Executive Summary

ES-1. Introduction

AECOM was tasked by North Central Texas Council of Governments (NCTCOG) to develop a transit planning study for the Southern Dallas County communities of Cedar Hill, DeSoto, Duncanville, Lancaster and the Southern Dallas Inland Port (Inland Port) area. Therefore, our study area for this project includes those four communities and the Inland Port area. The study focuses on the strategic implementation of transit and mobility services in a part of the North Texas region that has limited access to existing transit services. As a part of the study, this report includes recommendations for transit and mobility services over the next 20 years. The services are proposed to be implemented over three phases including Phase 1 (Years 1-5), Phase 2 (Years 6-10) and Phase 3 (Years 11-20).

Transit Existing Conditions and Needs Assessment

As shown in Figure ES-1, the study area includes the four city boundaries of Cedar Hill, DeSoto, Duncanville, and Lancaster, and the Inland Port boundary containing the cities of Hutchins and Wilmer. The cities are not currently member cities of Dallas Area Rapid Transit (DART), however STAR Transit provides limited fixed route and demand response coverage to the cities of DeSoto and Lancaster with connections to the DART Blue Line light rail service at the UNT Dallas Station. Additionally, the Inland Port boundary extends into the DART service area in the city of Dallas and has fixed route and demand response service.

