rideshare programs can be implemented by a number of different organizations such as an individual employer as part of a Commute Trip Reduction program, a Transportation Management Association (TMA), a Campus Trip Management program, a transit agency, or a regional ridesharing agency. Large ride matching programs use computerized partner matching systems that take into account each commuter's origin, destination, schedule, and special needs. Smaller programs may simply manually match potential partners or use ride notice boards including sites on the web.

The requirements for success include:

- An institutional sponsor committed to the project
- Sufficient incentives (for example, scarce parking spaces provided to project participants)

- Sufficient marketing (including start-up incentives to create “critical mass”).

Dynamic ridesharing systems consider each trip individually and are designed to accommodate trips to random points at random times by matching user trips without regard to trip purpose. The systems have to provide match information close to the time when users need to travel. Dynamic ridesharing can either be an organized program run by an agency or an informal system run by users (casual carpooling).

There are a number of benefits to dynamic ridesharing:

- Minimal advance planning is required and it accommodates variable travel times.
- Can provide a link to or from transit stations and help bridge first/last mile gaps.
- Increase mobility by promoting more-efficient use of existing freeway infrastructure (as filling up empty seats in a car).
- Allows households to limit their car ownership by providing opportunities to use an alternative form of transportation that does not sacrifice convenience.

The main challenge involved with dynamic ridesharing is making commuters aware of the service. Dynamic ridesharing exhibits what economists call a network effect; if more commuters register for a ride-match, commuters can more easily find a match. It is difficult to reach a “critical mass” of users so that ride-matching is easy. In addition, people may be hesitant to ride in a car with a stranger.

Avego has developed a dynamic ridesharing system that matches riders and drivers using smartphones and a website. The firm is currently running a dynamic ridesharing pilot project on State Route 520 in King County, Washington. http://www.avego.com

ZimRide is a model which provides some pre-screening for people looking to rideshare. ZimRide is a social-networking site that matches drivers and passengers on university campuses or at companies. http://www.zimride.com/

Examples of Best Practices

Northern Virginia: Every day, about 6,500 people get carpool rides that were not pre-arranged. All these carpools have three people in them. The system is called a ‘slug line.’ It works like a taxi stand for carpoolers. People line up, and cars drive up. (Sometimes cars line up, and people walk up). The front people get into the front car (always two riders plus the driver) and they depart for the predetermined destination.

Bellevue, WA: In a pilot program this fall, 250 drivers with GPS-enabled smartphones will offer empty seats in their vehicles to 750 riders along the SR 520 corridor, in real time and with no prearrangement. The program, made possible by a $400,000 contract from the Washington State Department of Transportation (WSDOT),will test the viability and feasibility of flexible carpooling along the congested east-west link. Each ride match will be automatically verified using a smartphone app that combines real-time ridematching with fully automated security features, real-time passenger information, and electronic micro-payments between rider and driver based on vehicle miles traveled. The system creates an incentive for drivers to conduct at least 20 ride matches per month, resulting in 30,000 fewer trips over the 6-month duration of the pilot.

Applicability to DeSoto

On its own, DeSoto is likely not large enough to support a dynamic ridesharing system. Working in combination with other Best Southwest cities, this may be a strategy for reducing travel demand to places like Downtown Dallas and the DFW Airport.

Taxi Sharing

Taxi sharing service differs from rental car and car-sharing services in that the person making the trip: a) does not drive themselves, b) does not need to reserve in advance, and c) can access the service at many different locations. Under a taxi sharing program, cab drivers can pick up multiple passengers at the same time, provided each passenger is headed in the same direction. A taxi sharing program is especially beneficial when passengers have a common destination, such as from a transit station. Taxi sharing allows passengers to pay lower fares for door-to-door journeys than they would if travelling alone. Sharing taxis results in fewer taxi trips overall, which reduces traffic congestion and pollution. These arrangements not only benefit customers, but the trade and local communities too.

Taxis provide on-demand door-to-door travel and are best for short-distance trips. For these reasons, taxis are an excellent first / last mile connector to bridge the gap between a transit station and a person's origin or destination.

Providing additional taxis at transit centers or developing a taxi sharing program can assist passengers that have a common destination, such as from a transit station to downtown or to residential neighborhoods. Taxi sharing can provide better access to employment sites or downtown shopping areas for a lower cost (usually a flat fee).

Taxi capital and operating costs are largely accounted for by the private sector and are recaptured through fares. Costs to consumers are around $2.60 per mile with a $3.00 flag fee. Measures to simplify the customer experience for occasional taxi passengers (such as a downtown "flat fare") could increase the number of short distance trips taken. Shared taxis can also be used to reduce consumer costs.

The benefits of taxi sharing include:

- Taxi service supports transit use by bridging first mile/last mile gap by enhancing access to and from transit stations.
- It supports the use of alternative modes, including walking, cycling, ridesharing and transit use, by giving people who use those modes a better "fallback option" in emergencies. Especially effective as part of a Guaranteed Ride Home program, as experience indicates that improving the availability of fallback options can significantly increase use of alternative modes.
- Can reduce VMT by replacing single occupancy vehicle trips with high occupancy vehicle trips.
- Improves availability of parking near key destinations.
- Flat fare can encourage the use of taxis for short trips.
- Increases mobility for those who do not have access to a car, particularly the elderly and disabled, or those who chose not to use their car.

