The Woodlands Township Transit Plan

CHOICES

Executive Summary
March 2015

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Background

Introduction

This executive summary provides an overview of the development and recommendations of The Woodlands Township Transit Plan. In the fall of 2013, the Houston-Galveston Area Council (H-GAC) partnered with The Woodlands Township (the Township) to examine the area's growing mobility challenges. H-GAC supports responsible planning in the region to improve mobility, reduce congestion, improve air quality, and enhance the region's quality of life. The Woodlands and the surrounding area continue to undergo sustained growth in employment and population. The current and future traffic congestion, combined with the demand for transit and more active transportation choices, required a comprehensive look at mobility. Through The Woodlands Township Transit Plan, H-GAC and The Township are examining transit and connections to transit for The Woodlands Town Center area, the entire Woodlands Township and surrounding area, and regional transit between The Woodlands and activity centers around the Houston Metropolitan area.

Plan Purpose

The purpose of The Woodlands Township Transit Plan is to provide a comprehensive examination of The Woodlands' existing transit options, as well as the need for future transit choices in and around The Woodlands.

The plan presents various options for consideration by the community to expand existing transit and develop new transit options to serve the local area, as the area continues to grow in population and employment. To encourage success, the plan considers the supporting road network, cycle network, and pedestrian network to provide complete connectivity to transit users from their origin to their destination.

Why a Transit Plan?

The Houston metropolitan area continues to undergo rapid growth in population, employment, and the associated development. Rice University's annual Kinder Institute Houston Area Survey noted that 29 percent of respondents say traffic (more than the economy or crime) is the Houston area's top problem. This is an increase of 21 percent for the same survey in 2013.

H-GAC predicts that the total regional population will be 8.8 million by 2035 with projected job growth at a 60% increase.

The Woodlands itself and the surrounding study area are feeling the effects of this regional growth. The study area has sustained employment growth, a positive housing market, and an overall high quality of life as identified in multiple surveys. However, both local and regional traffic are a constant challenge for residents, employees, and visitors to the area. Mobility options within the study area are critical to manage ongoing growth, development, and demand

for services. More residents, more employees, more shoppers, more business clients, etc. all require safe, accessible and simple methods to travel to, from, and around the study area. One only needs to experience morning and evening peak traffic around The Woodlands; or a weekend evening in the Town Center, to understand the area's existing mobility challenges. With planned growth and development, these challenges would be further intensified in the future. The graphic below provides a representation of population and employment growth in the study area.

The goal for this plan is to provide mobility choice. For those where transit provides a useful mobility option, they can choose to use it, while others are free to choose to drive, carpool, walk, etc. Transit may not be the choice mode for all; however, the benefits of transit can be felt broadly across the population. Each new transit rider represents one less person potentially in a car or in a parking space.

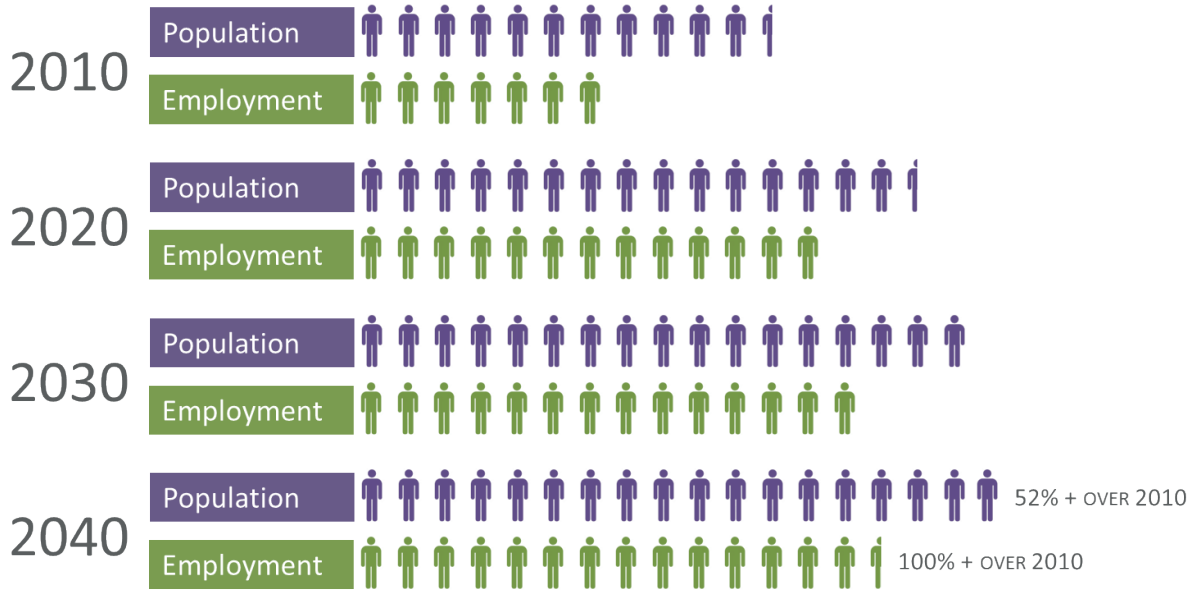
Transit can provide a more efficient method to move more people, occupying less road space. Mobility and travel time play a large role in attracting and maintaining businesses and employees in an area. Reduced mobility impedes development while greater mobility is a catalyst for development.[2] Overall, enhanced mobility has the option to provide:

- Freedom of travel choice.
- A competitive advantage to attract new residents, businesses, and services.
- More efficient travel (more people traveling in less roadspace).
- Options to help accommodate future growth and development.

> "If viable alternatives to car-centered sprawl are not made more widely available for the 50 percent of area residents who would choose them, there can be little doubt that much of the region's remaining farmlands, prairies, forest and marshes will disappear into subdivisions and parking lots, and traffic will continue to worsen."[1]

The Township has identified a variety of priorities that are in line with the concept of mobility choice. The Township has committed to providing high quality services and amenities and maintaining a vibrant business environment. The identification and implementation of multiple mobility choices only strengthens The Township's ability to advance these priorities.

