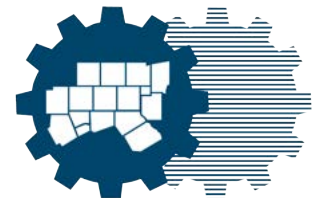


Scenario Concepts Development Process

presented to
SAG

presented by

Cambridge Systematics
Connetics Transportation Group
Kimley-Horn
Marlene Connor Associates
K Strategies



**North Central Texas
Council of Governments**



January 28, 2021

Agenda

- Team and Study Background Review (Scott Boone, CS)
- Scenario Development (Jim Baker, CTG)
 - » Baseline Assumptions
 - » Service Components
 - » Scenarios
 - » Discussion
- Funding Strategies (Brad Lonberger, KHA)
 - » Municipal Typologies
 - » Funding Mechanisms
 - » Discussion
- Next Steps (Scott Boone, CS)



Team Introductions

Cambridge Systematics

Scott Boone & Hannah Santiago



Kimley-Horn

Brad Lonberger



CTG

Jim Baker



Marlene Connor Associates

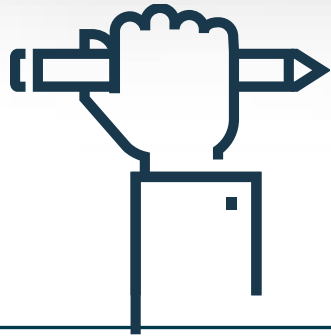
Marlene Connor



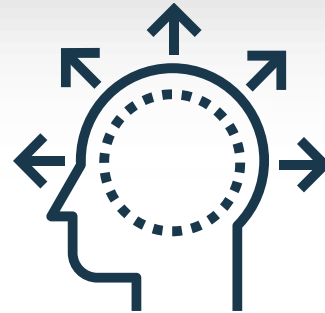
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Study Purpose

Identify, analyze, prioritize and develop a comprehensive approach to planning and implementing transit services outside of transit authority services areas.



Implement Strategic and Near-Term Strategies



Review Transportation Options



Identify Funding Options



– Advisory Board

Helps guides the study by developing the project goals, objectives, defines the project outcomes and provides technical advice; while supporting and encouraging participation in the community.

Study Background

The Tarrant County Transit Study will be built from previous studies conducted over the last several years.



