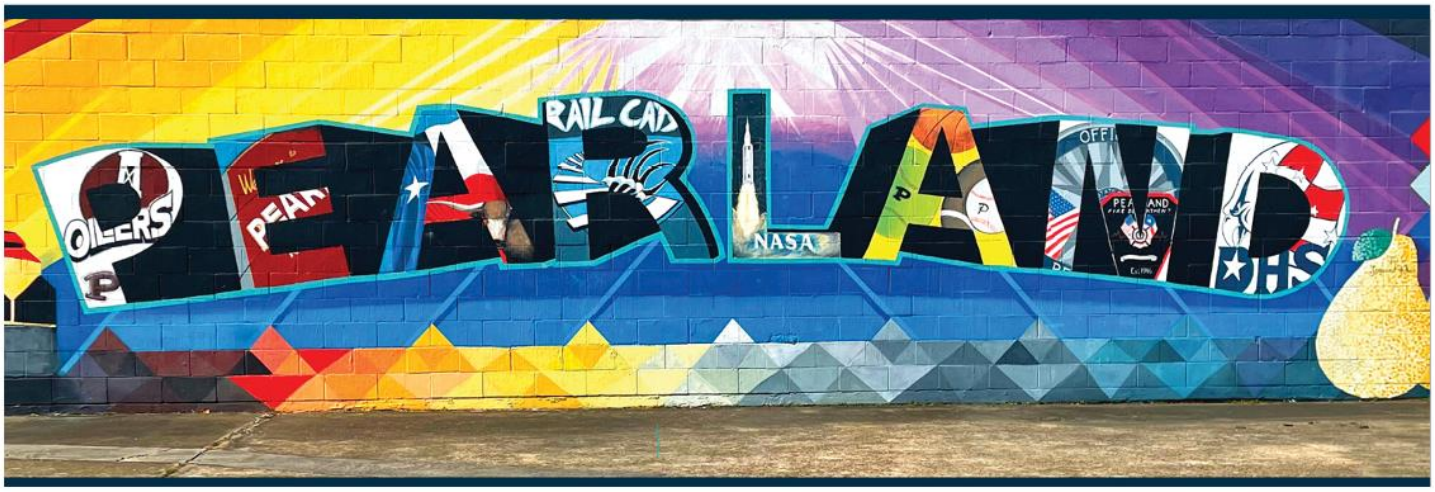

Pearland Transit Needs Assessment & Feasibility Study

DRAFT FINAL REPORT

September 2024

Houston-Galveston Area Council

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Pearland Transit Needs Assessment & Feasibility Study

DRAFT FINAL REPORT

Section I – Introduction

PROJECT DESCRIPTION WITH PURPOSE

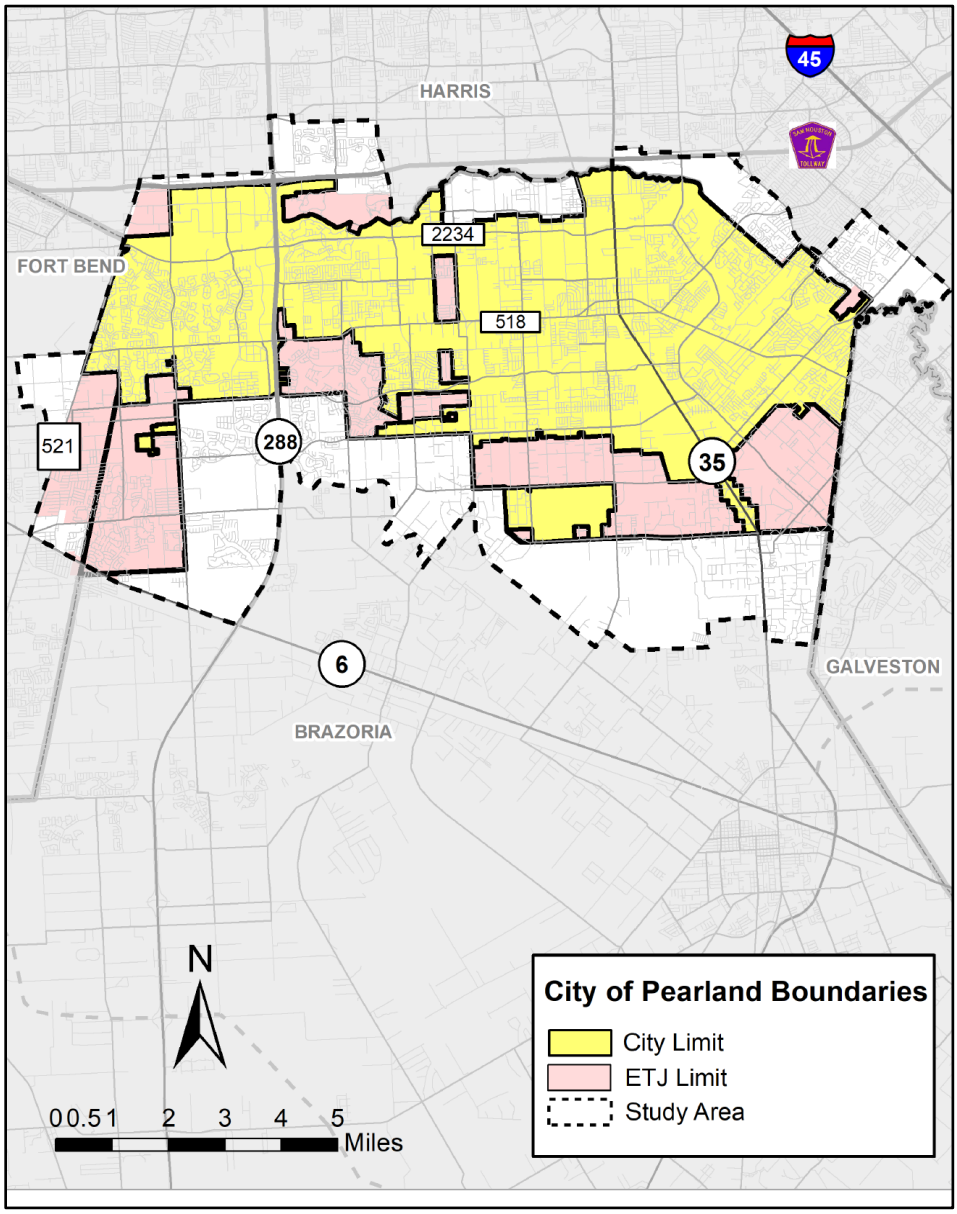
The Pearland Transit Needs Assessment & Feasibility Study (The Study) aims to evaluate the feasibility of developing practical and fiscally constrained, or cost-conscious, public transportation alternatives for the city of Pearland. If the alternatives are found viable, the study will progress to an analysis of transit alternatives and service recommendations. The city of Pearland, as the key stakeholder, will have the opportunity to review and consider these recommendations for the future of public transit services.

OBJECTIVES

The Pearland Transit Needs Assessment & Feasibility Study includes a series of objectives designed to give an overview of the study's course. The objectives are to:

- Evaluate existing conditions and review relevant professional literature/reports on Pearland that would provide a perspective on assessing transit needs.
- Examine transit experiences and services provided in a wide range of peer cities to determine what may be feasible for the city of Pearland.
- Use the Houston-Galveston Area Council (H-GAC) Transit Need Index to identify the relative level of community need and the resulting services appropriate within the city of Pearland.
- Consider intercity demand, focusing on destinations of high employment concentration.
- Develop a multifaceted community outreach strategy that uses detailed surveys, public meetings, a study website, and social media and email campaigns to reach diverse parts of Pearland.
- Prepare initial findings based on assessing existing conditions, transit needs, and community preferences.
- Provide multiple transit alternatives that can be implemented in the short term (fewer than five years) and identify a preferred alternative for transit service(s).
- Work closely with Pearland city officials, staff, and other stakeholders throughout the study.
- Develop a practical and appropriate implementation strategy for the city of Pearland.

Figure 1.1: The Study Area



A Study Area is a specific geographic region or boundary designated for research or analysis. The Study Area (figure 1.1) for the Pearland Transit Needs Assessment & Feasibility Study includes the city of Pearland, its Extraterritorial Jurisdiction (ETJ), and all Census Block Groups located fully and partially within the city of Pearland.

The Census Block Groups, defined by the U.S. Census Bureau, are areas typically consisting of around 4,000 residents and may not align with the city's boundaries. As a result, The Study Area extends beyond Pearland's boundaries. Given that Census Block Groups represent the smallest geographical units available for analyzing and developing demographic data, it is practical to use them for this analysis.

Section II – Pearland Transit History and Existing Conditions

PEARLAND TRANSIT HISTORY

In the last four years, three transit services have operated (or are currently operating) in Pearland. Demand-response services, based on passenger requests, through the Harris County Rides program and commuter vanpooling through METROStar are currently active. However, a privately operated commuter bus service discontinued its operations in 2020.

In the 2000 U.S. Census, the city of Pearland was classified as part of rural Brazoria County. The Gulf Coast Center provided the community with demand-response services beginning in the 1980s, which continued until 2012. These services were discontinued in 2012 when Pearland was reclassified as urban, following its inclusion in the Houston Urbanized Area.[1]

Currently, the city of Pearland's existing transit service is provided by Harris County Rides through an interlocal agreement with the Gulf Coast Transit District (GCTD). This demand-response service is available 24/7 for seniors and individuals with disabilities The city of Pearland contributes by matching passenger fares dollar-for-dollar, up to $21 per one-way trip or $42 for a round trip. Passengers cover half the fare, with Harris County Rides matching the rest. The GCTD oversees the program, which costs the city up to $36,000 annually, based on an estimated 3,000 trips per year.

Efforts to establish a park-and-ride service with the Metropolitan Transit Authority of Harris County (METRO) were unsuccessful despite several years of attempts. In 2019, the city of Pearland contracted with a private transit provider, Kerrville Bus, to offer commuter service from Shadow Creek Sports Park to the Texas Medical Center and Downtown Houston. However, this service was discontinued in 2020. Reasons for the ending this service included:

- **The COVID-19 Pandemic**: This led to a significant reduction in commuter transit demand.
- **Ongoing Construction Along State Highway 288**: Construction projects impacted travel times and accessibility.
- **High Passenger Fares**: The cost of $13 to $15 per round trip[2] was prohibitive for many potential riders.
- **The Park and Ride Location**: Situated more than 1.5 miles west of State Highway 288, the location was inconvenient for Pearland residents, particularly those living east of the highway.