Study Area Population and Employment



[1] 2014 Houston Area Survey, Rice University's Kinder Institute for Urban Research.

[2] *The Geography of Transport Systems, 3rd Edition*. Jean-Paul Rodrigue, Claude Comtois, Brian Slack. Routledge 2013.

Existing Transit Provision

The Woodlands currently provides the following transit services (via subcontractors) with the support of Federal grants in collaboration with The District (formerly Brazos Transit District), The Woodlands Convention and Visitors Bureau, Interfaith of The Woodlands, the Friendship Center of Montgomery County, and non-profit organizations:

- The Woodlands Express park and ride services.
- The Town Center trolley service.
- The Waterway cruisers.
- Demand/response transit service for seniors and those with limited mobility.

The Woodlands Express park and ride services has been one of the success stories for providing a regional connection between The Woodlands and various employment destinations in Houston. Between 2008 and 2013, ridership fluctuated but showed an overall net increase of more than 19.7%, to over 720,000 riders in 2013. The Woodlands Express provides an alternative to the expense of driving and parking in central Houston for people who live in The Woodlands, but work in Houston. The service has been successful, despite very little promotion.

The Town Center trolley service is another important link within the Town Center, specifically for visitors. The trolley operates throughout the Town Center and provides access to major attractions, shopping, hotels, venues, and Waterway Square. Between 2008 and 2012 there was a net increase in ridership of 7.9%. The trolley service peaked in 2010, with annual ridership of over 142,000, but since that time has seen some decline. While the trolley provides good service for visitors, who are not sensitive to time, the trolley loop operations are somewhat long and unreliable for area residents who require an efficient trip across the Town Center

Demand for all transit services provided through The Woodlands Township and by others throughout Montgomery County is projected to grow. Employment and residential growth in The Woodlands, Springwoods Village, Oak Ridge North, the City of Shenandoah, as well as parts of unincorporated Montgomery and Harris counties continues to strain the existing transportation network. This strain will only continue as new residents and employees seek out trip options over the next 20 years. A combination of young families, aging residents, and those seeking active transportation options are influencing transportation demand in the area.

A wide range of mobility options will be needed to meet future mobility demand and transit will need to be a key mode of choice.

Plan Study Area

The study area is located in the northern portion of the Houston metropolitan area along I-45, approximately 27 miles north of the City of Houston. The Township is one of two designated recipients for Federal transit funding in the Conroe – The

Woodlands Urbanized Area (UZA). The Township and the City of Conroe entered into an Interlocal Agreement (ILA) for administration of public transit in the UZA. Under this agreement, the Township assumed responsibility for public transit in the southern part of the UZA (generally south of the San Jacinto River).

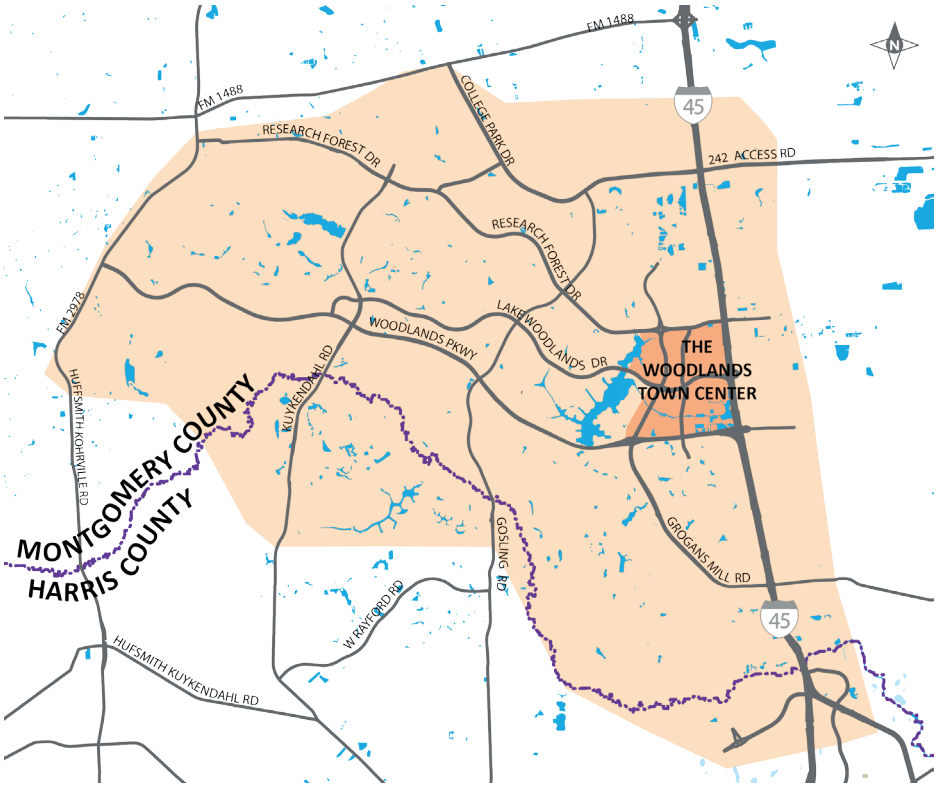
Plan Leadership and Guidance

H-GAC and The Township led The Woodlands Township Transit Plan. A project management committee (PMC) was created as a body to guide the plan development and provide input throughout the process. The PMC members included representatives from H-GAC, The Woodlands Township, The Woodlands Township Board of Directors, TxDOT, and consultant team members. Multiple agencies, local governments, municipalities, special districts, business organizations, non-profits, major employers, developers, and advocacy groups, in addition to Township residents, provided input to the plan.

Both staff and elected officials of The Township were involved in the plan development from its inception until the creation of the final recommendations.

The Woodlands Township Board of Directors played a critical role by providing policy guidance, communicating with stakeholders, and ensuring consistency with the goals and values of The Township. The initial meeting with The Woodlands Township Board of Directors was a workshop format to determine the overall project's vision and guiding principles.