Study Background

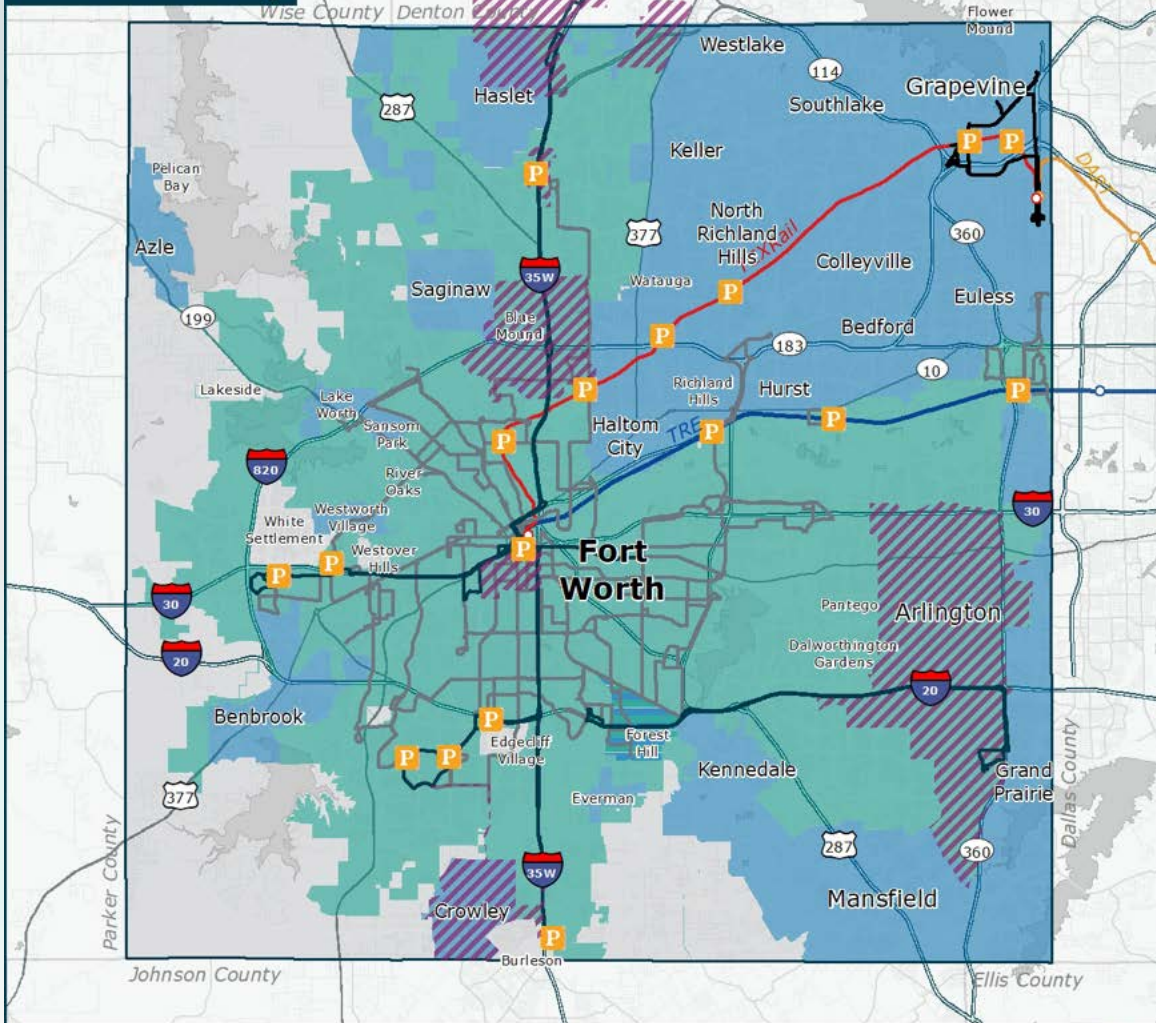


Geographic Focus	NCTCOG Region	NCTCOG Region	Tarrant County (outside Trinity Metro service Area)
User Focus	All Users	Vulnerable Users	All Users
Travel Types	Car, High Intensity Bus, Commuter Rail	Bus, Demand Response, and Paratransit	Bus and Demand Response
Vision	Long Range	Short-Medium Range	Short-Medium Range

SCENARIO ASSUMPTIONS



Tarrant County



Fixed Route Service

- Local Buses
- Express Buses
- Grapevine Shuttles
- TEXRail
- Trinity Railway Express
- P** Park and Ride

On-Demand Services

- /// On-Demand Services

Demand-Response Services

- Pre-Qualified Demand-Response Service Areas
- Paratransit Services Complementary to Fixed-Route Services
- Paratransit and Pre-Qualified Demand-Response Services
- No Demand-Response Services

Area of Focus:

- Non-Trinity Metro Service Area



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Baseline Budget Target

Upper Bound

Trinity Metro
O&M Cost per Capita
\$25.59

Lower Bound

Arlington Via
O&M Cost per Capita
\$5.48

*Adjusted based on
density factors. Costs in
2021\$.*



Total Tarrant
County Unserved
Population &
Employment
1,200,000



Target Annual
Budget
\$18.5 M
Annual per
Pop+Emp
\$15.54

*Average of upper and
lower bounds. Costs
in 2021\$.*

Scenario Development

- **Local Priorities** (served by local fixed-route, circulators, on-demand modes)
 - » Population / Employment Density
 - » Transportation Disadvantaged Communities
- **Regional Priorities** (served by regional & commuter express modes)
 - » Employment Density
 - » Key Activity Centers
 - » Regional Trip Flows



LOCAL SERVICE



Local Services Needs Approach

Categorize transit service needs potential based on:



Population and employment densities



Equity population (minority population and low-income household) densities

Local Services Needs Approach

Density Indicators (per acre)