---

[1] Per discussion with Gulf Coast Center Chief Financial Officer Rick Elizondo
[2] Discussion with Pearland City Manager Trent Epperson

EXISTING CONDITIONS

Demographics

Population and demographic data from the U.S. Census Bureau (2018) reveal that Pearland has experienced rapid growth and is projected to continue expanding through 2030, with a subsequent slowdown anticipated. As the city's population has increased, so has employment. H-GAC staff have reviewed not only demographic trends by also land use and announced developments. These factors align with the observed patterns of significant past and near-term growth.

Additional demographic information related to possible transit service for Pearland include:

- Increase of the senior population (over 65) to more than 9%.
- The number of persons with disabilities between 18 and 64 is approximately 11.5%
- Households with incomes below the poverty level stand at approximately 15%.

Refer to the Technical Memorandum (Appendix A) for additional information on demographics.

Literature Review and Peer Analysis

Previous local and regional transit and transportation studies offer valuable recommendations for future transit services in Pearland. For this analysis, eight studies were reviewed. The following chart (figure 2.1) summarizes the recommendations from each study. Common themes include recommendations for demand-response service for transit within Pearland and park-and-ride/commuter service to the Texas Medical Center and Downtown Houston.

Figure 2.1: Review Summary from Previous Transit and Transportation Studies

Author	Study Title	Fixed Route	Demand Response	Individuals with Transit Needs	Regional Intercity Bus Service	Commuter or Park & Ride Transit	Pedestrian Bike	Light Rail
A&R Consulting	City of Pearland Transit Feasibility Study (2009)	D	R	R		R		D
City of Pearland	2015 Comprehensive Plan					R	R	
Pearland Economic Development Corporation	Pearland 20/20 Community Strategic Plan (2013) – 2015 Update					R		
H-GAC	High-Capacity Transit Task Force Priority Network	R	R	R	R	R		
H-GAC	Regionally Coordinated Transportation Plan (RCTP) 2017 Update	D	R	R				
Pearland Economic Development Corporation	Pearland Prosperity Strategic Plan (2021)	D	D			R		D
City of Pearland Parks Department	Pearland Multimodal Plan						R	
H-GAC	RCTP 2022 Update	D	R	R				

(D = Discussed | R = Recommended)

To gain insights into potential transit solutions for Pearland, several cities of similar size and characteristics were also examined. This review aimed to understand the types of transit services offered to serve the needs of residents, commuters, and visitors. The modes of service they offer meet the needs of their residents, commuters, and visitors. The modes of service used by these communities can offer perspectives on feasible options for Pearland.

Initially, the Texas cities reviewed included The Woodlands, Arlington, Denton, and Carrolton, as well as Fort Bend Transit including Sugar Land. For a more comprehensive review, additional peer cities also included the Texas cities of Abilene, Pflugerville, and Kyle as well as Peoria, Arizona, at the request of the Pearland Transit Needs Assessment

& Feasibility Study steering committee, a collective of stakeholders assembled in 2022 to ensure the Study's success. The chart (figure 2.2) summarizes the transit services offered by the initial list of peer cities and was updated to include cities added by the steering committee. Notably, most of the cities reviewed provide on-demand services, including microtransit and ride-hailing options.

Figure 2.2: Peer City Profiles

Service Area	Fixed Route	Dial A Ride	ADA Paratransit	On-Demand Service	Commuter Bus	Light Rail	Heavy Rail
Fort Bend Transit		X		X	X		
The Woodlands Township	X		X		X		
Arlington		X		X			X
Denton	X		X	X		X	
Carrollton			X	X		X	
Abilene	X	X	X	X			
Peoria, AZ	X	X	X		X		
Pflugerville				X	X		
Kyle				X	Future		

Transit Need Index

A Transit Need Index evaluated the relative demand for transit services, particularly for individuals with limited mobility options. It measures transit needs based on several key factors. For this study, the Transit Need Index incorporates six weighted factors:

- Percent of Households Without a Vehicle – 20 percent
- Income Level – 20 percent
- Persons Aged 65+ – 15 percent
- Households with a Person with a Disability – 15 percent
- Children Aged 6 to 17 – 10 percent
- Population Density – 20 percent[3]

While population density does not directly measure transit needs, it is crucial to understand which types of transit modes might be most viable in the area.

[3] Based on the US Census Community Survey 2018 (pre-COVID) for need indicators and H-GAC data analytics Longitudinal Employment and Household Information.

The Transit Need Index was applied in two phases: first, to compare Pearland's relative needs to those of the broader 13-county Houston-Galveston region, and second, to evaluate transit needs specifically within the Study Area.

- The first map (figure 2.3) illustrates Pearland's transit needs related to the entire 13-county Houston-Galveston region, showing that most areas of Pearland have lower transit needs compared to the regional average.

- The second map (figure 2.4) focuses on the Study Area, highlighting the city's specific transit needs. This targeted analysis provides a clearer picture of Pearland's specific transit needs, identifying areas with both higher and lower relative transit demands.[4] The map illustrates that higher transit needs are concentrated east of State Highway 288, while moderate needs are observed both west and east of State Highway 35, or Telephone Road.

4

Figure 2.3: Pearland Transit Needs Index - Based on Regional Metrics

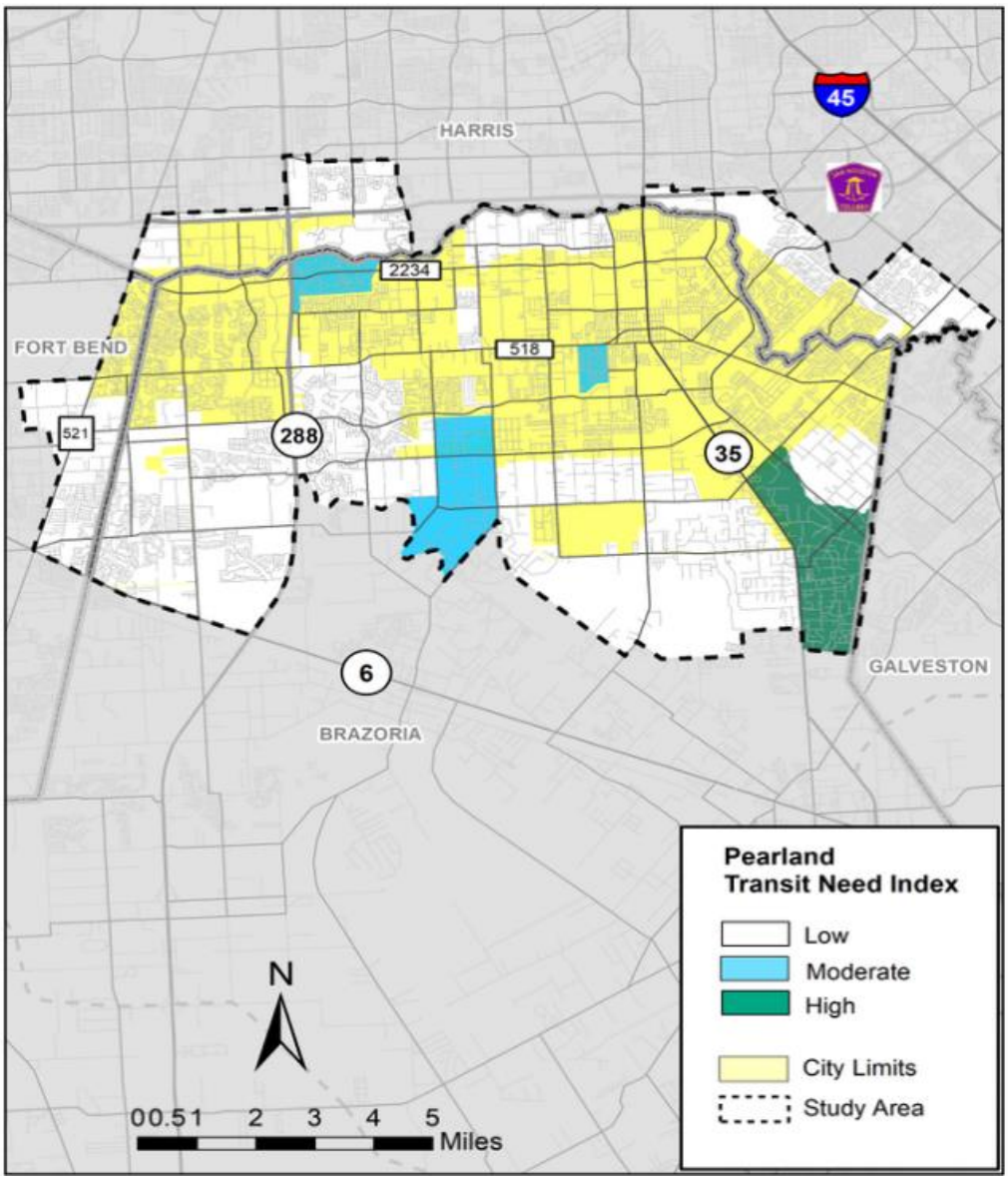
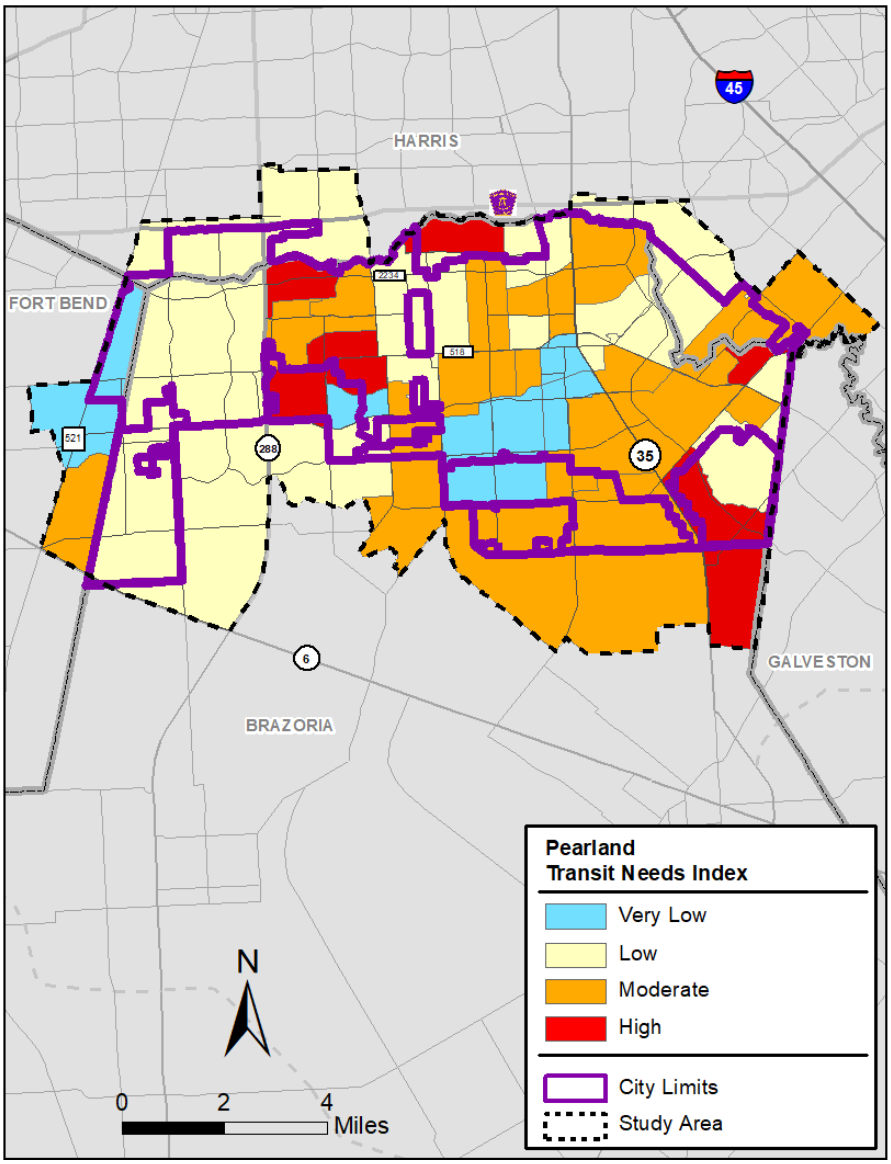