Plan Study Area



The vision of The Woodlands Township Transit Plan is to preserve The Woodlands economic competitiveness through increased mobility in the Town Center, the Villages, and existing/emerging activity centers in the area, creating affordable, reliable, accessible, safe solutions.

This vision is supported by the following guiding principles:

- *Builds partnerships to share costs and benefits.*
- *Provides high quality services.*
- *Preserves the commuting services to Houston.*
- *Supports congestion mitigation.*
- *Enhances the multi-modal transportation network.*
- *Results in actionable projects in the near-term and long-term.*

Plan Process

The plan followed a multi-step process to engage with stakeholders, identify potential transit improvements, and examine those improvements. The transit options that provided the most potential benefit were advanced as recommendations. Review of the potential options included two core levels of examination. The steps included multiple opportunities for input from the residents, business community, major employers, transit users, potential transit users, etc. through focus groups, project questionnaires, and open public meetings.

The two major levels of examination represent the key points where examination was completed and transit options or scenarios were advanced in the process.

Process

Options Scoping & Identification → Initial Evaluation of Options → Prioritization of Scenarios → Recommendations & Documentation

Evaluation, Prioritization, and Outreach

Examination	Definition	Outreach Activities Completed
Initial Evaluation of Options	The initial evaluation examined the widest range of potential transit options. The goal of the initial evaluation was to narrow the options and advance those with the highest priority and best potential for success.	• Stakeholder questionnaire #1 completed. • Multiple PMC meetings for input and direction. • Direction provided by The Woodlands Township Board of Directors through briefing and workshop. • Public outreach meeting #1 completed. • Multiple focus groups with business and special interest groups completed.
Prioritization of Scenarios	The prioritization process refined the options from the initial evaluation, focusing on prioritizing the scenarios into final recommendations and plans for implementation in the near, mid, and long-term.	• Stakeholder questionnaire #2 completed. • Multiple PMC meetings for input and direction. • Direction provided by The Woodlands Township Board of Directors through briefing and workshop. • Public outreach meeting #2 completed. • Second round of focus groups completed with business and special interest groups. • Public outreach meeting #3 presenting the plan and recommendations. • Final presentation to The Woodlands Township Board of Directors (plan accepted by the Board 5-0).

Each level of examination included its own set of criteria to compare and contrast the options or scenarios. Development of the criteria was completed with input from the PMC, The Woodlands Township Board of Directors, and public stakeholders. The criteria are organized into various categories referred to as accounts. The accounts tie directly to the plan's vision statement and specifically to the guiding principles.

- Fiscal – Examined the affordability of solutions and the opportunities for partnerships.
- Mobility – Considered increased mobility by residents, visitors, and employees throughout the community.
- Community – Examined the ability to create safe and accessible solutions that support the planning principles of the community.
- Prosperity – Considered the ability to preserve The Woodlands' economic competitiveness through increased mobility.
- Sustainability – Examined congestion mitigation and enhancements to the multi-modal transportation network.
- Deliverability – Identified actionable projects in the near-term and long-term.

Evaluation Process

Initial Evaluation

The initial evaluation focused on identifying all of the potential transit and transit supportive improvements that could be considered. The improvements in the initial evaluation are referred to as 'options', because they form a wide range of potential choices for initial consideration and examination. The scoping process included significant input from the PMC, The Woodlands Township Board of Directions, and project stakeholders to create a comprehensive list of potential options.

The scoping process resulted in the identification of more than 50 transit options or transit supportive options (transit, roadway, cycle, pedestrian, parking, etc.) for examination.

The initial evaluation applied a series of high-level criteria designed to identify the best performing options. A wide range of options suggested by stakeholders were considered, including new bus services, car share, light rail and streetcar, monorail, etc. Many options were incorporated with one another and advanced for further examination. Some options were deemed not appropriate once the benefits were compared to the potential impacts and cost. For example, infrastructure intensive options, like light rail, are attractive but similar service could be provided with high quality bus at much lower cost. The outcome of the initial evaluation determined which options should advance forward for further definition, development, and evaluation in the prioritization of scenarios.

Prioritization of Scenarios - Recommendations

Upon completion of the initial evaluation, the resulting options were combined into potential transit 'scenarios'. The scenarios combined multiple options from the initial evaluation into complete packages of transit improvements. The scenarios were further defined for design, operations, cost, and implementation, so they could be evaluated in more detail through the prioritization of scenarios phase. The scenarios presented were ultimately prioritized by applying the criteria accounts. Three scenarios were developed and prioritized:

- Town Center Mobility (Town Center Bus).
- The Woodlands Area Mobility (Local Bus).
- Regional Mobility (Express Bus):
  - The Woodlands to Houston.
  - Reverse Commute: Houston to The Woodlands.

Each of the scenarios is supported by various complementary measures that enhance the success of transit. The sections below provide an overview of each scenario and recommendations resulting from their development and examination.

Town Center Mobility (Town Center Bus)

Improved mobility in and around the Town Center is critical to the continued growth and development of the area. Limited road space is unlikely to meet demand as new, and growing shopping, residential, and employment centers develop throughout the Town Center area. These new developments will also increase the demand placed on Town Center parking. The plan has examined transit mobility throughout the Town Center and how transit is accessed by pedestrians, cyclists, and auto users. The plan's recommendations integrate with the future transit center planned for the Town Center area. The plan focuses on introducing efficient, frequent, and accessible bus service in the Town Center area.

One goal of the Town Center bus service is to promote a 'park once' concept. The new bus service enables people accessing the Town Center by car to park in an appropriate lot or structure and then access all the key destinations and services via transit.

It is recommended to introduce, over time, three new Town Center bus routes. These routes will serve a range of key destinations, at high frequencies, and will include improved stop infrastructure (shelters, cycle racks, signage, etc.). The new service will focus on the needs of residents and employees in the area to provide efficient and fast connectivity to Town Center destinations. This differs from the existing Town Center trolley's focus on moving visitors in a manner that enhances their visitor experience with the historic replica trolley vehicle.