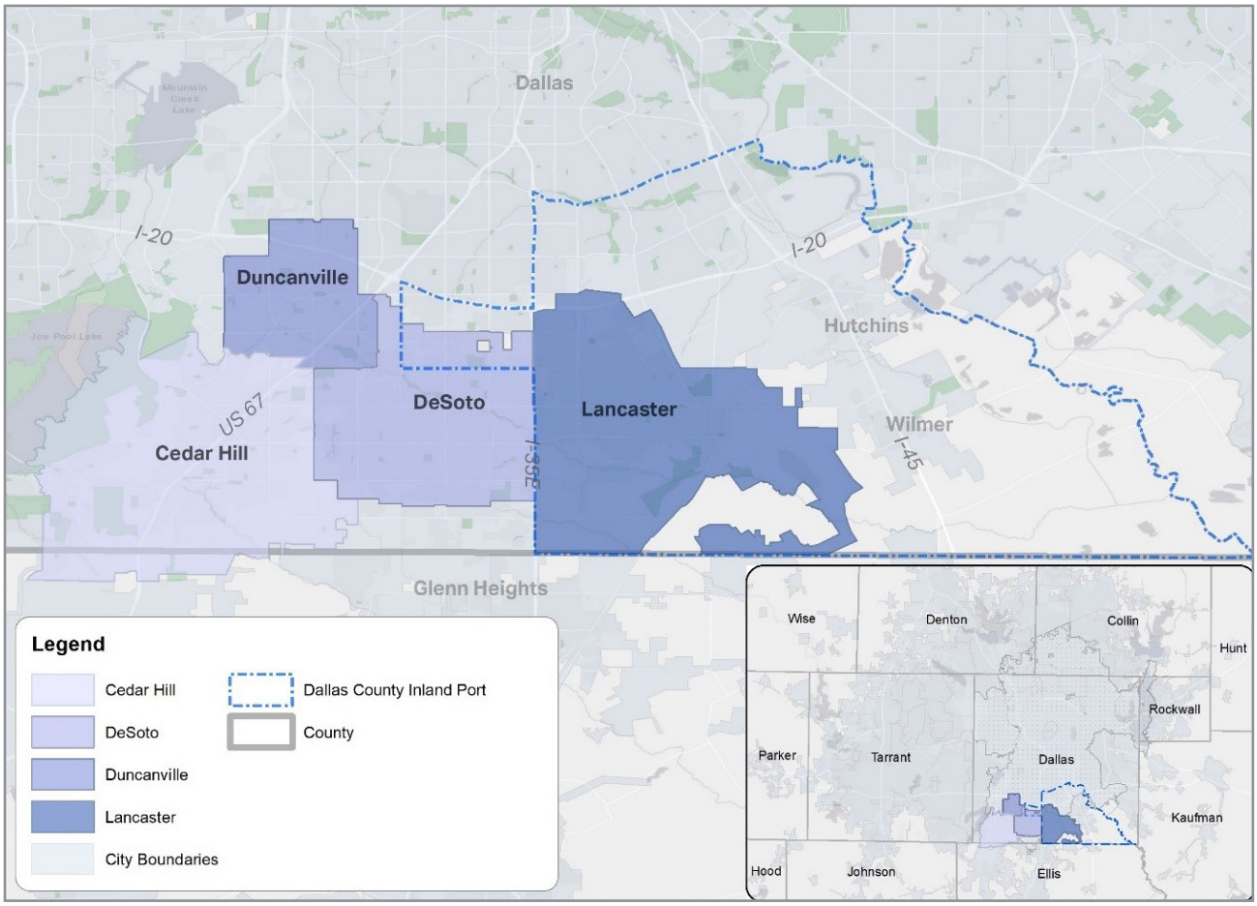


Figure ES-1: **Southern Dallas County Study Area** *Source: AECOM, 2020*

Data Analysis

A market analysis and a review of previous planning studies were completed for the study to provide detailed insight into the study area cities' demographic makeup, land use patterns, commuting patterns, and into potential transit needs for the study area.

Key Findings:

- The Document Review provided a qualitative lens touching on a variety of mobility topics in which to view planning efforts within the study area.
  - Overall findings identify that each city faces challenges related to land use regarding the potential for catalyst areas
  - Public transit consideration is found in nearly all of the reviewed comprehensive plans
  - East-west travel throughout the study area remains challenging
- Population, employment and transit dependent populations generally are found adjacent to or nearby the major arterials (I-20, US-67, I-35E) in the study area
- Overall a high number of trips are interlocal
- High numbers of trips with destinations in the study area originate within Dallas County, generally north of the study area
- Fixed routes for STAR Transit provide east-west travel to commercial and retail destinations
- Low population density within the study area may best be suited for on-demand transit services