Figure 2.4: Pearland Transit Needs Index – Based on Study Area



Commuter Demand

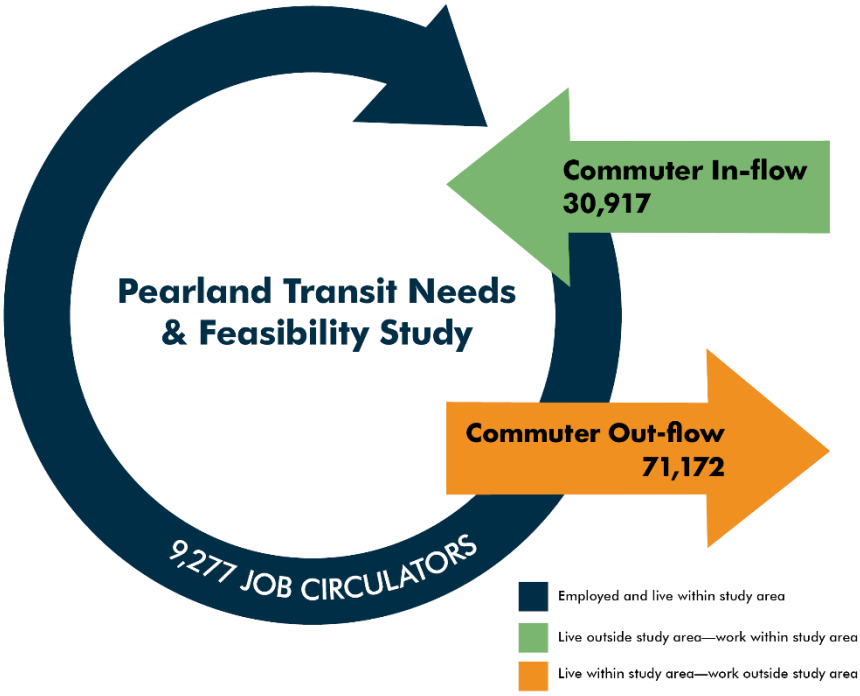
Service between cities is primarily based on estimates of commuter demand for specific destinations (see figure 2.5). Commuter demand is categorized into three main areas:

- **Travel Outflows**: This measures work-related trips originating from Pearland and traveling to locations outside the city, such as Houston.
- **Travel Inflows**: This identifies trips coming from outside of Pearland to employment destinations within the city.
- **Job Circulators**: This category tracks work trips that both start and end within Pearland, reflecting internal commuting patterns within the city.

The left side of figure 2.6 lists the primary destinations of more than 71,000 individuals who commute daily from Pearland to outside cities for work. Houston is the top destination, accounting for 62 percent of these commuters.

For additional detail, the right side of the table outlines the primary employment destinations, or Employment Districts, within Houston. These districts represent where the majority of Pearland commuters work within the city. Among these, the Texas Medical Center and Houston Downtown emerge as the top destinations, attracting the highest percentages of commuters.

Figure 2.5: Pearland Commuter Demand



Source: Longitudinal Employment Household Demand (LEHD) 2018

Figure 2.6: Pearland Commuter Employment Destinations (Outside of Pearland)

Destination City	Jobs	Percentage of Commuters	Employment District	Jobs	Percentage of Commuters
Houston	44,272	62.2%	Texas Medical Center	7,616	9.5%
Pasadena	3,083	4.3%	Houston Downtown Area	4,584	5.7%
Alvin	1,943	2.7%	Hobby Area	1,492	1.9%
Sugar Land	1,933	2.7%	Westchase	1,361	1.7%
Webster	1,122	1.6%	Uptown	1,270	1.6%
Deer Park	1,033	1.5%	Southwest	1,061	1.3%
League City	1,022	1.4%	Memorial	990	1.2%
Galveston	727	1.0%	Spring Branch	914	1.1%
La Porte	720	1.0%	Greater Southeast	807	1.0%
Stafford	703	1.0%	Greater East End	748	0.9%

Source: Longitudinal Employment Household Demand (LEHD) 2018

Existing Conditions Summary

After documenting existing conditions and conducting further research, H-GAC staff developed the following summary of existing conditions to help frame the alternatives analysis and recommendations for the study:

1. **Growth and Density**: Despite Pearland's robust growth through the past 30 years, it remains a low-density city.

2. **Transportation Needs**: Previous reports on transit services in Pearland highlight a clear need for intracity transportation and commuter services to major Houston employment centers.

3. **Peer City Comparison**: A peer city analysis revealed that demand response or on-demand services were used across all examined locations. Most peer cities, excluding Abilene, either have or plan to offer commuter services (rail or bus),

with commuter buses being the most common in the reviewed cities and counties.[5]

4. **Transit Need Index**: The Transit Need Index identifies a higher need for intracity transit service east of SH 288.

5. **Commuter Service Demand**: There is a significant demand for commuter services between Pearland and major Houston destinations, such as the Texas Medical Center and the Central Business District.

6. **METRO Star Vanpool**: METRO Star's existing vanpool service provides employment services for Pearland residents in Houston and Lake Jackson. Demand declined as a result of the COVID-19 pandemic. Pearland does not incur costs for this service, which contributes to intercity mobility[6].

7. **Fixed-Route Service**: Fixed-route services are not promising due to Pearland's low density and the community and city leadership's unfavorable view of this option. While other services may be suitable for future planning, they are not considered in this study.

8. **On-Demand Transit**: On-demand service is emerging as a practical alternative to fixed-route transit and might be a more suitable option for Pearland.

Based upon 2018 LEHD Data.

[6] Based on information provided by METRO.

Section III – Public Outreach

Public outreach for the study involved both online and in-person meetings, supported by a steering committee and public outreach committee that helped shape the study's content and engagement efforts. Two rounds of public meetings were held in May 2023 and March 2024 to gather community input. Additionally, an online survey facilitated continuous feedback and dialogue with the public throughout the study process.

PUBLIC MEETINGS

Two series of public meetings were held throughout the study to gather community input, offering both online participation and in-person attendance at Pearland City Hall and Pearland West Library.

The first series of public meetings took place in May 2023, drawing more than 65 attendees across two on-site meetings and one online session. The discussion focused on providing an overview of the study's progress, including a review of existing conditions and peer analysis. The feedback and comments from these meetings aligned with the responses collected from a public survey.

The second series of meetings occurred in March 2024, with 31 participants. These meetings focused on presenting various alternatives for transit service and fostering public dialogue. All 27 comments received expressed positive support for developing both commuter and intracity services in Pearland.

PowerPoint presentations from both sets of meetings are available at www.engage.h-gac.com/Pearlandtransitneeds. The website also provides access to study documents and public comments.

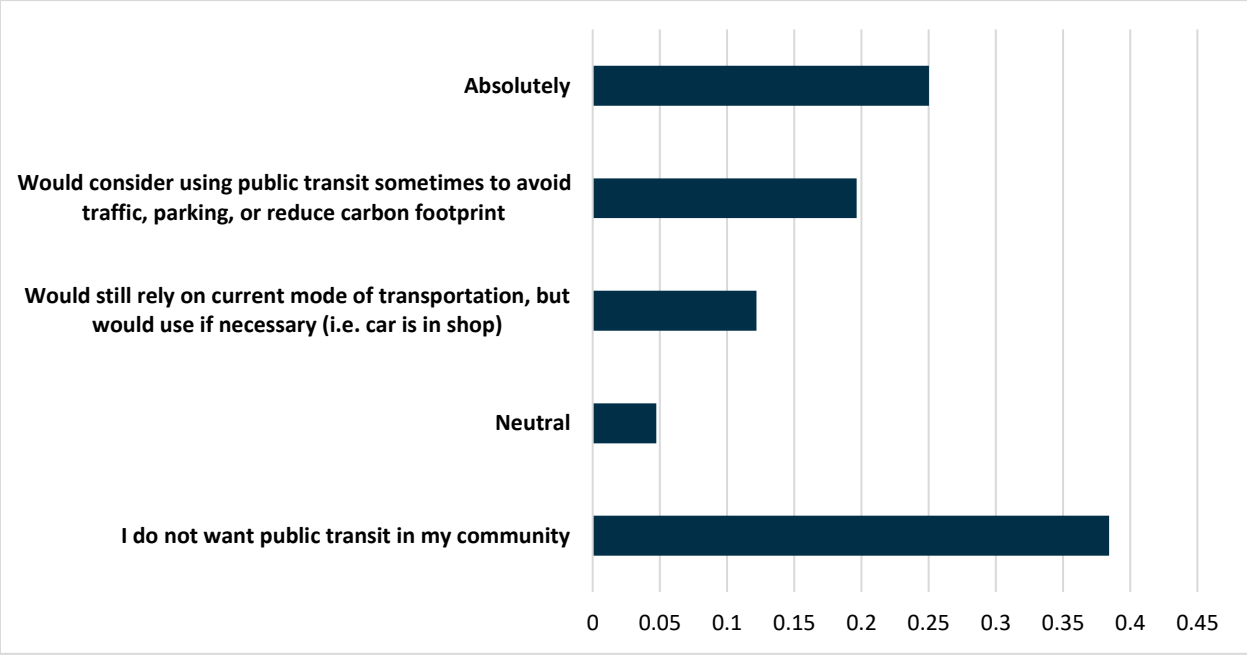
ONLINE SURVEY RESULTS

The Pearland Online Community Survey, conducted in collaboration with the city of Pearland, received more than 2,300 responses. The results revealed that 57 percent of residents favored transit services within the city, compared to 43 percent who did not. The survey, along with feedback from the website and public meetings, strong community interest in both commuter and intracity services, which played a key role in shaping the alternatives analysis for transit service outcomes.