Each new bus service will require additional infrastructure. Stop locations will be provided with shelters, signage, and cycle racks (where appropriate). Gaps in the pedestrian and cycle network would need to be addressed to provide appropriate access to new transit stops.

Costs

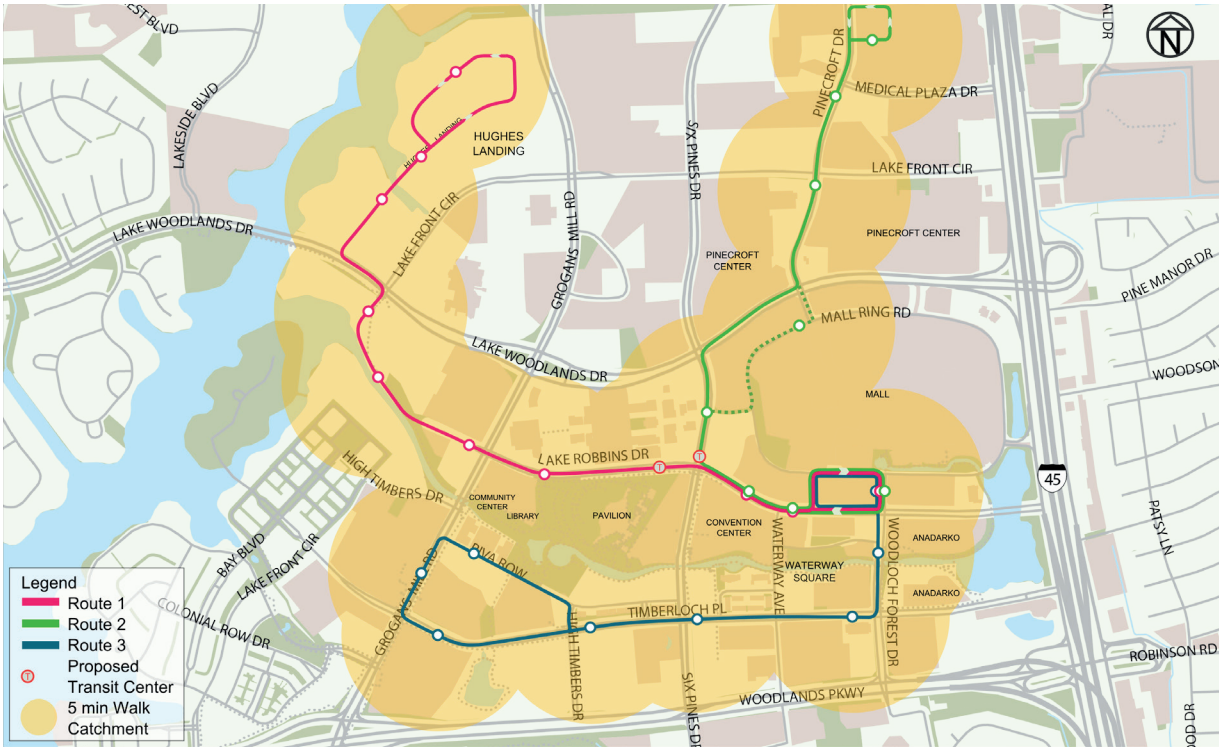
The project team developed high level capital and operating costs for each scenario based on local unit costs, the potential infrastructure needs, and potential operating schedules of the services. The potential estimates do not account for any funding or revenue to offset the capital or operating expenses.

- Route 1 - Estimated capital cost: $2.4M and estimated annual operating cost: $800K.
- Route 2 - Estimated capital cost: $1.3M and estimated annual operating cost: $600K.
- Route 3 - Estimated capital cost: $1.5M and estimated annual operating cost: $600K.

Each of these new services provides fast and frequent access to major activity points within the Town Center. The combined services would operate on ten minute frequencies all day. The new combined services would connect important destinations including The Woodlands Mall, attractions and employment along Lake Robbins Drive, medical facilities (including Memorial Hermann Hospital), Pinecroft commercial, and residential areas south of the waterway. The new transit stops create new accessibility with a simple five minute walk from stops to the majority of the Town Center as depicted in the recommendations graphic.

Recommendations - Town Center Bus
Town Center Bus Route 1
Route 1 would provide a critical connection between the Town Center's area of highest employment density to the rapidly developing Hughes Landing. Route 1 operations would occur predominantly on street with two-way service. This route provides a stop associated with the proposed transit center. Route 1 would also make use of a portion of the future dedicated busway alongside the Waterway between Lake Woodlands Drive and Grogan's Mill Road. This route would appeal to employees, visitors, and locals moving around the Town Center.
Town Center Bus Route 2
Route 2 is focused on serving areas to the north of the Town Center, providing connections to the retail and medical facilities along the route. These areas were identified as high demand stops through the public outreach efforts undertaken for the project. The route will provide a two way service along Lake Robbins Drive and Pinecroft Drive. This route would require additional coordination with adjacent jurisdictions.
Town Center Bus Route 3
Route 3 is focused on serving the developing areas of the Town Center on the south side of the Waterway. This route could operate as an extension of Route 2. Route 3 would serve new office and commercial areas, as well as higher density residential areas. This route would provide a two way service along the majority of Woodloch Forest Drive and Timberloch Place, with a single direction loop serving the last three stops on the west end.

Recommendations - Town Center Bus



The Woodlands Area Mobility (Local Bus)

The Woodlands area mobility refers to broader transit service throughout the southern portion of the Conroe-The Woodlands UZA. Mobility needs in this area are varied. The critical connections are primarily between the residential communities / villages to the Town Center area. This area includes populations of seniors and young people who may choose to use transit. While most commuters drive, congestion and changing demographics are creating additional demand for local transit.

Moving from the current situation of no fixed route transit locally to a network of local transit connections would be a significant change away from the area's traditionally auto-dominated transportation culture.

Making this change and developing a 'culture of transit' would take significant time. Proof of concept would be required by developing highly successful, core transit lines, with quality service and appropriate frequencies. The design of The Woodlands' residential areas, with many cul-de-sac streets and limited connectivity, create impediments to providing fixed route transit service. It is with these considerations that the team developed the recommendations for transit mobility within the broader The Woodlands area.