Challenges include:

- Measures to enhance the integration of transit and taxi will require minor capital investments to pay for installation of telephones and other supporting capital equipment.
- Measures to expand the overall availability of taxis by increasing the number of cabs on the street could have a detrimental effect on driver incomes unless market demand increased in tangent with expanded availability.

Examples of Best Practices

Shared taxis are a common public transportation mode in Latin American cities. In May 2009, New York taxi passengers were able to share rides under a pilot program approved by the New York City commission that regulates the city's 13,000 yellow cabs. The 12-month program outfitted 1,000 taxis with meters to allow for multiple fares and electronic signs showing their neighborhood destination.[3]

Applicability to DeSoto

A similar pilot program could be an attractive alternative for passengers to and from their residential neighborhood to or from a DART station.

Figure 3 below provides a summary table of community transit service delivery models.

[3] Chris, Dolmetsch, "New York to Allow Shared Taxis Under Pilot Program, "Bloomberg Press [New York] 29 May 2009, http://www.bloomberg.com/apps/news?pid=20601093&sid=amxbdcrsRPkQ&refer=home

Types of Community Transit and Community Transportation Services

Type	Route	Schedule	Locations served	Applicability to DeSoto
Commuter and Long Distance Services				
Commuter Rail	Fixed Guideway	Established timetable	Linking distant suburbs with central business district	Low - At some point may serve the Best Southwest area
Light Rail	Fixed Guideway	Established timetable	Major urban corridors	Low - Only as a terminus that can be reach by auto of a feeder service
Bus Rapid Transit	Fixed Transitway	Established timetable	Major urban corridors	Low
Express Bus	Major travel corridors	Established timetables	Linking suburbs with major employment areas	Moderate – As stand alone service or as part of a route that also serves other communities.
Local Services				
Local Bus	Fixed	Established timetable	Urban corridors	Low – DeSoto does not have the densities to support local bus service
Community Circulators	Fixed	Established timetables	Concentrated residential locations, community centers, shopping that can be linked by a workable route and schedule.	Moderate – To accommodate travel patterns, circulators would have to travel outside the city limits
Business District Shuttles	Fixed	Established timetables	Transit hubs, major activity centers, shopping districts, mixed-use and high-density residential development.	Low – DeSoto does not have a strong enough business district to support these services
Commuter Shuttle	Fixed	Established timetables	Transit hub, employment center.	Moderate - Would likely only work if bi-directional service (taking residents to DART and workers to locations in DeSoto) can be established

Type	Route	Schedule	Locations served	Applicability to DeSoto
Dial-a-Ride	Route based on passenger requests, except for one or two checkpoints, usually at a transit hub.	Stops at a checkpoint are scheduled, otherwise all stop times based on passenger requests.	Any defined residential area within proximity of a transit hub or significant destinations	High – Could potentially serve the entire community.
Deviated Fixed-Route	Fixed stops with deviations between stops	Stops served on a fixed schedule. Deviations are scheduled based on passenger requests.	Similar to community circulators	High – Could serve all or parts of the city
Community- Based Transportation				
Taxi Subsidy	Routing determined by passenger request.	Pickups at times requested by passengers.	Usually a city and nearby areas, limited by subsidy amount and taxi fares	Moderate – Would first require establishment of taxi service
Volunteer Driver/Escort Programs	Routing determined by passenger request.	Pickups at times requested by passengers.	Usually a city and nearby areas, limited by subsidy amount and taxi fares	Moderate – Can be labor intensive
Coordinated Community Transportation	Routing determined by passenger request.	Pickups at times requested by passengers.	Usually a city and nearby areas, limited by subsidy amount and taxi fares	Moderate – Can be labor intensive
Carpooling	Flexible	Determined by users	Linking suburbs with major employment areas	High - Could support existing regional efforts
Vanpool Services	Flexible	Determined by users	Linking suburbs with major employment areas	High - Could support existing regional efforts
Dynamic Ridesharing	Routing determined by passenger need	Determined by users	Any geographic area	Moderate – May be challenging to develop a significant pool of users
Taxi Sharing	Routing determined by passenger request.	Pickups at times requested by passengers.	Usually a city and nearby areas, limited by subsidy amount and taxi fares	Usually seniors and/or people with disabilities

References

- *San Mateo Senior Mobility Action Plan, Final Action Plan*, San Mateo County Transit District (2008). http://www.seniormobilityplan.com/documentation.html
- *Integration of Paratransit and Fixed-Route Transit Services*, TCRP Synthesis Report No. 74, Transit Cooperative Research Program (2008) - http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_syn_76.pdf
- *Operational Experiences with Flexible Transit Services,* TCRP Synthesis Report No. 53, Transit Cooperative Research Program (2004) - http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_syn_53.pdf
- *Volunteer Drivers Guide - A Guide to Best Practices*, Washington State Department of Transportation. http://www.wsdot.wa.gov/Transit/Training/vdg/
- Community Transportation, University of Minnesota Center for Transportation Studies. http://www.cts.umn.edu/ct/about/index.html
- *California Redevelopment Association, Special Citation: LINKS Shuttle Service. http://www.calredevelop.org/AM/Template.cfm?Section=Home&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=3115*
- The online TDM encyclopedia: http://www.vtpi.org/tdm/tdm34.htm
- Bryon York and David Fabricatore et al, Puget Sound Vanpool Market Assessment, Office of Urban Mobility, WSDOT, 1999 Online: www.wsdot.wa.gov/Mobility/TDM/vanpoolmarket.htm