Notably, demand-response services received more support than general transit services. By a significant margin of 75 percent to 25 percent, survey respondents expressed a strong preference for demand-response service, especially for seniors and individuals with disabilities.

Additional survey questions explored the potential use of public transit for work travel, with 57 percent of respondents indicating they would use such services some or most of the time (figure 3.1).

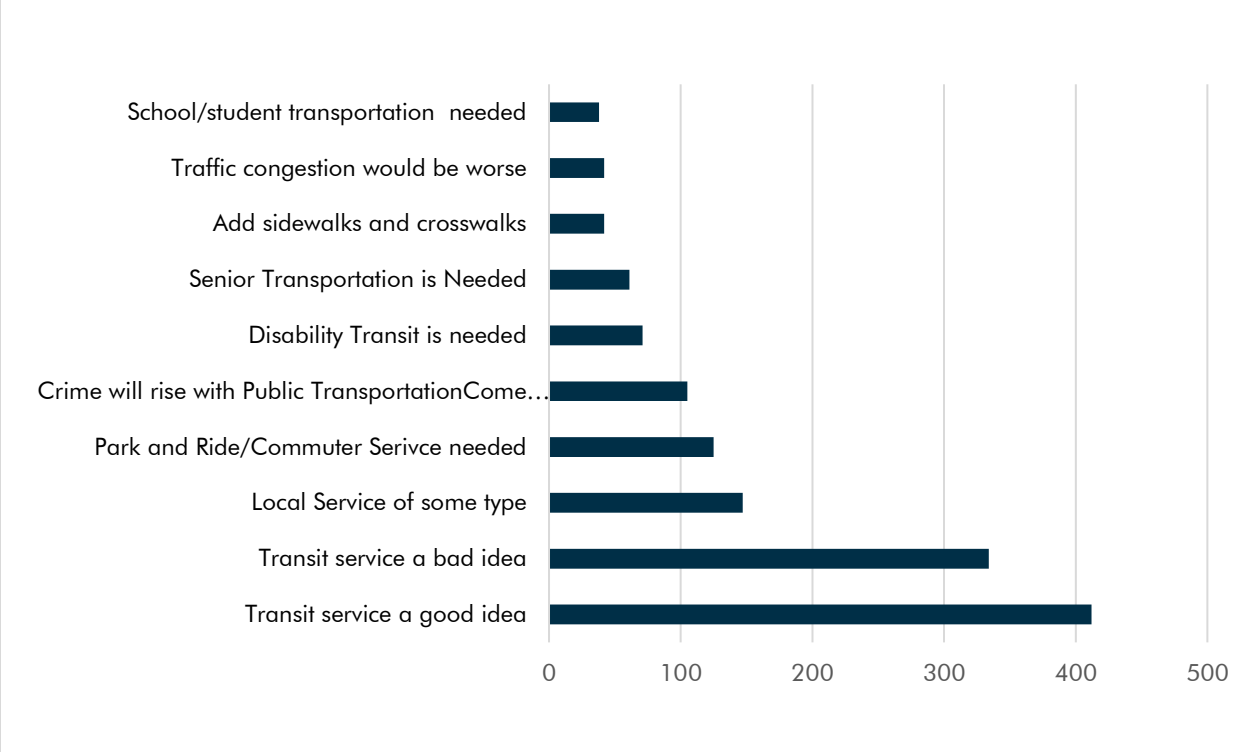
Figure 3.1: Pearland Online Community Survey Responses – Would You Consider Using Transit from Pearland to Go to Work?



Approximately, 40 percent of survey respondents, or more than 900 individuals, left comments on the 2,300 surveys completed. The top 10 most frequent comments were made by at least 40 people each.

- Seven of the 10 top comments expressed that transit would be a promising idea and is needed for some or all of the Pearland Community. This sentiment of favorability towards transit reflected the same level of support seen in the overall survey results.
- More than 30 percent of commenters voiced concerns that transit service would be a bad idea. Common concerns included the potential for increased crime and worries that public transit would worsen area congestion.

Figure 3.2: Pearland Transit Survey Written Comments – Top 10 Topics



KEY TAKEAWAYS FROM PEARLAND TRANSIT OUTREACH EFFORTS

Demand-Response/On-Demand Service: Most Pearland residents surveyed, as well as those attending public meetings, viewed demand-response or on-demand service favorably, particularly for seniors and individuals with disabilities.

Intercity Commuter Service: When alternatives were presented in the second round of public meetings, feedback was positive regarding intercity commuter services to Houston.

Fixed-Route Services: Fixed-route transit within the city of Pearland received unfavorable responses from residents.

Section IV – Service Types and Alternatives Analysis

OVERVIEW AND METHODOLOGY

The alternatives analysis forms the foundation for transit service and administration recommendations, allowing the Pearland community to evaluate the potential for expanding transit services. Based on a comprehensive needs assessment, peer analysis, community input, as well as feedback from the steering committee and the city of Pearland, H-GAC staff developed four transit service alternatives using the following criteria:

1. Ensure fiscal constraints regarding the local costs for initiating and maintaining services.

2. Address a substantial portion of identified intracity and intercity transit needs.

3. Align with the preferences of the Pearland community.

4. Consider the likelihood of residents using the proposed services.

5. Provide reasonable projections for passenger ridership (see estimates in alternatives presented.)

6. Be practical for implementing and operating transit services in a city currently without existing transit, infrastructure, or staffing.

7. Account for administrative, capital, and operating resources required to enhance mobility services in Pearland.

8. Include a cost-benefit analysis to quantify the benefits of each transit service option.

Each alternative is based on specific service scenarios. The transit components of each option will be discussed individually before reviewing potential alternative packages. Additionally, the analysis will identify services not recommended for short-term (0-5 years) and evaluate the costs, federal assistance, and potential resources available for each option.

Service options considered in the alternatives analysis include:

- Continue demand-response service within Pearland, with matching costs and fares, using the existing Harris County Rides partnership.
- Offer commuter Park and Ride service from Pearland West near SH 288 to the Texas Medical Center, with initial funding provided through H-GAC's Commuter and Transit Pilot Program for three years.
- Initiate on-demand microtransit service within Pearland, using both passenger wheelchair-accessible vehicles for seniors, individuals with disabilities, and the general public.

- Launch on-demand ride-hailing service within Pearland, offering passenger vehicles including wheelchair-accessible options for individuals with disabilities, seniors, and the public.

Details of each option will be outlined in the sections that follow.

SERVICE OPTION 1: HARRIS COUNTY RIDES (EXISTING SERVICE)

Harris County Rides' demand-response service is currently provided in Pearland by various transportation providers assigned on a trip-by-trip basis. This service is available to seniors and individuals with disabilities for travel within the city of Pearland.

Harris County Rides operates the demand-response service under an intergovernmental contract that reduces user costs by 50 percent with the service matching the remained cost. Federal funding, through the Federal Transit Administration's Enhanced Mobility of Seniors & Individuals with Disabilities program (49 U.S.C. Chapter 53, Section 5310), covers 50 percent of the net operating costs for seniors and individuals with disabilities. The rider subsidy for travel costs can be matched up to $21, depending on the trip length within

Pearland. While federal funding is discretionary, it has been sustained for more than a decade. Other aspects of the service include:

- The current service is provided by Gulf Coast Transit District (GCTD) through an interlocal agreement with Pearland. Harris County Rides awarded a grant to GCTD through the FTA Enhanced Mobility of Seniors & Individuals with Disabilities program, and GCTD entered an interlocal agreement with the city of Pearland.
- Seniors and persons with disabilities are eligible to qualify for the service.
- Up to 3,000 one-way trips are budgeted annually at an average of $12 per trip; however, historically, fewer than 3,000 trips have been provided.
- The potential cost of trips can be a disincentive for individuals with limited incomes, as fares are based on trip length, making longer trips more expensive.
- The full subsidy is not always used.

The service is funded by federal dollars (approximately $36 thousand annually), local contributions ($36 thousand annually), and passenger fares.

SERVICE OPTION 2: COMMUTER TRANSIT FROM NEAR STATE HIGHWAY 288 TO THE TEXAS MEDICAL CENTER AND DOWNTOWN HOUSTON

Key features of the commuter service include:

- Service typically runs from suburban locations to large employment centers such as the Texas Medical Center and Downtown Houston.
- Service originates from a park-and-ride lot, transit center, or another location offering extensive parking capacity. This central gathering point allows for practical transit service density.
- Most trips are scheduled during peak travel hours, though midday service is usually available.
- It is much less expensive to operate per trip compared to demand-response or on-demand services.
- A 15-year analysis of commuter bus services shows that the measurable benefits exceed the costs.

Commuter service typically uses over-the-road coaches or large cutaway buses. Fort Bend County, for instance, has successfully used large cutaway buses for more than 20 years. On March 4, 2024, Fort Bend County launched a new service from Sugar Land to Downtown Houston, quickly achieving its target of 300 daily trips in its first year. As of the fourth month of service, ridership had exceeded 80% of the year-one goal and was trending upward.

Historical Context: Prior park-and-ride services were offered in Pearland between 2019 and 2020 under a contract between the city and Kerrville Bus (a subsidiary of Coach USA), running from the Shadow Creek Sports Park to the Texas Medical Center and Downtown Houston. However, the service was discontinued due to low ridership. Several factors contributed to this:

- The fare for the service ranged from $13 to $16 per round trip, which was high compared to similar services like Fort Bend Transit, which charges $8 per round trip. A more reasonable fare would likely increase demand if ridership was developed.
- Construction on SH 288 resulted in longer-than-expected travel times.
- The COVID-19 pandemic halted virtually all regional commuter services. The impact of the pandemic on work patterns further curtailed or temporarily suspended commuter services.
- The park-and-ride location at Shadow Creek Sports Park was too far west of SH 288, making it difficult for residents to access. A more successful park-and-ride must be located closer to SH 288.