The success of the initial local bus services provided will set a precedent for the continued expansion of the service. Therefore, the recommendations reflect a measured implementation of local bus. Once the initial routes prove successful, future expansion can be considered to broader destinations within the study area. Therefore, the recommendations for local bus service connect either:

- Key mature residential areas with higher density residential and senior citizen communities in Panther Creek and commercial destinations including the Sterling Ridge, Indian Springs, and Panther Creek Village Centers. Additionally, all new services provide a core connection to the Town Center.
- Key employment destinations including the Town Center, Hughes Landing, and Springwoods / ExxonMobil.

The transit plan analysis examined multiple potential local bus destinations within the UZA. The two routes recommended are presented as the potential starting point for a future network (as demand dictates). It is recommended that The Woodlands continue to survey UZA residents in the future to track potential need for the implementation of broader routes throughout the community.

Costs

The project team developed high level capital and operating costs for each option based on local unit costs, the potential infrastructure needs, and potential operating schedules of the services. The estimates do not account for any potential revenues (from fares) or funding to offset the capital or operating expenses.

- Route 10 - Estimated capital cost: $2.5M and estimated annual operating cost: $600K.
- Route 10X - Estimated capital cost: $1.2M and estimated annual operating cost: $210K.
- Route 11 - Estimated capital cost: $2.1M and estimated annual operating cost: $460K.

Recommendations - Local Bus

Local Bus Route 10 or Route 10X

Route 10 and 10X proposes testing a fixed route transit connection between the Town Center / Hughes Landing and the Springwoods / ExxonMobil area. This should be timed to coincide with at least 50% occupancy of the ExxonMobil campus. This route would support new area residents' / employees' identification of The Woodlands Town Center area as their main destination for shopping, medical, and other services. It is recommended that only one of these services (either the 10 or 10X) be implemented, not both.

Route 10X

Route 10X provides an express connection between the Town Center / Hughes Landing and Springwoods / ExxonMobil with no stops in between. Route 10X could serve to establish the Town Center as the key destination for ExxonMobil employees for shopping, services, and leisure. It is our understanding that ExxonMobil is considering implementing this type of direct service between ExxonMobil and Hughes Landing. It is recommended that The Woodlands collaborate with ExxonMobil to provide this service and ensure stops in the Town Center area.

Route 10

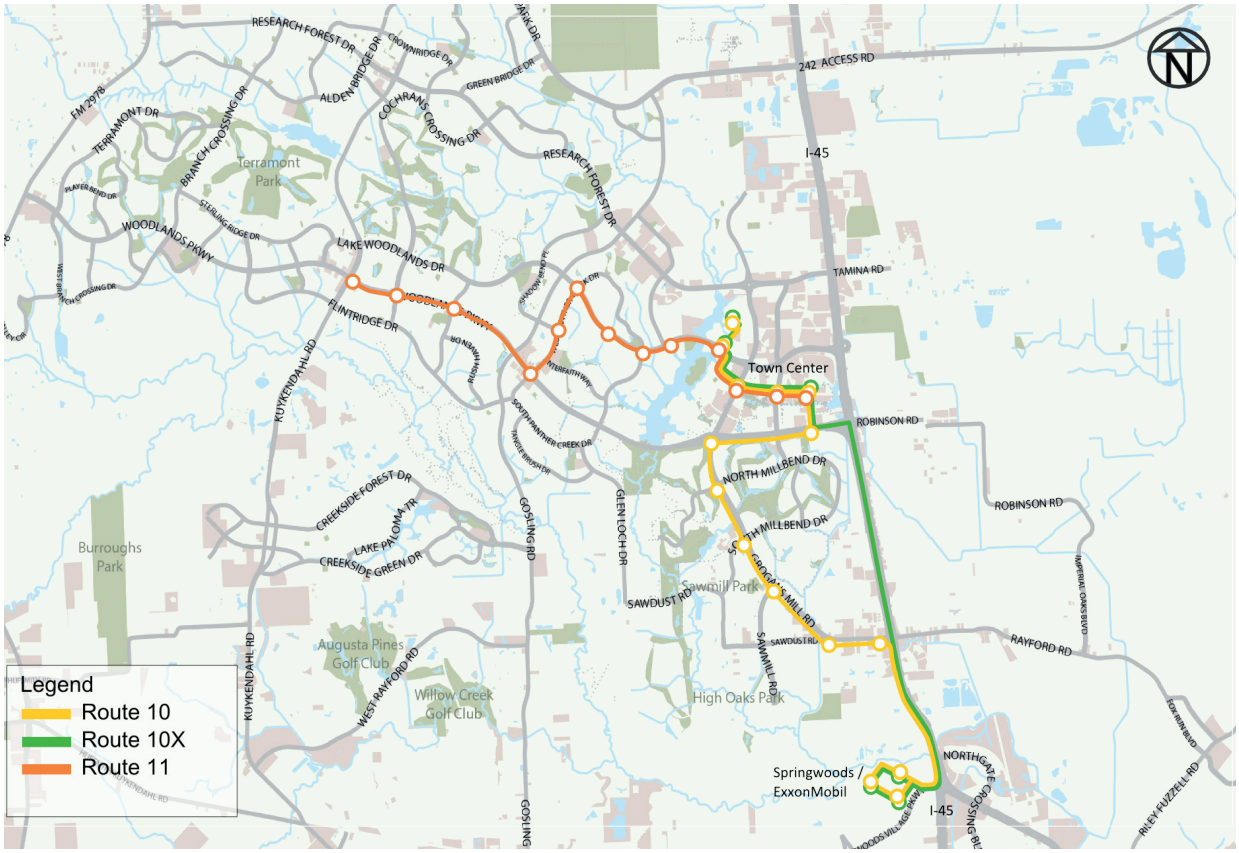
Route 10 also provides a connection between Springwoods / ExxonMobil and the Town Center / Hughes Landing area with multiple stops along Grogan's Mill Drive. Route 10 would better serve residents in The Woodlands area with more stops and access. However, this would increase travel times and likely attract less riders from Springwoods / ExxonMobil.