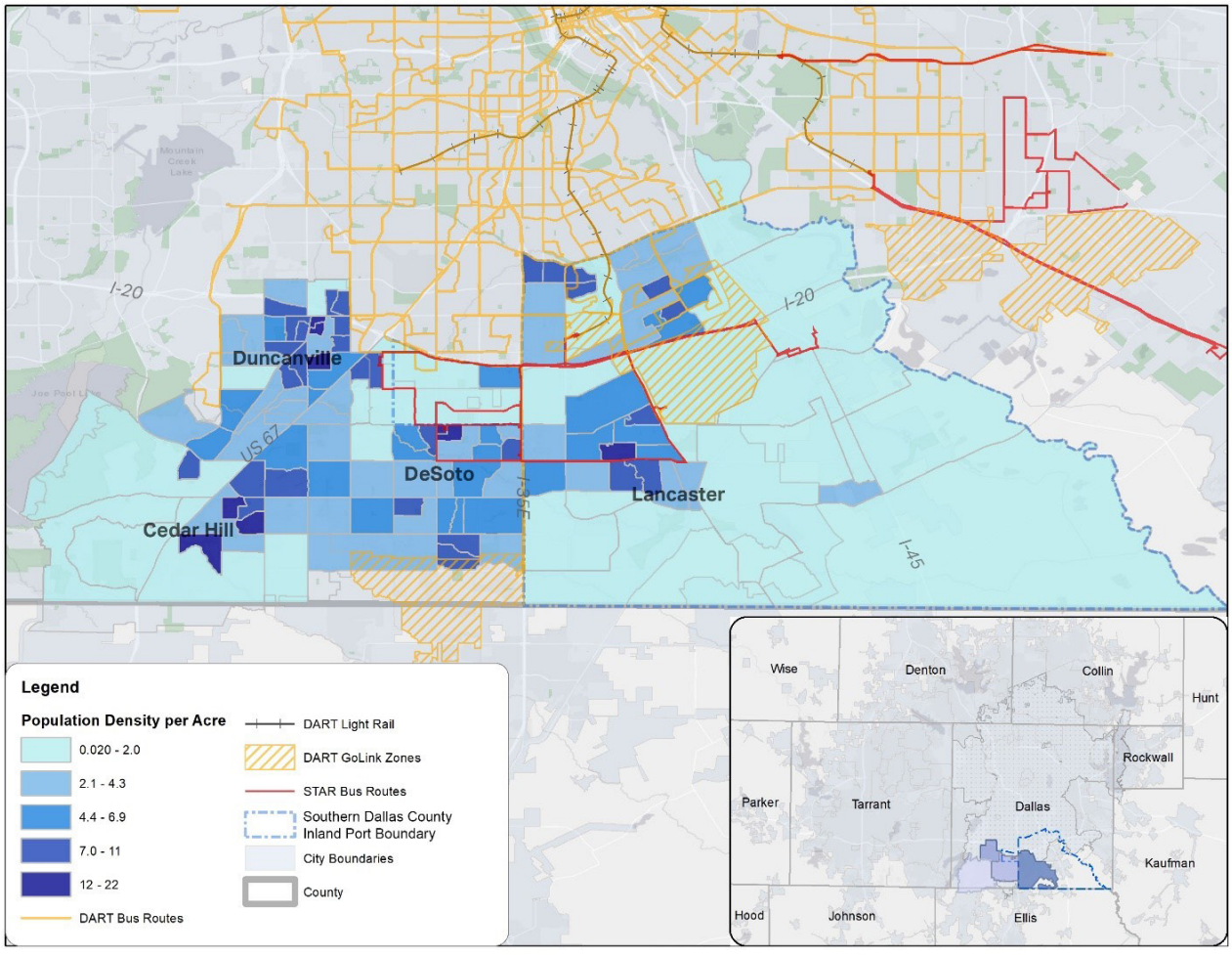


Figure ES-2: **Study Area Population Density** *Source: USCB ACS 2018 5-year estimates, NCTCOG, DART, STAR Transit*

Comprehensive Goods Movement Needs Assessment

Inland Port Market Analysis

Job Growth

Along with its nearly 93,000 residents, as of 2019, the Inland Port study area includes 33,900 total jobs, more than 15,000 of which are in the industrial and manufacturing sectors. In the past two decades, the area has seen a net increase of 15,300 new jobs – including more than 14,000 added since 2010.

The Inland Port is characterized by significant industrial, manufacturing, warehouse, distribution, and fulfilment center employment. Key major employers include Amazon, Taylor Communications, Walmart, FedEx, Proctor & Gamble, Kohl's, Home Depot, United Natural Foods, Shippers Warehouse, and Brass-craft.

Industry Trends

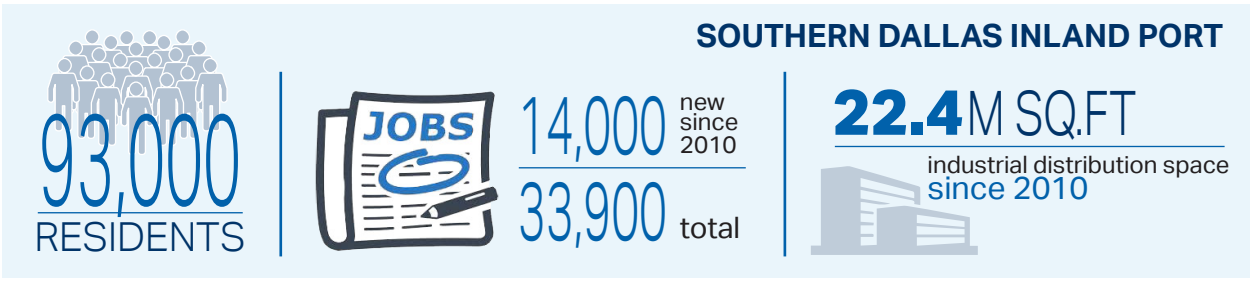
Of all industrial sector employment in the Inland Port, manufacturing, wholesale, transportation and warehousing, and e-commerce (i.e. Amazon fulfillment centers) make up close to half – or 46% - of total jobs. Manufacturing accounts for almost a quarter (23%) of all port employment, with Transportation and Warehousing accounting for 12% of all jobs.