Potential for Future Success: The closure of the Shadow Creek Sports Park and Ride does not mean that commuter transit cannot succeed under more favorable conditions. Analysis and modeling indicate that service demand near SH 288 could attract significant ridership. Since the peak of the COVID-19 pandemic in 2020 to 2021, commuter service

has rebounded. Although ridership has not yet returned to pre-COVID levels due to evolving work patterns, it has increased significantly compared to peak pandemic levels.

Projections for commuter service viability from SH 288 in Pearland and the Texas Medical Center and Downtown Houston remain positive. H-GAC analysis suggests that the benefits of commuter service exceed the local service cost that the city of Pearland would need to underwrite. The Congestion Mitigation and Air Quality (CMAQ) Commuter and Bus Pilot Program, administered through the Texas Department of Transportation, could fund 80 percent of the net costs (total cost minus fares and other revenue) for the first three years of service. This program provides a practical alternative to congested travel and allows riders to avoid high parking costs in Downtown Houston and the Texas Medical Center. Additionally, parking at park-and-ride lots is usually free, and a much lower fare ($4 per one-way trip) compared to the previous 2019 to 2020 would likely attract more riders.

Figure 4.1 outlines projected costs, revenues, and operating details for commuter service from near SH 288 to the Texas Medical Center. The service is expected to operate on weekdays with 13 daily trips (six in-bound, six out-bound, and one midday). Initial funding would come through the CMAQ program for the first three years, with 50 percent federal funding after the pilot phase. The remaining costs would need to be covered by fares and local revenues.

Figure 4.1: Commuter Park-and-Ride Pearland West to the Texas Medical Center: Projected Costs, Revenues, and Operating Information

Data	Year 1	Year 2	Year 3	Year 4	Year 5
Yearly Service Days	250	250	250	250	250
Annual Passengers (Unlinked Trips)[7]	80,000	84,000	88,200	88,200	88,200
Daily Vehicle Hours	13	13	13	13	13
Annual Vehicle Hours	3,250	3,250	3,250	3,250	3,250
Expenses					
Operating Expenses[8]	$650,000	$650,000	$650,000	$715,000	$715,000
Average Fare	$4.00	$4.00	$4.00	$4.00	$4.00
Farebox Revenue (Annual Passengers x Average Fare)	$320,000	$336,000	$352,800	$352,800	$352,800
Net Operating Expenses	**$330,000**	**$314,000**	**$297,200**	**$362,200**	**$362,200**
CMAQ Funding Levels	80%	80%	80%		
CMAQ Funding Dollars (years 1-3)	$264,000	$268,000	$237,760		
Local/Non CMAQ Funding Level	20%	20%	20%		
Local Funding Dollars (years 1-3)	**$66,000**	**$62,800**	**$59,440**		
% Federal Funding (years 4-5)				50%[9]	50%
$ Federal Funding (years 4-5)				$181,100	$181,100
% Local Funding (years 4-5)				50%	50%
$ Local Funding (years 4-5)				$181,100	$181,100
Program Administration[10]	$110,000	$114,400	$118,976	$123,375	$128,684
Total Local Funding (years 4-5)	**$176,000**	**$176,800**	**$178,416**	**$304,375**	**$309,784**

[7] Assumes 5 percent increase between years 1, 2, and 3
[8] Assumes 15percent increase between years 3 and 4
[9] Assumes 50 percent Federal Transit formula funding in years 4 and 5
[10] Assumes 4 percent annual increase in administrative cost

SERVICE OPTION 3: PEARLAND ON-DEMAND MICROTRANSIT SERVICE

Microtransit is a form of on-demand service that, from the customer's perspective, resembles traditional demand-response or dial-a-ride service. However, it operates through an app or phone call, typically responding to requests within 30 minutes or less. Because it is app-based, microtransit functions similarly to transportation network company services like Uber or Lyft from the customer's perspective.

Microtransit leverages advanced technology to efficiently arrange and schedule trips. When used as a public transit service, microtransit typically involves shared rides with two to seven passengers, rather than offering individual, point-to-point trips. The first-year annual cost is projected to be less than $2 million. To maximize federal transit funding, the CMAQ Commuter and Transit Pilot Grant could be considered.

Additional Microtransit Characteristics:

1. **Contracting Transportation Network Companies (TNC**): Microtransit services are often contracted to provide service within a city or a specific designated zone.
2. **Smartphone-Based Operations**: Unlike conventional demand-response services, most microtransit requests and payments are made by smartphone apps. Global Positioning Satellites (GPS) technology is used to locate and route passengers in real-time, eliminating the need for extensive local or regional support systems and reducing overhead costs. Microtransit operates similarly to Uber or Lyft but can also accommodate individuals with disabilities and seniors.
3. **Spontaneous Access**: One major advantage of microtransit is the ability for passengers to access the service spontaneously, unlike traditional demand-response transportation, which often requires trips to be scheduled days in advance.

4. **Dedicated Vehicles**: Microtransit services dedicate a specific number of vehicles to meet the anticipated demand within a designated service area. In Pearland's case, six vehicles would be allocated, with estimated response times of 30 minutes or less. This would serve as the primary intracity transit service for Pearland.
5. **Service Boundaries**: The proposed microtransit service would operate within Pearland's city limits. Figure 4.3 shows the recommended service zone.
6. **Funding and Sustainability**: Pearland could apply for the three-year Commuter and Transit Pilot Program to fund microtransit service. After the pilot period, funding would shift to the Federal Transit Administration Section 5307 program, which would underwrite 50 percent of the net operating costs starting in year 4. To qualify for federal funding the service must be shared, so multiple passengers would use it at once.

Cost and Ridership Estimates for Citywide Microtransit:

To develop realistic assumptions regarding costs and ridership, the study relies on zero-emissions vehicles and hybrid wheelchair-accessible vehicles. Administrative costs are not included in the microtransit service costs, as they are already covered under commuter service costs.

1. **Estimated Total Costs**: The primary cost variable is the hourly operating cost. Based on similar services, H-GAC estimates that providing a turnkey private contract operation would cost approximately $90 per service hour (compared to $76 per hour for a similar service in Sugar Land). Startup costs are estimated at $135,000 based on other Texas on-demand services, for technology setup and other expenses. The total estimated operating cost is $1,997,500 based on operating 14 hours on weekdays and 10 hours on Saturdays. Including startup costs, the estimated total is $2,132,500, yielding a net cost of $1,992,500 after subtracting estimated revenues.

2. **Estimated Ridership**: An adjusted model projects 35,000 annual passenger trips, based on conservative estimates from the first year of pilot service, when ridership typically builds gradually.

3. **Estimated Fares**: A $4.00 fare per one-way trip is proposed. This price balances farebox revenue generation with affordability for lower-income residents.

4. **Estimated Farebox Revenues**: With an estimated 35,000 passenger trips annually, the first year's farebox revenue is projected to be $140,000.

5. **Federal Revenues**: Federal revenues in the first year are estimated at 80 percent of net operating cost, or $1,595,000, assuming funding from the CMAQ Commuter and Transit Pilot Program. Using dedicated zero-emissions vehicles is crucial to qualifying for CMAQ funds.

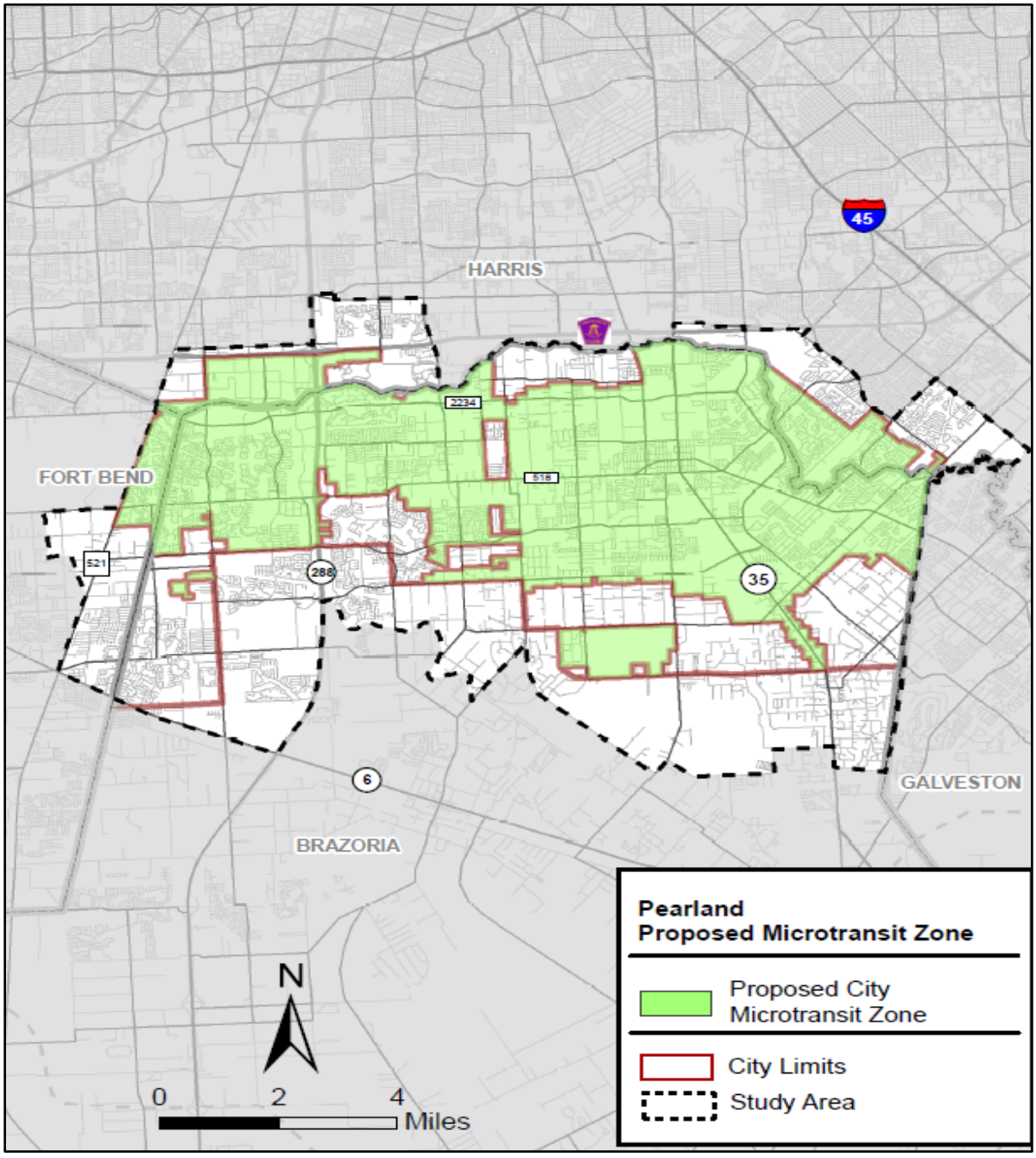
Estimated Local Cost: After accounting for farebox and federal revenues, the local cost for Pearland in year 1 would be $398,550.