Local Bus Route 11

Route 11 proposes testing a transit route connecting the Town Center to the Indian Springs / Sterling Ridge Village Centers (with a stop in the Panther Creek area). This route would be a mid to longer term priority.

Route 11 could provide a deviated service with some fixed stops. The service would have specific times to meet at fixed route stops; however, it could also deviate to pick up passengers at other locations. Existing groups (like the Friendship Center) could provide calls for deviated stops for their able-bodied users. This service could help alleviate the use of specialized services by those that are able to use a traditional transit service.

Recommendations - Local Bus



Regional Mobility (Express Bus)

Express Bus - The Woodlands to Houston

Regional mobility is defined by The Woodlands Express commuter services between The Woodlands and multiple employment centers in the Houston metropolitan area. The plan presents potential recommendations for enhanced services from The Woodlands to Houston, and also reverse commute bus services originating in the Houston metropolitan area, traveling to key employment destinations in and around The Woodlands.

The existing Woodlands Express service is successful. The plan's recommendations aim to further enhance the system and ultimately grow ridership, revenue, and destinations. The new services described below are generally near-term priorities. These are presented as extensions of the existing service to minimize the risk associated with new investment in the service; it would not require immediate introduction of separate, new services. Based on the success and demand for the new destinations, future separate services could be considered in the longer term. The items below are recommended for all park and ride locations and services originating in The Woodlands and traveling to destinations in the Houston metropolitan area:

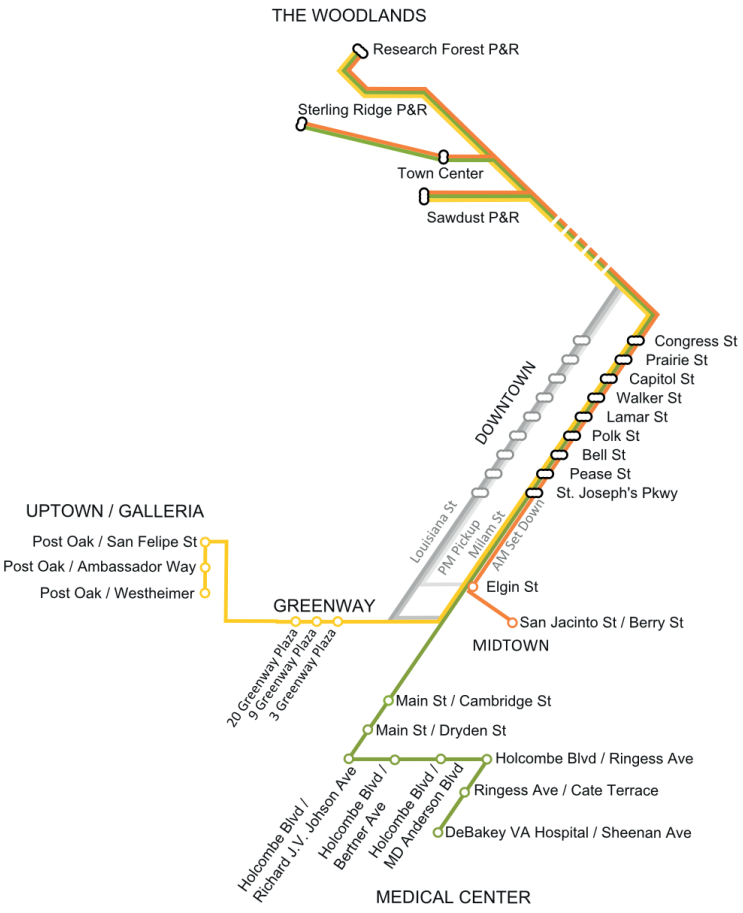
- Maintain all current services.
- Fill pedestrian gaps to all park and ride locations.
- Fill cycle gaps and provide cycle racks at all park and ride locations.
- Improve passenger drop-off/pick-up at park and rides.
- Address maintenance issues at park and ride locations - develop and implement ongoing maintenance plans for park and ride facilities.
- Use new marketing/website communications channels to highlight and advertise the changes (and encourage new riders).

Recommendations for expansion of existing services from the Research Forest, Sawdust, and Sterling Ridge park and ride locations to destinations in metropolitan Houston are included in the table on the next page. These are presented by each individual park and ride origin point.

Costs

The project team developed high level capital and operating costs for each option based on local unit costs, the potential infrastructure needs, and potential operating schedules of the services. The potential estimates do not account for any potential

The Woodlands Express (The Woodlands to Houston)



increases in revenues from fares, or other funding to offset the capital or operating expenses.

- Research Forest Park and Ride - Estimated capital cost: $300K and estimated annual operating cost: $565K (in addition to existing operating costs).
- Sawdust Park and Ride - Estimated capital cost: $1.3M and estimated annual operating cost: $325K (in addition to existing operating costs).
- Sterling Ridge Park and Ride - Estimated capital cost: $390K and estimated annual operating cost: $270K (in addition to existing operating costs).

More long range and higher risk expansion of The Woodlands Express would include adding completely new routes, as opposed to proposed extensions of the current route structure. New routes would require additional buses and, depending up the destinations, may result in greater non-revenue service hours (bus travel to position with no revenue passengers). Based on future surveys and demand, destination points in the Houston metropolitan area that may be considered for new service include The Woodlands to:

- The Energy Corridor Addicks park and ride (with transit-oriented redevelopment) and/ or other major employment centers (Shell Oil, ConocoPhillips, BP America).
- The University of Houston - Downtown campus and Burnett Transit Center.

Reverse Commute Express Bus - Houston to The Woodlands

Based on the public outreach efforts of the project and recent discussions with major employers, it appears that demand likely exists for reverse commuter services. To minimize overall risk and cost to The Woodlands (and partners), the plan recommends starting with focused service from downtown Houston to key employment destinations including the Town Center / Hughes Landing and the Springwoods / ExxonMobil area.