Land Use

While the Dallas Central Appraisal District (DCAD) land use data indicates only 800 acres of land in the Inland Port area currently designated as "vacant industrial," there is significant land currently designated as agricultural – 26,500 acres, or about one-third of the total Inland Port land area. AECOM's GIS analysis indicates 26,625 of total vacant industrial and agricultural parcels greater than five acres.

Market and Real Estate

In addition to job growth, the Inland Port has seen rapid growth in industrial development and occupied square footage. Across the port, 70% of all Rentable Building Area (RBA) square footage (25 million square feet) was constructed between 2010 and 2019, and 90% of all square footage within the Inland Port area has been developed in the past two decades. Nearly all of the new industrial construction since 2010 has been distribution space – 22.4 of the total 25 million square feet of new construction between 2010 and 2019 was industrial distribution space.



Southern Dallas County Freight Analysis

In the past decade, the Inland Port has seen significant growth in industrial and manufacturing development, with corresponding impacts on job and real estate markets.

- 17% of all Dallas-Fort Worth CSA job growth between 2010 and 2019 occurred in the Inland Port. As of 2019, the Inland Port supported an estimated 33,900 total jobs, with roughly 15,200 in manufacturing, transportation and warehousing, wholesale, and e-commerce sectors.
- The Inland Port supports a total of 53 million square feet of industrial space and has added 35 million square feet of new industrial space since 2010, and 21.6 million square feet since 2015 alone – alongside a 3% reduction in vacancy. 90% of all industrial space in the Inland Port has been built after 2000, with 70% of all industrial buildings constructed in the last decade.
- Over the past ten years, the Inland Port study area has been adding industrial square footage at a higher rate than job growth.
- As of 2019, there are an additional 530 acres of proposed industrial development opportunities in the pipeline across the Inland Port, particularly alongside of I-45.
- COVID-19 has dramatically accelerated the shift to e-commerce, with US on-line sales growing from about 10% to 16% of total retail sales within a few months; this has also made clear the dependence of US consumers on foreign manufacturing locations. As a result, more manufacturing activity is expected to return to the US and Mexico in coming years, and locations such as the Inland Port would expect to compete for this activity.

Public Involvement

In coordination with the NCTCOG, public and stakeholder engagement was integral in developing a comprehensive and strategic public transportation plan for Southern Dallas County and the Best Southwest Partnership (BSWP) cities. This engagement and feedback, along with data research, helped formulate the specific goals and objectives that guided the study implementation plan. Due to COVID-19 constraints, public involvement flexibly adapted to these conditions and conducted outreach through virtual meetings and online participation. An overview of the public engagement activities is summarized in **Table ES-1**.

Project Advisory Committee (PAC)

The engagement with stakeholders was inclusive and collaborative, engaging a diverse audience including the four BSWP cities, the Inland Port TMA, DART, STAR Transit, railroad companies, and local freight associations. To guide the study and gather feedback from stakeholders, a Project Advisory Committee (PAC) was established, made up of technical staff, city and county staff, chambers, Inland Port representatives, railroads, transit operators, and other stakeholders.

The 45-member PAC met through live, virtual meetings at three milestones throughout the planning process: July 8, 2020, December 15, 2020, and April 28, 2021.