Figure 4.2: Pearland On-demand Microtransit Service: Projected Costs, Revenues, and Operating Information

Year	Year 1	Year 2	Year 3	Year 4	Year 5
Yearly Service Days	300	300	300	300	300
Annual Passengers (Unlinked Trips)[11]	35,000	36,750	38,588	38,588	38,588
Annual Vehicle Hours	23,500	23,500	23,500	23,500	23,500
Cost Per Revenue Hour	$90	$90	$90	$99	$99
Operating Expenses [12]	$ 1,997,750	$ 1,997,750	$ 1,997,750	$2,326,500	$2,326,500
One-time Contractor Startup	$135,000				
Total Operating Expenses	$2,132,750	$ 1,997,750	$ 1,997,750	$2,326,500	$2,326,500
Average Fare	$4.00	$4.00	$4.00	$4.00	$4.00
Farebox Revenue (Annual Passengers x Average Fare)	$140,000	$147, 000	$154,430	$154,430	$154,430
Net Operating Expenses	$1,992,750	$1,850,750	$1,843,320	$2,172,070	$2,172,070
CMAQ Funding Levels	80%	80%	80%		
CMAQ Funding Dollars (years 1-3)	$1,595,000	$1,480,600	$1,474,656		
Local/Non CMAQ Funding Level	20% Net	20% Net	20% Net		
Local Funding Dollars (years 1 -3)	$398,550	$370,150	$368,664		
% Federal Funding (years 4-5)				50%[13]	50%
$ Federal Funding (years 4-5)				$1,086,035	$1,086,035
% Local Funding (years 4-5)				50%	50%
$ Local Funding (years 4-5)				$1,086,035	$1,086,035
Total Local Funding (years 4-5)				$1,086,035	$1,086,035

[11] Assumes a 15 percent increase between years 1, 2 and 3.
[12] Assumes a 5 percent increase between years 3 and 4
[13] Assumes 50 percent Federal Transit formula funding starting in year 4

Figure 4.3: Pearland On-Demand Microtransit Zone of Service



SERVICE OPTION 4: PEARLAND ON-DEMAND RIDE-HAILING SERVICE

Ride-hailing is an on-demand service similar to those provided by transportation network companies, such as Uber or Lyft. Unlike microtransit vehicles, ride-hailing vehicles are only used when requested, meaning no vehicles are dedicated solely to transportation services. This allows for maximum flexibility in setting guidelines. However, the use of federal CMAQ funding to offset some costs is not possible with citywide ride-hailing due to its operational characteristics. Federal Transit Administration (FTA) Section 5307 formula funding, covering 50 percent of net cost, could be applied starting in the second service year. This means that during the first year, all operating and administrative costs, net fares, would need to be locally underwritten.

Key Characteristics of Ride-Hailing Service:

- It uses advanced applications, including metadata, to allow for efficient real-time, on-demand scheduling.
- Passengers request rides as needed, typically through a smartphone app.
- Vehicles are not dedicated to transit service but are instead used only on-demand, or as needed.
- The service is highly flexible, with costs determined by allowable trips per month.
- It must be a shared-ride service to accommodate multiple passengers, qualifying it for federal funding.

The number of ride-hailing trips can either be capped per individual or left unlimited based on the service's designed criteria.

Cost Estimates: Cost estimates for Pearland's ride-hailing program are derived from the city of Pflugerville and Kyle, which, with about half the population of Pearland, provided 17,000 trips in 2023.

As Pearland is expected to have double the ridership levels, the estimate infers a proportional increase in both ridership and costs.

Since both microtransit and ride-hailing are intracity services, they share the same service boundaries. Both must offer shared rides to qualify for federal funding.

After the first year, funding can be provided through the FTA Section 5307program, allowing the FTA to cover percent of the net operating cost in year 2 and beyond.

Assumptions Regarding Citywide Ride-Hailing Costs and Services:

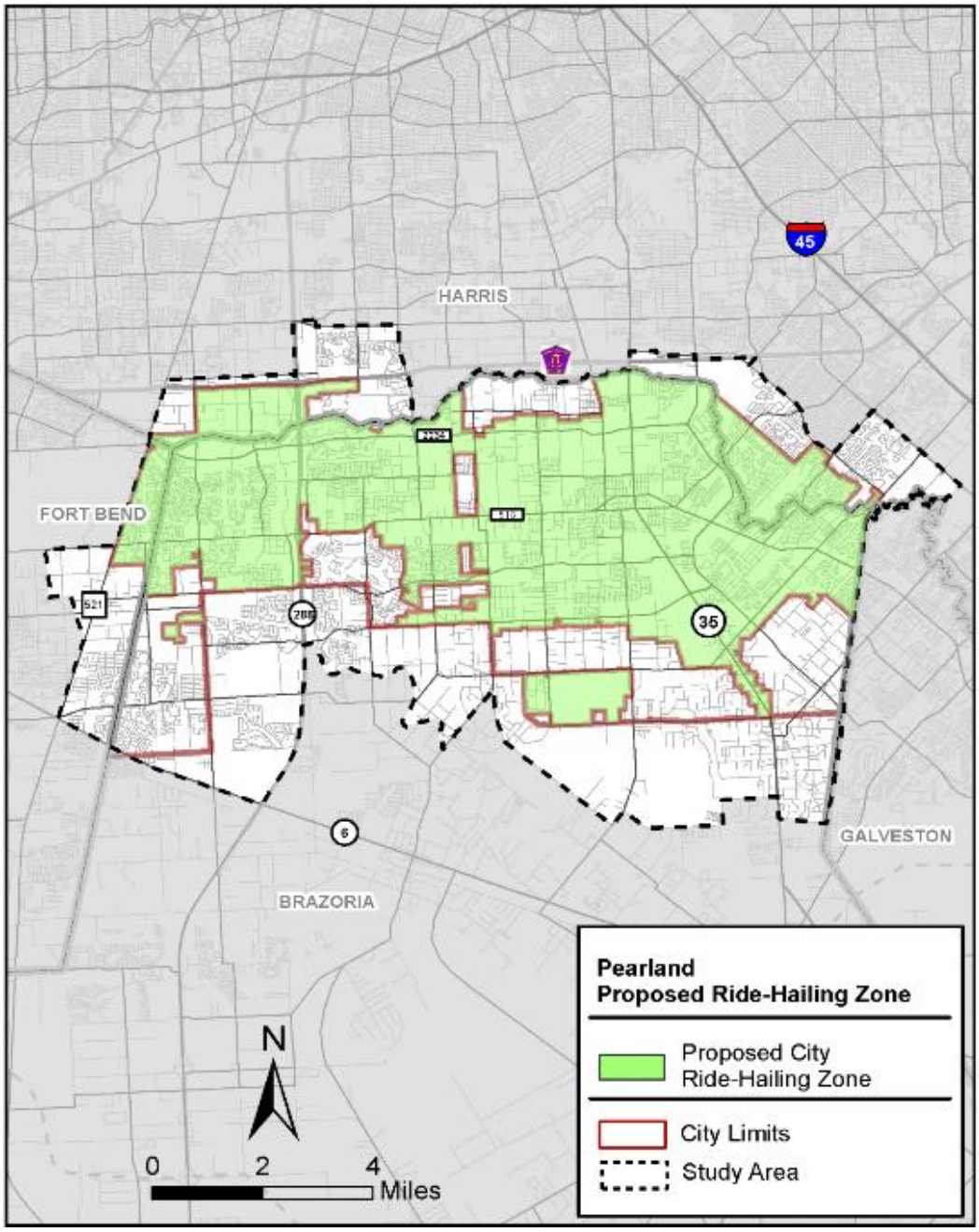
1. **Estimated Total Costs**: Costs are primarily determined on a per-trip basis, The most efficient way to implement the service would be to use a private turnkey operation. H-GAC estimates this would cost approximately $16 per trip. Startup costs are estimated at $135,000, based on similar on-demand services in Texas, namely in Pflugerville. The total estimated operating cost is $520,000, with total operating and startup costs, including administrative expenses, projected at $695,000.
2. **Estimated Ridership**: H-GAC Travel Demand Modeling projects an annual ridership of 35,000 passengers. This conservative estimate reflects the likelihood of lower ridership during the pilot year's initial phase, as ridership typically increases in subsequent years.
3. **Estimated Fares**: The service could charge $4.00 per one-way trip, striking a balance between generating revenue and making the service attractive to potential riders.
4. **Estimated Farebox Revenues**: Based on estimated ridership and fare, farebox revenues and any federal are $140,000 in the first year.
5. **Estimated Local Costs**: Pearland's local cost would equal the total operating costs minus farebox revenues and any federal funding. For the first year, the projected local share is $555,000.

Figure 4.4: Pearland Ride-Hailing Service: Projected Costs, Revenues, and Operating Information

Year	Year 1	Year 2	Year 3	Year 4	Year 5
Yearly Service Days	300	300	300	300	300
Annual Passengers (Unlinked Trips)[14]	35,000	36,750	38,588	38,588	38,588
Total Cost Per Trip	**$16.00**	**$16.00**	**$16.00**	**$17.60**	**$17.60**
Operating Expenses[15]	$560,000	$588,000	$617,408	$679,149	$679,149
One-time Contractor Startup	$135,000				
Total Operating Expenses	$695,000	$588,000	$617,408	$679,149	$679,149
Average Fare	$4.00	$4.00	$4.00	$4.00	$4.00
Farebox Revenue (Annual Passengers x Average Fare)	$140,000	$ 147,000	$154,352	$154,352	$154,352
Net Operating Expenses	**$555,000**	**$441,000**	**$463,056**	**$524,797**	**$524,797**
% Federal Funding (years 2-5)		50%[16]	50%	50%	50%
$ Federal Funding (years 2-5)		$220,500	$231,528	$262,399	$262,399
% Local Funding (years 2-5)		50%	50%	50%	50%
$ Local Funding Year 2-5		$220,500	$231,528	$262,399	$262,399
Total Local Funding Year All Years	**$555,000**	**$220,500**	**$231,528**	**$262,399**	**$262,399**

[14] Assumes a 5 percent increase between years 1, 2 and 3
[15] Assumes a 15 percent increase between years 3 and 4
[16] Assumes 50 percent Federal Transit formula funding starting in year 2

Figure 4.5: Pearland Ride-Hailing Zone of Service



SERVICE OPTIONS NOT INCLUDED

Several transit services were excluded from the listed alternatives for the following reasons: unfavorable public response, insufficient household density to support the service, high service costs, inability to implement within the short-term (zero to five years), the availability of existing on-demand/demand-response technology, prioritization of park-and-ride services, and challenges in accurately estimating short-term demand and cost. The excluded services and reasons for their exclusion are discussed below.