	Low	Med	High
Population	2	8	16
Employment	2	4	8

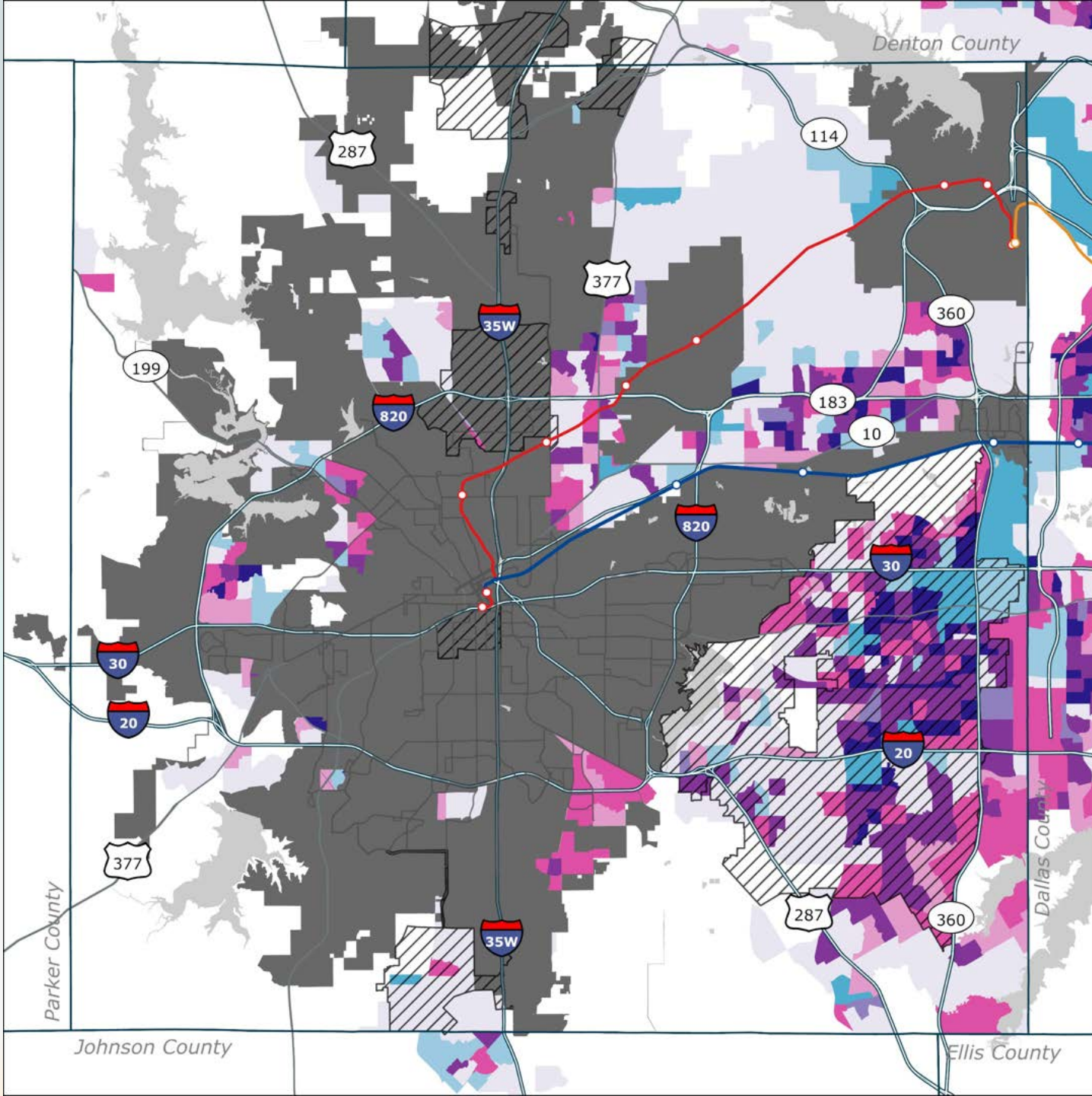
- Trinity Metro ZipZone population densities range from 3.5 to 4.3 per acre
- Trinity Metro ZipZone employment densities range from 1.0 to 18.2 (New Southside) per acre
- 2020 Arlington Via population density = 7.2 and employment density = 4.4 per acre

Local Services Needs Approach

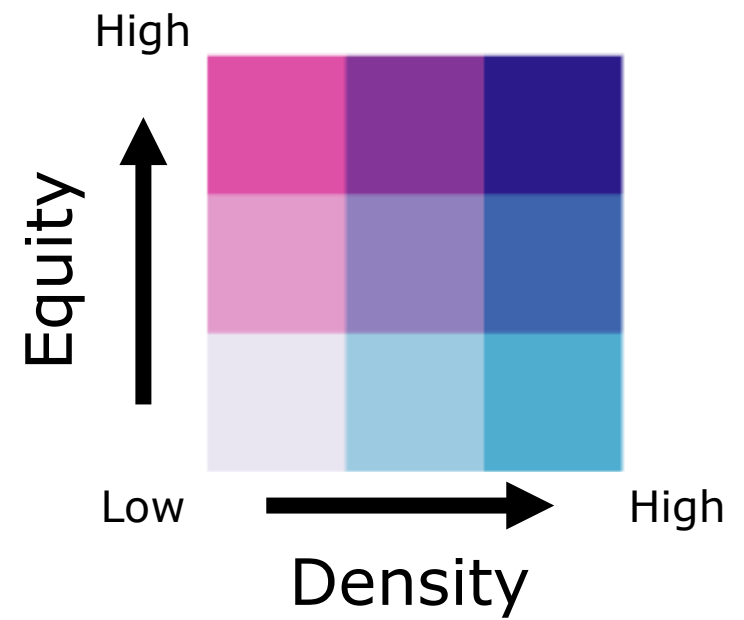
Equity Population Indicators (per acre)