Public Meetings

Three public meetings were held during the study: September 24, 2020, February 4, 2021, and May 6, 2021. The live, online public meetings also had phone access to ensure equitable access for participation. Meetings were interactive with polling questions and opportunity to chat and verbally ask questions.

Online Public Survey

The online public survey was administered in December 2020 and January 2021 and received 240 total completions from residents and commuters across Southern Dallas County, which provided input that guided the development of the implementation plan.

Comments received from the PAC and public focused on the following:

- Regional transit connections to the Blue Line, Red Line and Red Bird Mall
- Transit impacts on traffic
- Analysis and modeling of data/funding options
- How to pay for transit service
- Service for seniors and vulnerable communities
- Focus service on workforce and education trips
- Supported routes that linked the cities and region
- Discussed need for last mile connections
- Transit

Meeting	Date	Attendees/ Responses
Project Advisory Committee Meeting	July 2020	26
Public Meeting	September 2020	65
Project Advisory Committee Meeting	December 2020	35
Online Survey	December 2020	240
Public Meeting	February 2021	74
Meeting with DeSoto	March 2021	n/a
Meeting with Cedar Hill	April 2021	n/a
Meeting with Duncanville	April 2021	n/a
Meeting with Lancaster	April 2021	n/a
Project Advisory Committee Meeting	April 2021	39
Public Meeting	May 2021	50

Table ES-1: **Public Outreach Overview**

ES-2. Scenario Development

Effective transit for the study area is not a one size fits all solution as transit markets throughout the area are inherently variable. The project team created a 'menu of options' to provide feasible service types for the various markets identified in the existing conditions analysis. Viable transit service delivery options were established by reviewing 'service type indicators', which include:

- population and employment density,
- transit need populations,
- adjacent land uses,
- existing roadway geometry, and
- connectivity to existing DART and STAR Transit services

A robust transit scenario analysis was performed on route and microtransit zone options. Both quantitative and qualitative methods were used to rank and prioritize each proposed service. As shown in **Figure ES-3**, a final preferred alternative was developed based on overall scores, near-term feasibility and the benefits to the communities.