- **Fixed Guideways (Rail and Rapid Bus Transit)**: Due to high expense and long implementation timelines, this is considered a long-term (25+ years) alternative. However, it will require significant funding commitments and planning.
- **Commuter Service to Downtown Houston:** While this route shows strong potential based on commuter travel from Pearland to Downtown Houston, the Texas Medical Center (TMC) has greater ridership potential and can be more easily served. The initial focus should be on the TMC, with future evaluation of a downtown route if TMC service proves successful. In the meantime, the TMC route would allow transfers to Downtown Houston using the METRORail Red Line.
- **Pearland East Commuter Service**: While the idea of a service from Cole's Flea Market is promising, projected ridership is lower and the cost per trip is higher than for Pearland West's Park and Ride. A phased approach is recommended – starting with the Pearland West route and potentially implementing the Pearland East route within five to ten years if successful.
- **Over-the-Road Coaches for Intercity Commuter Service:** These vehicles cost twice as much per hour as large cutaway buses. This is supported by H-GAC Fort Bend Transit's experience with Sugar Land services, which use cutaway buses.
- **Fixed-Route Local Bus Service along Broadway and SH 35**: Low suburban density and unfavorable community feedback exclude this short-term alternative. It may become viable in the next 10-15 years if density and transit need increase.
- **Commuter Service from Houston Park and Ride:** While some Pearland residents might use Houston's Park and Ride, most residents live too far away to make it a practical option.
- **Intercity Non-Commuter Bus Service**: As part of its regional planning efforts, Pearland may need to consider intercity routes, such as those to Angleton, Sugar Land, or Friendswood. H-GAC's upcoming Regional Bus Study will clarify the feasibility of such routes in the medium term.
- **Demand-Response Service**: Although effective, it incurs higher operational costs due to increased overhead. On-demand services, such as Uber or Lyft providing same-day trips, offer greater efficiency and improved customer service/satisfaction.

Administrative/Outreach

Mobility Manager

The development of transit services in Pearland will require a commitment to professional administrative resources that can implement, coordinate, and maintain transit, as well as provide community information on transit services and other mobility options, such as pedestrian and bicycle mobility. Establishing transit services is feasible with administrative support. Once in place, a mobility manager can provide several key benefits, including:

- Overseeing both existing and new intracity transit services
- Securing a park-and-ride site for intercity transit services
- Offering information and guidance on transit and alternative services, such as pedestrian and bicycle options, for residents.
- Preparing applications for CMAQ and other federal grant programs.
- Collaborating with regional transit agencies and partners including H-GAC to develop and coordinate potential new transit services in Pearland. For example, if park-and-ride service to the Texas Medical Center is developed for Pearland West, coordination with METRO would be needed to ensure access to existing METRO bus stops in the medical center.

The Mobility Manager position could be funded for up to 80 percent of the total allocated cost through the FTA's 5310 program (for services supporting seniors and individuals with disabilities). Although community transit service would be available to all residents, it is needed to provide a mechanism to enhance overall mobility in Pearland. To promote mobility, a 20 percent local commitment to the staff position may be provided. This is based on discretionary and competitive funding within the FTA Section 5310 program for the Houston Urbanized Area. Since grant funding is not guaranteed, it is not incorporated into cost estimates. The projected cost of the mobility manager, which would help Pearland implement and oversee transit and related services in a fiscally responsible manner, is estimated at $110,000 per year, including salary and benefits. This allocation is entirely assigned to the commuter service.

PEARLAND REVENUE OPTIONS

Transit services, particularly commuter and on-demand services, offer a broad range of benefits to communities. These services generally rely on a combination of funding sources, as farebox revenue alone is insufficient to cover the full costs of operating public transit. While competitive discretionary grants are one avenue for securing additional funds, the City should also consider more accessible alternatives, including:

1. Congestion Mitigation and Air Quality (CMAQ) Commuter Transit and Pilot Project

Historically, cities and transit agencies within the region have successfully leveraged CMAQ commuter pilot projects to launch park-and-ride services to connect commuters to large employment hubs in Houston. These services have demonstrated a reduction in NOx (nitrous oxide) emissions and total vehicle miles traveled, thus meeting the requirements for commuter service funding through CMAQ.

The program provides funding for the first three years of service, with a local match of 20 percent of net operating cost required. Several regional entities, such as The Woodlands Township, Fort Bend Transit, city of Conroe, Harris County, and the Gulf Coast Transit District, have successfully implemented commuter services through this program. During the pilot period, ridership and fares increased, leading each agency to continue offering the service beyond the initial funding period. As a result, these pilot projects evolved into sustainable, long-term transit solutions for their respective communities and counties.

2. The Urbanized Area Formula Program (Formula – but subject to approval for Pearland service)

The Urbanized Area (UZA) Formula Program (Section 5307) is a Federal Transit Administration program that provides federal funds to support transportation in urbanized areas, which can be used to support the development of transit services. Pearland does not receive any federal operating funds, also known as 5307 formula funds. However, Pearland does not receive any 5307 funds, but it may be possible for Pearland to apply for these funds to implement the transit services proposed in alternatives, such as commuter or on-demand transit service.

In the Houston UZA, the Metropolitan Transit Authority of Harris County (METRO) is the designated recipient of the 5307 formula funds, with other transit agencies including Harris County Transit (serving eastern Harris County) and Fort Bend Transit, also applying annually for their share of these funds. Historically, these 5307 funds have provided critical operating support for transit services in these areas.

Should Pearland decide to move forward with transit implementation, it could apply for 5307 funds to offset some operational costs, especially for the commuter or on-demand services outlined. Pearland would be required to actively engage in the application process to secure approval and funding.

3. Federal Transit Administration's Enhanced Mobility of Seniors & Individuals with Disabilities Program Funding

The city of Pearland currently benefits from Section 5310 funding through Harris County Rides, which supports limited demand response service for up to $36,000 annually through an interlocal agreement with the Gulf Coast Transit District. This funding helps provide transit services for seniors and individuals with disabilities.

The Section 5310 program supports a variety of transit-related activities. For Pearland, one potential opportunity could be to use these funds to hire a Mobility Manager, which would allow the city to share up to 80 percent of the administrative costs associated with managing transit service and improving mobility options for vulnerable populations.

The next call for projects for the 5310 funding in the Houston Urbanized Area is expected in mid-2025, offering an additional opportunity for Pearland to apply and potentially reduce local transit service costs. While this funding is competitive and not guaranteed, it provides a viable avenue for Pearland to explore as it seeks to enhance and expand its transit services.

4. State Transportation Funding

State operating and capital funding is unavailable for transit services in the Houston Urbanized Area, which includes the city of Pearland. This limits the state's direct financial contribution to local transit operations or expansion efforts.

5. Local Funding

Local funding is typically required to support transit services. While various external sources of funding (such as federal or competitive grants) are considered, the city of Pearland will need to make some financial commitment to cover operational expenses or match funding for grants. This may involve setting aside local government resources to ensure continuity of service.

6. Farebox Revenues

Farebox revenues, which are the funds collected directly from passengers using transit services, can help offset a portion of the costs. Fare revenue generally covers only a small portion of operating expenses. Pearland would need to incorporate farebox revenues into a broader funding strategy that includes federal, state (where available), and local contributions.

Despite the absence of state funding, Pearland still has potential revenue sources through federal transit and competitive grants beyond CMAQ. These sources could be leveraged to enhance and sustain its transit services.

Benefits from Transit Services

Transit services offer a variety of community benefits, some of which are quantifiable, while others are more qualitative and more difficult to measure. Commuter transit services, in particular, provide several measurable benefits that are similar to high-capacity transit options such as bus rapid transit and rail. For on-demand services, the benefits are primarily related to increased mobility for individuals with specific transit needs, such as seniors and individuals with disabilities, who would otherwise have limited transit options. While some of the costs for these services can be offset by farebox revenues and federal funding, local costs often remain higher due to the fewer measurable benefits associated with demand-response or on-demand services.

The Pearland West Commuter Service stands out as a financially feasible project with low operating costs (less than $2.25 per trip), making it an attractive and sustainable investment. The measurable benefits of this service are clear and far outweigh the operational costs, making it a highly beneficial investment. These measurable benefits are evaluated based on five quantifiable factors identified for the Pearland West Commuter Service: travel time savings, emissions, safety, farebox revenues, and parking. H-GAC has developed analytical tools to measure these easily quantifiable benefits.

- Using H-GAC's roadway benefit calculation tool, the project calculates travel time saved by passengers using transit instead of driving.
- Emissions benefits are based on the number of riders who, by using transit, are improving air quality by reducing the number of single-occupant vehicles on the road.
- Safety benefits are associated with the reduced number of vehicles and fewer vehicle miles traveled resulting in fewer crashes, injuries, and deaths.
- Farebox revenue projections show that use fares are expected to cover around 50 percent of total operating costs.
- Commuters using the service avoid paying high parking fees at employment destinations, such as the Texas Medical Center or Downtown Houston.

The cost-benefit analysis for the Pearland West Park and Ride conducted over 15 years (between 2026 and 2040) reveals a cost-benefit ratio of 2.49 to 1.0. This ratio is based on the inclusion of federal funding for 80 percent of net operating costs during the first three years provided through the Congestion Mitigation and Air Quality Commuter and Transit Pilot Program, and a 50 percent formula funding for net operating costs for the following 12 years.

While commuter park-and-ride services have quantifiable benefits and a positive cost-benefit ratio, microtransit and ride-hailing services also offer value. However, their benefits are less easily measured and primarily tied to fares and federal assistance. Microtransit services have a lower overall benefit before revenues, as they typically cover around 25 percent of the total service cost. Despite this, they still provide critical mobility options, especially in less densely populated areas.

In summary, both commuter transit and on-demand services offer significant, albeit different, benefits to communities. For Pearland, the Pearland West Commuter Service represents a sustainable, high-impact investment with clear, measurable advantages.