Multiple origins were examined as a starting point for these services. METRO's Downtown Transit Center was

Recommendations - Express Bus (The Woodlands to Houston)
Research Forest Park and Ride
New destinations – add new destinations for services originating at the Research Forest park and ride: • Research Forest park and ride to Uptown/Galleria as an extension of the current Greenway Plaza services. • Research Forest park and ride to Midtown as an extension of an existing downtown route. Later service – add two new later pick-up times on the evening return to Research Forest park and ride from: • Medical Center - add 6:05pm pick-up. • Greenway Plaza - add 6:30pm pick-up.
Sawdust Park and Ride
New destinations – add new destinations for services originating at the Sawdust park and ride: • Sawdust park and ride to Uptown/Galleria as an extension of the current Greenway Plaza services. • Sawdust park and ride to Midtown as an extension of an existing downtown route. Later service – add two later pick-up times on the evening return to Sawdust park and ride from: • Medical Center - add 5:40pm pick-up. • Greenway Plaza - add 6:40pm pick-up.
Sterling Ridge Park and Ride
New destinations – add a pick up point and a destination for services originating at the Sterling Ridge park and ride: • Sterling Ridge park and ride to Midtown as an extension of an existing downtown route. • New pick-up – add a pick up point in The Woodlands near Woodlands Parkway @ Grogan's Mill (walk-up stop) as part of the service originating from the Sterling Ridge park and ride. Later service – add two later pick-up times on the evening return to Sterling Ridge park and ride from: • Medical Center - add 5:40pm pick-up. • Greenway - add 6:40pm pick-up.

noted as the most desired starting point compared to other area transit centers and park and ride locations. The Downtown Transit Center is a key intermodal hub and would allow access, via local bus and light rail, from throughout the Houston area. Therefore, this starting point provides the greatest access and good potential for transit riders to avoid using their personal vehicle.

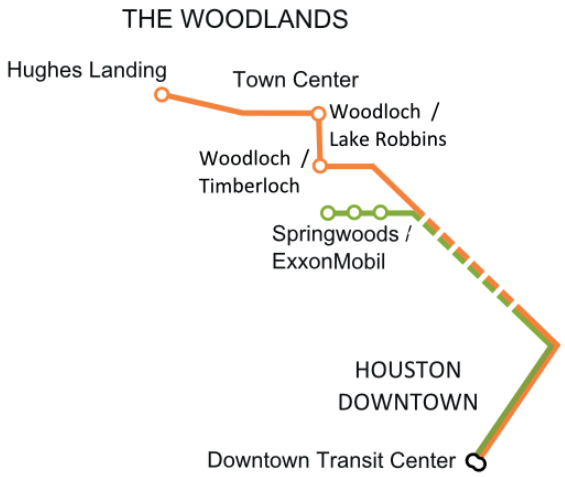
Costs

The project team developed high level capital and operating costs for each option based on local unit costs, the potential infrastructure needs, and potential operating schedules of the services. The estimates do not account for any potential revenues (from fares) or funding to offset costs.

- Reverse Commute Woodlands Express (Downtown Houston Transit Center to Town Center / Hughes Landing) - Estimated capital cost: $5K (signage) and estimated annual operating cost: $400K.
- Reverse Commute Woodlands Express (Downtown Houston Transit Center to Springwoods / ExxonMobil) - Estimated capital cost: $5K (signage) and estimated annual operating cost: $300K.

Using existing METRO park and ride locations as potential starting points for the reverse service did not receive an exceptionally strong response from stakeholders. However, given the overall success of park and ride in the metropolitan Houston area, this may be considered when testing the service or in the future. One scenario for testing could be adding a single intermediate stop for the service at the North Shepherd park and ride. The service would continue to originate at the Downtown Houston Transit Center, make one stop at the North Shepherd park and ride, and then proceed to The Woodlands or Springwoods / ExxonMobil. This could increase access to the service for those connecting by transit and by auto.

Reverse Commute Woodlands Express (Houston to The Woodlands



Recommendations - Express Bus (Houston to The Woodlands)
Reverse Commute Woodlands Express (Downtown Houston Transit Center to Town Center / Hughes Landing)
New service – add service originating at METRO's Downtown Transit Center to The Woodlands Town Center (with stops at Woodloch Forest Drive @ Lake Robbins Drive and Woodloch Forest Drive @ Timberloch Drive) and to Hughes Landing (stop central to the developing office complex along Hughes Landing Blvd.).
Reverse Commute Woodlands Express (Downtown Houston Transit Center to Springwoods / ExxonMobil)
New service – add service originating at METRO's Downtown Transit Center to the Springwoods / ExxonMobil area (multiple stops on the campus ring road, if security clearance is granted).

Complementary Strategies

In support of transit, active transportation, parking, and congestion minimization, the plan examined various complementary strategies to support the potential success of the transit scenarios (Town Center Mobility, The Woodlands Area Mobility, and Regional Mobility)

Transit Branding and Promotion

All scenarios considered under this plan should be paired with a comprehensive branding, promotion, and education program for all transportation modes / facilities (transit, active transportation, parking, etc.). This would include the new bus services proposed for the Town Center, as well as all other transportation services (Woodlands Express, local services, etc.). The program would seek to:

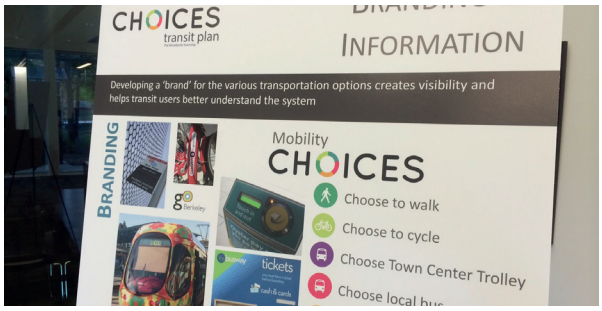
- Educate transit users and potential transit users on the existing and new services.
- Develop a clear identity for the various transit services that makes it easy to understand what the services are and how to use them.
- Promote the services and attract new users (focused on specific market segments).
- Build a 'culture of transit' among the community that promotes the high quality services.