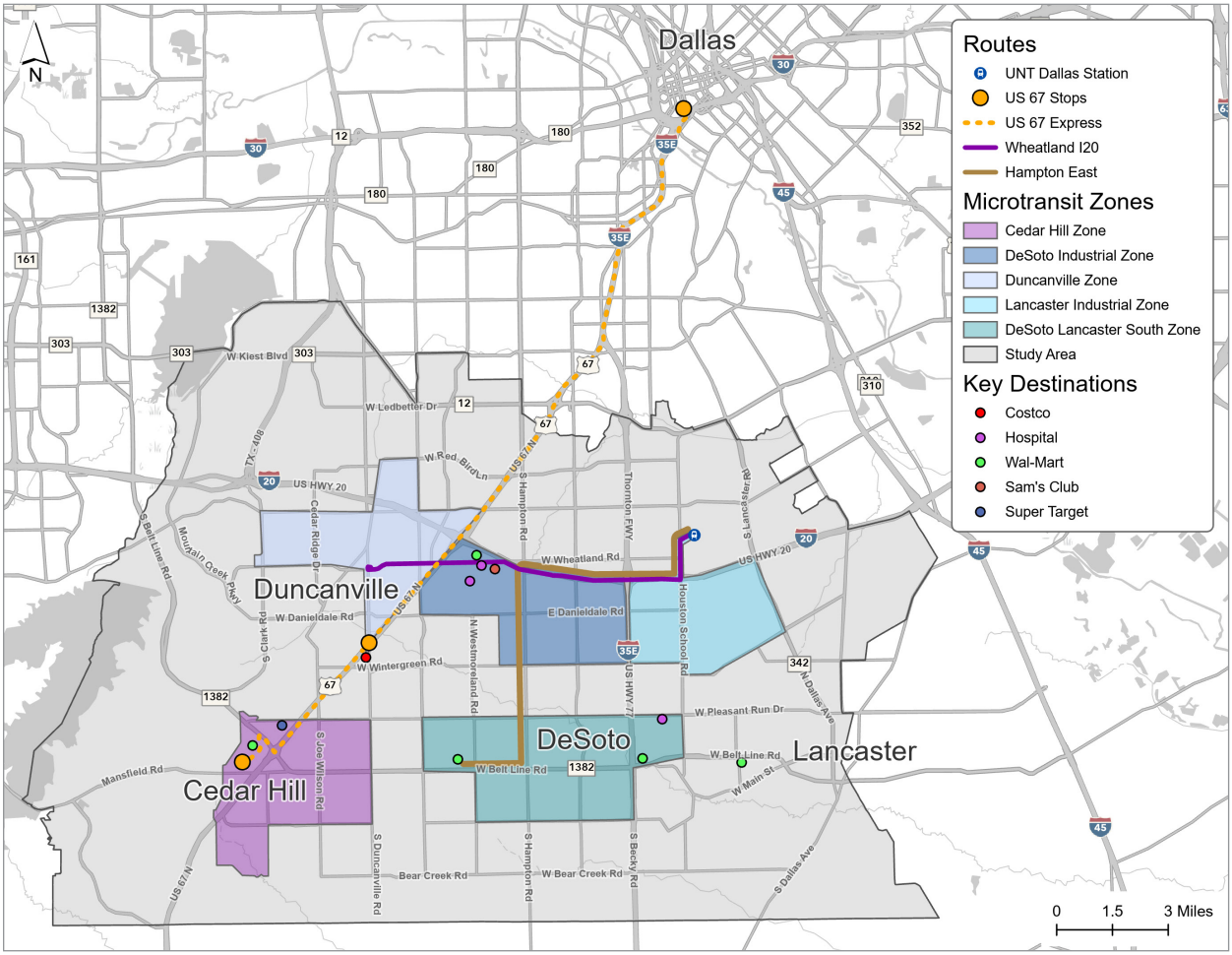


Figure ES-3: **Southern Dallas County Recommended Alternative** *Source: ATG*

Phased Implementation

The transit recommendations for this plan will begin with a strong core network of routes and microtransit zones that are a result of the technical analyses, prioritization process and public and staff input. This approach will allow for a phased, equitable, and sustainable implementation of transit service in the study area. This will allow the Cities and NCTCOG to evaluate service after Phase 1 and use valuable data to inform and finalize Phase 2 recommendations.

Phase 1 (1-5 Years)

The final recommendations of the prioritization process represent the first phase the implementation process for the Southern Dallas County Transit Plan.

Phase 1 will build the foundation of transit service in the area. The goal of this phase is to provide transit service that connects directly to regional transit nodes from each of the four cities. In addition, microtransit zones are proposed in each city to provide local circulation and lifeline service for vulnerable communities such as seniors.

Phase 2 (5-10 Years)

Phase 2 focuses on reinvesting in the core service of Phase 1 and expanding coverage through the addition of a new fixed route and microtransit zone. Phase 2 recommendations should be reevaluated prior to implementation, using data from Phase 1 service to understand how the community is using the new transit service. The following metrics should be evaluated to inform and prioritize Phase 2 recommendations: ridership, travel patterns, cost, and on-time performance.

Phase 3 (11 – 20 Years)

Phase 3 is a long-range service plan that includes targeted zones for future transit service between years 11 and 20 of the plan. The goal of Phase 3 is to further improve the system by extending service to new growth markets including planned passenger rail stations in Cedar Hill and Duncanville. In addition, Phase 3 includes new transit service to future employment growth in the Inland Port area in the cities of Lancaster and DeSoto.

ES-3. Financial Plan

Based on the financial analysis the estimated operations cost for the recommended transit service would be $1.29M for Phase 1 and $2.12M for Phase 2.