Figure 4.6
Benefits Estimation Method

Options	Travel Time Savings	Emission Benefits	Safety Benefits	Fare Box Income	Parking Benefit
Pearland West Park and Ride	Applied HGAC "Roadway-Transit-Benefits" calculation tool. Included SH288 portion only	Applied HGAC "Transit-Emission-Benefits" calculation tool. Ridership by route is main factor	Applied HGAC "Transit-Safety-Benefits" calculation tool	Daily fare multiplied by annual operation days	Daily parking fee multiplied by annual operation days
Microtransit	Not calculated due to uncertain daily miles traveled.	Not calculated due to uncertain daily miles traveled.	Not calculated due to uncertain daily miles traveled.	Fare per ride multiplied by annual estimated trips	Not calculated
Ride-hailing	Not calculated due to uncertain daily miles traveled.	Not calculated due to uncertain daily miles traveled.	Not calculated due to uncertain daily miles traveled.	Fare per ride multiplied by annual estimated trips	Not calculated

Figure 4.7
Cost-Benefit Analysis Considering Federal Revenues

Pearland Transit Benefit Cost Analysis (2026 - 2040)*										
Options	Travel Time Savings (000)**	Emission Benefits (000)	Safety Benefits (000)	Fare Box Income (000)	Parking Benefits (000)	Total Benefits (000)	O&M Costs (000)	Benefit Cost Ratio	Estimated Federal Revenues (000)	Benefit Cost Ratio (With Fed Help)
Pearland West Park and Ride $200/hr	7,400	1.57	1,848	2,910	4,370	16,530	7,377	2.24	1,822	2.49
Micro Transit $85/hr	-	-	-	1,275	-	1,275	19,403	0.07	15,523	0.87
Ride-hailing $16/trip	-	-	-	1,275	-	1,275	5,100	0.25	2,449	0.73

* Present value discount rate is 7%.

** Fixed 2023 local US dollar.

Reference: https://www.nctr.usf.edu/wp-content/uploads/2015/01/77060-NCTR-NDSU03-508.pdf

SERVICE ALTERNATIVES

The development of the following service alternatives integrates several factors from the study, ensuring a wide range of considerations are addressed when proposing transit solutions for Pearland. These factors include the analysis of prior studies, transit needs, public outreach, service types, and revenue and cost-benefit projections:

1. **Peer and Prior Study Analysis**: Reviews of peer cities and prior studies identified the presence of services such as park-and-ride, on-demand, and demand-response services as relevant and potentially effective models for Pearland.

2. **Transit Need Index**: The Transit Need Index highlights areas in Pearland with significant demand for transit services, particularly for on-demand and demand-response services targeted at individuals with limited mobility. Commuter demand analysis indicates that there is strong potential for park-and-ride services to major employment centers such as The Texas Medical Center and Downtown Houston.

3. **Public Outreach**: Community input plays a vital role in the development of these alternatives, with public outreach providing insights into perceptions of the value of various public transit modes. Stakeholders identified a preference for commuter services and for on-demand services.

4. **Service Modes, Features, and Costs**: Multiple service modes were identified for inclusion in the alternatives, including park-and-ride, microtransit, and demand-response. Each mode offers different features and relative costs. For example, park-and-ride typically incurs higher upfront infrastructure costs, while on-demand services may require higher ongoing operational support.

5. **Revenue Potential**: Revenue projections differ based on the service type. For commuter park-and-ride services, farebox revenues can cover a significant portion of the operating costs, while on-demand services rely more heavily on external funding sources like federal grants and local revenues.

6. **Cost-Benefit Analysis**: A comprehensive cost-benefit analysis was conducted to evaluate the effectiveness of different transit modes. This analysis includes both quantifiable costs (e.g., operational expenses, capital outlay) and less quantifiable benefits (e.g., improved mobility for seniors and individuals with disabilities). The analysis revealed that commuter park-and-ride services offer higher quantifiable benefits due to factors like travel time savings and emissions reductions. In contrast, microtransit and ride-hailing services offer lower measurable benefits but provide crucial mobility support for underserved populations.

These factors have led to the following alternatives to be considered:

Alternative 1 – Existing Service Only

In this alternative, Pearland would continue operating its current transit services without any expansion (the "No Build" option). The focus remains on maintaining the Harris County Rides program, which provides transit services to seniors and individuals with disabilities. The program has been in place since 2012, with some service interruptions, and has focused on providing intracity service for Pearland residents who qualify. No new services or enhancements would be introduced under this option.

The total service cost is $108,000, with a local contribution of up to $36,000 and a maximum ridership of 3,000 passenger trips each year.

Alternative 2 – Existing Service and West Pearland Park-and-Ride for Intercity Services

The second alternative builds upon the existing intracity service provided by Harris County Rides, as outlined in Alternative 1. In addition to continuing this service, it introduces the Pearland West intercity commuter/park-and-ride service, which is considered the most cost-effective option for Pearland. The total service cost for Harris County Rides remains $108,000, with an estimated 80,000 annual passenger trips anticipated by the end of the first year. The local contribution would still be up to $36,000, supporting a maximum ridership of 3,000 annual passenger trips.

The addition of commuter operating costs and a full-time Mobility Manager would increase the total estimated local cost by $110,000, which includes salaries and benefits. This staff position is crucial for overseeing the service contracts, managing customer service with turnkey providers, and coordinating with other transit agencies, including METRO. The Mobility Manager would be dedicated to the park-and-ride service, ensuring effective management whether Alternatives 2, 3 or 4 are chosen.

Funding for the Mobility Manager's role may potentially be supported through the FTA Section 5310 program, but this is not guaranteed, as the funds are awarded competitively within the Houston Urbanized area. The ability to secure funding for this position will depend on the specific applications and priorities during the funding cycles. Overall, this alternative enhances Pearland's transit offerings while maintaining a focus on effective management and coordination.

Alternative 3 – Pearland West Park-and-Ride (Intercity) & Citywide Microtransit (Intracity) Services

Alternative 3 proposes the implementation of a microtransit service within the city of Pearland, in conjunction with the Pearland West intercity commuter/park-and-ride service. This alternative has an estimated total cost of $176,000 in local funding, which includes provisions for a Mobility Manager to oversee the program.

The projected first-year cost for the microtransit services is $594,550, which encompasses $135,000 allocated for advanced technology implementation. One of the key advantages of microtransit is its potential cost-effectiveness compared to ride-hailing services during the initial years. This is primarily because microtransit would qualify for CMAQ funding in the first three years of operation. Ride-hailing services do not meet the necessary air quality reduction standards, and therefore are ineligible for such funding.

By leveraging CMAQ funds, microtransit can provide a more affordable option for Pearland residents, particularly in the early phases of service establishment. Overall, this alternative enhances both intercity and intracity transit options, positioning Pearland for improved connectivity and sustainability in its transportation offerings.

Alternative 4 – Pearland West Park-and Ride-Service (Intercity) & Citywide Ride-Hailing (Intracity) Services

Alternative 4 focuses on implementing a ride-hailing service within the city of Pearland, alongside the Pearland West intercity commuter/park-and-ride service. This combination is regarded as the most cost-constrained and effective solution for the city's transit needs.

The projected startup cost for the ride-hailing service is estimated at $135,000, which would be allocated to a private turnkey provider responsible for setting up advanced technology for a citywide service tailored specifically to Pearland. This approach aims to enhance the flexibility and responsiveness of transit options available to residents, ensuring that ride-hailing can effectively meet varying transportation demands.

By integrating ride-hailing with the commuter park-and-ride service, Pearland can create a more comprehensive transit network that offers convenient and efficient travel options for both local and intercity commuters.

Section V – Recommended Alternative and Additional Recommendations

The Pearland Transit Needs Assessment and Feasibility Study recommends Alternative 4: Implement Intracity Ride-Hailing and Commuter Park-and-Ride Service to the Texas Medical Center

This option is both practical and cost-effective for initiating suburban intracity transit service, including intercity connections from Pearland West to the Texas Medical Center.

Several considerations influenced the selection of Alternative 4:

- **Turnkey Service**: It allows for a seamless integration of intracity and intercity transit services by using a Transportation Networking Company for intracity needs and a private transit provider for intercity connections.
- **Meeting Transit Needs**: This alternative addresses a significant level of both intercity and intracity transportation demands.
- **Pilot Flexibility**: As a pilot service, it offers the flexibility to adjust operations based on real-time conditions and community feedback.
- **Cost Control**: Ride-hailing services provide greater control over costs, as transportation is only provided when requested, reducing unnecessary expenditures.
- **Cost Efficiency Over Time**: While the initial costs for Alternative 4 may be higher than microtransit in the first year, it benefits from lower service costs in subsequent years. Federal funding can underwrite 50 percent of the net costs beginning in year 2, leading to significant long-term savings.

The two intracity transit options analyzed—microtransit and ride-hailing—offer similar passenger experiences. In both cases, a passenger requests a ride, and the service responds by providing an intracity ride from the origin to the destination. However, the operational delivery differs:

- **Microtransit**: relies on dedicated vehicles, which may remain idle during certain periods. Its costs are fixed and based on total service hours rather than ridership.
- **Ride-Hailing**: operates on a demand-driven model, providing rides only when there is a request. This results in flexible costs that adjust according to actual usage.

By implementing Alternative 4, Pearland can establish an effective and responsive transit system that meets the community's needs while ensuring fiscal responsibility.

Section VI. Conclusion and Next Steps

The Pearland Transit Assessment and Feasibility Study has examined the viability of intracity and intercity transit service for the city of Pearland, with a particular focus on the emerging role of on-demand services. These services have gained traction in recent years, providing a flexible option that meets local travel needs, especially for those with limited access to traditional transit. Additionally, commuter transit options along SH 288 have been under consideration for many years. Key challenges include identifying suitable locations for park-and-ride facilities, establishing a feasible operating model, and ensuring effective system coordination, all of which are critical for success. Despite the complexities, there remains substantial travel demand, indicating the potential viability of commuter services even in the post-COVID context.

The capacity of Pearland to develop, implement, and manage new transit services is vital for its success. Engaging a transit professional is essential for navigating the intricacies of service planning and execution. However, challenges related to commitment and oversight will need to be addressed, as transit conditions can change rapidly. The next steps involve the Pearland City Council reviewing the study's recommendations and determining how to proceed. Key considerations for this decision-making process include public sentiment regarding transit services, insights from previous transportation reports, comparative analysis with peer cities, demographic trends affecting transit needs, and the evaluation of proposed service alternatives. Based on the comprehensive analysis, If the city moves forward with the study recommendations, Alternative 4 is identified as the optimal choice for Pearland, likely integrating both on-demand and commuter services to effectively address local and regional transit needs.