The branding, promotion, and education campaign should be a near-term priority to be implemented with the introduction of each new service.

A transit system brand is more than just a graphic image; it is an identity that should reflect the combined attributes of the local community and the transit system.

Online Information

The success of the transit system would also be supported by the development of a single central website to disseminate transit information. Currently, information is provided on a number of different websites, with conflicting or duplicate information presented. A standalone website with a unique URL should be developed to incorporate the new branding and messaging scheme. Information should be easy to access, simple to understand, and the website should be the primary source of information for all transit / transportation choices in the service area. The website could be expanded as the system grows to incorporate an industry-standard interactive journey planner such as Google Transit that displays transit, walking, and cycling options to connect



between services. A mobile phone application could be another method to provide simple access to information for potential users.

Building Transit Ridership and Loyalty

The plan details various complementary activities that will support transit usage and multi-modal travel choices. The goal is to make transit attractive and convenient for the segment of the population that can and will use transit for some trips. A number of potential programs are possible; however, those detailed below may work best given the limited transit culture within the study area:

- Online ticketing – providers need to make it simple for someone to buy their product.
- Monthly transit passes – monthly passes improve the ease of transit service.
- Guaranteed ride home – this program provides a taxi service in a case of an emergency.
- Carshare – carshare systems provide hourly car rentals to members.
- Secure bike parking – cyclists feel more comfortable with secure and protected bike parking.

Developing ridership loyalty would require building programs over time and continuously encouraging new transit ridership, supporting existing transit users, encouraging rider loyalty, and in return growing transit revenues.

Pedestrian and Cycle Access to Transit

The ease of multi-modal travel in a community is critical to the success of transit. The actual transit ride on a bus or train is only one element of an overall journey. Transit riders arrive in cars, on cycles, and by walking. All of these modes make up a complete journey and it is critical to consider how these modes can be seamlessly integrated with transit in the study area. The most successful transit systems are complemented with robust pedestrian and cycling environments.

In an effort to achieve seamless connectivity, the team has identified a variety of key cycle and pedestrian corridors within the Town Center. This examination generally looked at the gaps and barriers at accessing the Town Center via cycle and walking. These gaps could limit connectivity to transit and therefore the success of any new transit provision. The Town Center's pedestrian facilities are good where there is frontage, streetscape, and business activity. However, where the built environment is more 'inward' facing (for example, to Market Street, The Mall, the Pinecroft area, Waterway Square, etc.) the pedestrian links from major corridors can be less visible or missing altogether. Broader improvements in the cycle and pedestrian network are likely needed, beyond just those that impact connectivity to transit. Improved multi-modal connectivity throughout the community supports the success of transit, as well as the goals of traffic and parking congestion mitigation. This plan supports the need to undertake a comprehensive examination of the cycle and pedestrian environment throughout the community. The environment could be examined as a network of connections, versus just the connections between transit and active modes.

Town Center Parking

The growth of employment and population in the Town Center, combined with the continued growth of the Town Center as a draw for regional shopping, recreation, and tourists presents significant congestion challenges. Traffic congestion and the associated parking congestion could be a hindrance to the ultimate build out of the Town Center. The availability of convenient parking has been identified as a concern by some stakeholders. To maintain the Town Center's attractiveness as a regional destination, an improved approach to parking should be investigated.

Opportunities for auto access and parking must be considered in the mix of mobility choices. Potentially driving to the Town Center, parking and then using transit to access multiple destinations (in the Town Center) supports the overall success of transit and limits congestion. This 'park once' concept would encourage those accessing the Town Center in their car to park in an appropriate location. Longer term parking would be encouraged in appropriate lots or parking structures, while shorter term parking could be on street (where higher parking turnover occurs).

Various strategies should be considered to improve the availability of convenient parking in the Town Center. Convenience is generally defined as readily available parking near one's destination. While this cannot be provided 100% of the time for all drivers that need parking, various strategies can be implemented to support the availability of parking. Parking turnover adjacent to local businesses can also be positive, by providing more visibility and access to adjacent businesses more often. Transit could help facilitate the development of complementary parking strategies.

Next Steps

The Woodlands Township Transit Plan examined a comprehensive number of potential transit options that could benefit mobility within the study area. These recommendations are presented for consideration and application by the local community and decision makers. Communities are dynamic places, continuously developing and changing. The recommendations included in this plan must also be dynamic. These recommendations provide the community and decision makers with a basis for future implementation of transit options. However, the recommendations should not be perceived as a literal mandate of actions. The intent is that these plans be further refined to reflect the continuously changing needs of The Woodlands and surrounding communities.

Details on the development of the plan, stakeholder involvement, funding considerations, and recommended next steps are further explored in the full plan document. The plan highlights the key recommendations and the time frames for consideration of implementation.

Near Term Implementation

- Town Center bus Route 1 service between Town Center and Hughes Landing.
- Later pick up times for the existing Woodlands Express routes.
- Pilot the Woodlands Express (The Woodlands to Houston) expansion to Midtown and Uptown / Galleria.
- Pilot reverse commuter Woodlands Express (Houston to The Woodlands / Springwoods) service.
- Complementary strategies, specifically addressing ease of ticketing / sales, online presence and information, and a marketing / branding strategy.

Mid and Long Term Implementation

- Town Center bus Route 2 service between the Town Center and Memorial Hermann Hospital.
- Town Center bus Route 3 service between the Town Center and areas south of the waterway.
- Local bus service Route 10 or 10X between the Town Center / Hughes Landing and Springwoods / ExxonMobil (potential partnership with ExxonMobil).
- Local bus service Route 11 between the Town Center, Panther Creek, and Indian Springs / Sterling Ridge.

Implementation of these new and enhanced services begins to provide broader mobility choice for area residents, employees, and visitors over time. The plan proposes new services and extensions to be piloted or tested to determine their success and how to refine the services over time to best meet the needs of users.

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THE WOODLANDS TOWNSHIP