The 10-year financial plan presents these costs alongside typically available revenue sources and identifies additional revenue needed to fund the project. A variety of non-traditional revenue options (e.g. value capture, fees, taxes) were assessed to determine their potential for generating additional revenue for transportation and infrastructure projects.

Table ES-2 presents a 10-year financial plan for the recommended Phase 1 and Phase 2 transit services. It is assumed that Phase 1 capital improvements and service costs would start in 2023. Capital improvements for Phase 2 could occur in 2026 with additional service costs starting in 2027. All costs and revenues include a 3% annual escalation compared to the 2021 estimates described in Sections 3.1 and 3.2 and are rounded to the nearest $1,000 (YOE).

It is anticipated that Federal revenues could support approximately 50% of annual costs.

Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Existing Service Costs	$(139)	$(143)	$-	$-	$-	$-	$-	$-	$-	$-
Infrastructure Costs	$-	$-	$(58)	$-	$-	$(56)	$-	$-	$-	$-
New Service Costs	$-	$-	$(1,229)	$(1,266)	$(1,304)	$(1,343)	$(2,121)	$(2,184)	$(2,250)	$(2,317)
Total Cost of Service	**$(139)**	**$(143)**	**$(1,287)**	**$(1,266)**	**$(1,304)**	**$(1,398)**	**$(2,121)**	**$(2,184)**	**$(2,250)**	**$(2,317)**
Federal Revenue [1]	$-	$-	$661	$633	$652	$716	$1,060	$1,092	$1,125	$1,159
Advertising Revenue [2]	$-	$-	$5	$11	$11	$12	$12	$12	$13	$13
Transportation Dev. Credits [3]	$-	$-	$9	$-	$-	$9	$-	$-	$-	$-
Cedar Hill Local Share	$-	$-	$100	$100	$103	$107	$132	$136	$140	$145
DeSoto Existing Budget [4]	$139	$143	$147	$152	$156	$161	$166	$171	$176	$181
DeSoto Additional Share	$-	$-	$46	$46	$47	$50	$104	$107	$110	$114
Duncanville Local Share	$-	$-	$159	$160	$165	$170	$241	$248	$256	$263
Lancaster Local Share	$-	$-	$159	$164	$169	$174	$405	$417	$430	$443
Total Revenue	**$139**	**$143**	**$1,287**	**$1,266**	**$1,304**	**$1,398**	**$2,121**	**$2,184**	**$2,250**	**$2,317**

Table ES-2: **10-Year Financial Plan** (Thousands $)

[1] *Assumes 80% federal match for capital and 50% match for service costs*
[2] *Assumes $500 ad sales per month less 20% marketing and maintenance, x 6 months in 2023 and x 12 months thereafter*
[3] *Pending Confirmation of available amounts, assumes 20% of Federal share*
[4] *Assumes city of DeSoto's current budget for existing transit services would be reallocated for proposed services*

ES-4. Freight and Goods Movement Plan

The Inland Port has seen rapid and significant growth - gaining jobs at a faster rate than that of Dallas County, the Dallas-Fort Worth Metro Area, and the US. Over the past decade, 17% of all job growth in the Dallas-Fort Worth Metro Area occurred in the Inland Port.

If the historic pace of growth continues, the Inland Port activity is poised to more than double over the next 10 years, with the potential to see more than 100 million square feet of new industrial development.

Infrastructure Recommendations

Analysis of existing truck traffic over the past five years shows a handful of key Inland Port intersections are approaching thresholds where capacity concerns would become apparent. Experience suggests that intersections where more than 10-15% of all existing traffic comes from trucks, begin to warrant significant increases in congestion, and drive improvements to support growing truck volumes.

Roads and intersections currently fielding maximum truck traffic must be sized to deal with growing demand for the movement of goods and workers in and out of the area.

Broadly, recommendations for Inland Port road infrastructure are intended to ensure that the area is prepared to accommodate continued growth in truck volumes.

Side street improvements will be particularly important in areas where planned developments are already in the pipeline. The types of infrastructure projects to ensure the Inland Port remains competitive, and estimated costs,[1] include:

Focus Area	Details	Est. Cost	Priority
Local Roads	Tactical improvements to aging, outdated local roads near warehousing/distribution centers	$120-200 per linear foot	Near-Term
Stoplights / Signal Timing	Signal timing in response to changing truck volumes along primary arterials (i.e. ITS)	$600,000 per full inter-section	Medium-Term
Interstate Interchanges	New and updated interchanges and reevaluation of the condition, status and capacity of frontage roads on either side	$3-4 million for full interchange (including exits, bridges, signals)	Long-Term

Table ES-3: **Future Inland Port Focus Areas** *Source: CoStar, AECOM*

ES-5. Implementation Plan

This section discusses the steps that cities should take to implement the recommendations of the plan and the sequence in which they need to be done. Since implementation dates have not been selected, this section generally describes key tasks through years and phases of the project.

[1] *Cost estimates provided by AECOM. Estimates are for materials only and do not include anticipated labor costs*

Table ES-4 presents a summary of the key implementation milestones and a suggested schedule for implementation. The schedule is set up to provide detailed plans for the first five years and more general recommendations for outer years of the planning horizon. The schedule is flexible and can be implemented starting at a later date.

Time Period	Implementation Milestones	
Year 1 – August 2021-November 2021: Contracting and System Start-up	• Designate a staff representative from each city to coordinate transit planning • Develop a transit steering committee for the four cities to coordinate planning effort • Present Plan for adoption to city councils • Meet with potential bus operations contractors • Engage businesses for funding partnerships through public private partnerships • Coordinate funding for plan between cities and NCTCOG • Maintain existing STAR Transit service until new services begin • Set system start-up date and schedule	• Establish fare program for the service • Cities and bus contractor enter into an agreement • Develop Capital Plan • Procure bus stop amenities – stops, benches, and shelters • Initiate marketing campaign to promote new service. • Cities coordinate outreach to the public about service and implementation date • Road test all routes • Begin bus stop placement • Coordinate service with Inland Port TMA service • Begin service
Year 2 – 2022 – Implementation and Monitoring Service	• Develop method for collecting feedback from clients – customer comments should be documented by contractor for analysis by the cities • Assess microtransit zone ridership activity to determine if boundaries should be updated • Update service based on development of new transit generators including high density residential, large shopping centers, and new employers. Assess changes to fixed route service with relation to ADA and paratransit requirements	• If service changes are needed, prepare Title VI review to ensure that the level and quality of fixed-route and demand-response services are provided in a non-discriminatory manner • Update and establish regular procedures for maintaining system goals, objectives, and strategies based on first six months of service • Track service data for service standards • Begin to plan a mobility hub plan based ridership activity
Year 3 – 2023	• Conduct on-board counts and rider survey. Travel patterns and utilization by passengers should be established by then	• Assess service for potential service improvements or changes for implementation
Year 4 – 2024	• Continue to monitor service • Make adjustments to routes based on	demand including updates to frequency, service hours, routing and zones
Year 5 – 2025	• Assess Phase 2 implementation based on needs and budget	• Assess financial plan and funding opportunities to implement Phase 2
Years 6-10	• Continue to monitor service and make adjustments as needed • Coordinate implementation with service contractor	• Develop a schedule for implementation of Phase 2 • Develop a marketing plan • Implement Phase 2 recommendations • Market new service
Years 11-20	• Continue to monitor service and make adjustments as needed • Assess growth and development in the four cities and need for new services • Assess the expansion of high capacity transit in the study area	• If regional rail is extended to area, begin developing service plan to connect into stations. This can include new microtransit zones or fixed routes that feed into the rail service

Table-ES-4: **Key Implementation Milestones**