	Low	Med	High
Minority	1.12	1.68	2.24
Low Income	0.14	0.21	0.28

- Low thresholds identified in table are average minority and low-income densities for Tarrant County
- High threshold assumed to be double Tarrant County average



Composite Needs Assessment



-  Existing MOD Zones
-  Existing Service Area

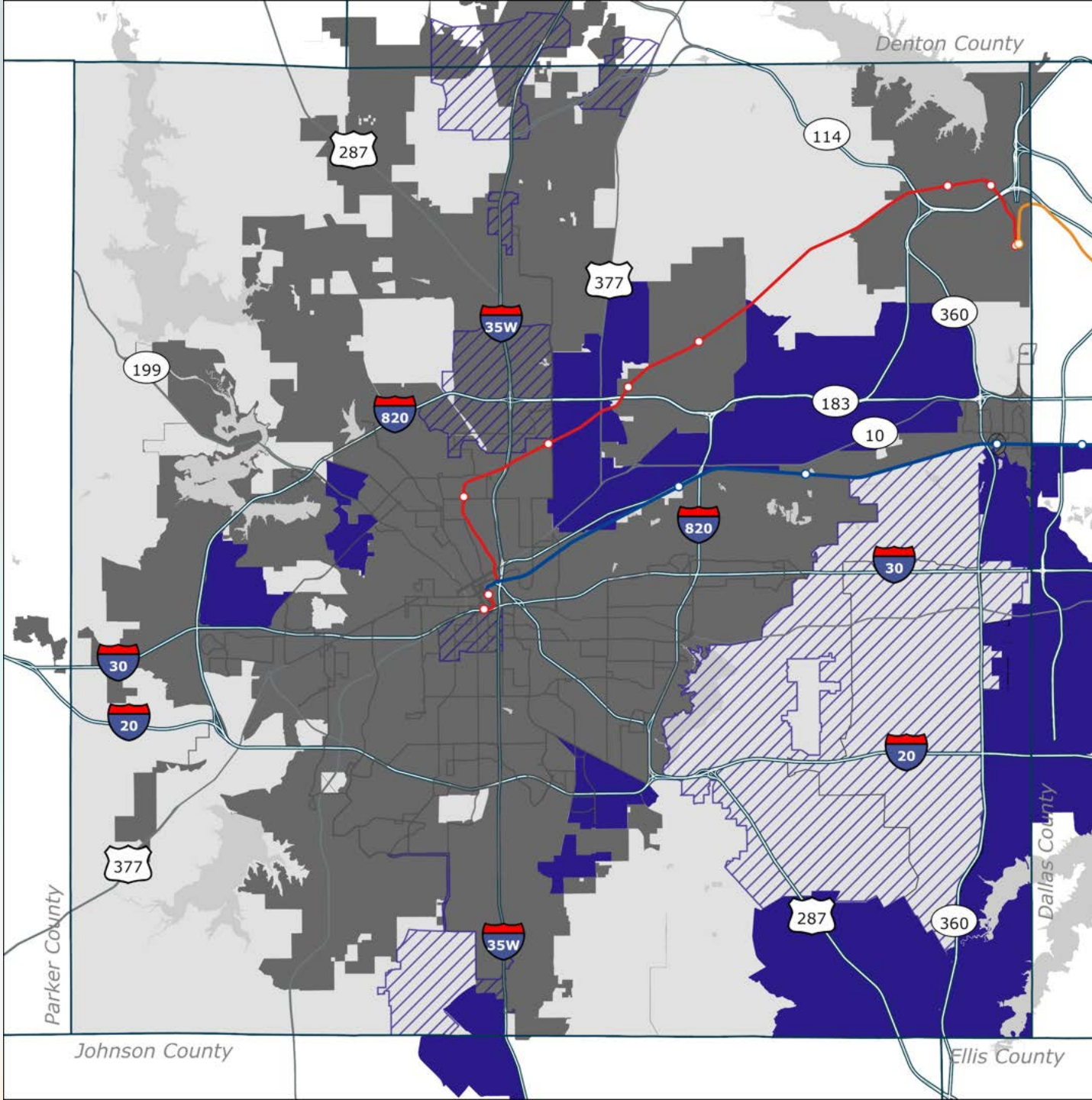
High Service Needs

- Bedford
- Burleson
- Euless
- Everman
- Forest Hill
- Grand Prairie
- Haltom City
- Hurst
- Mansfield
- Richland Hills
- River Oaks
- Sansom Park
- Watauga
- White Settlement

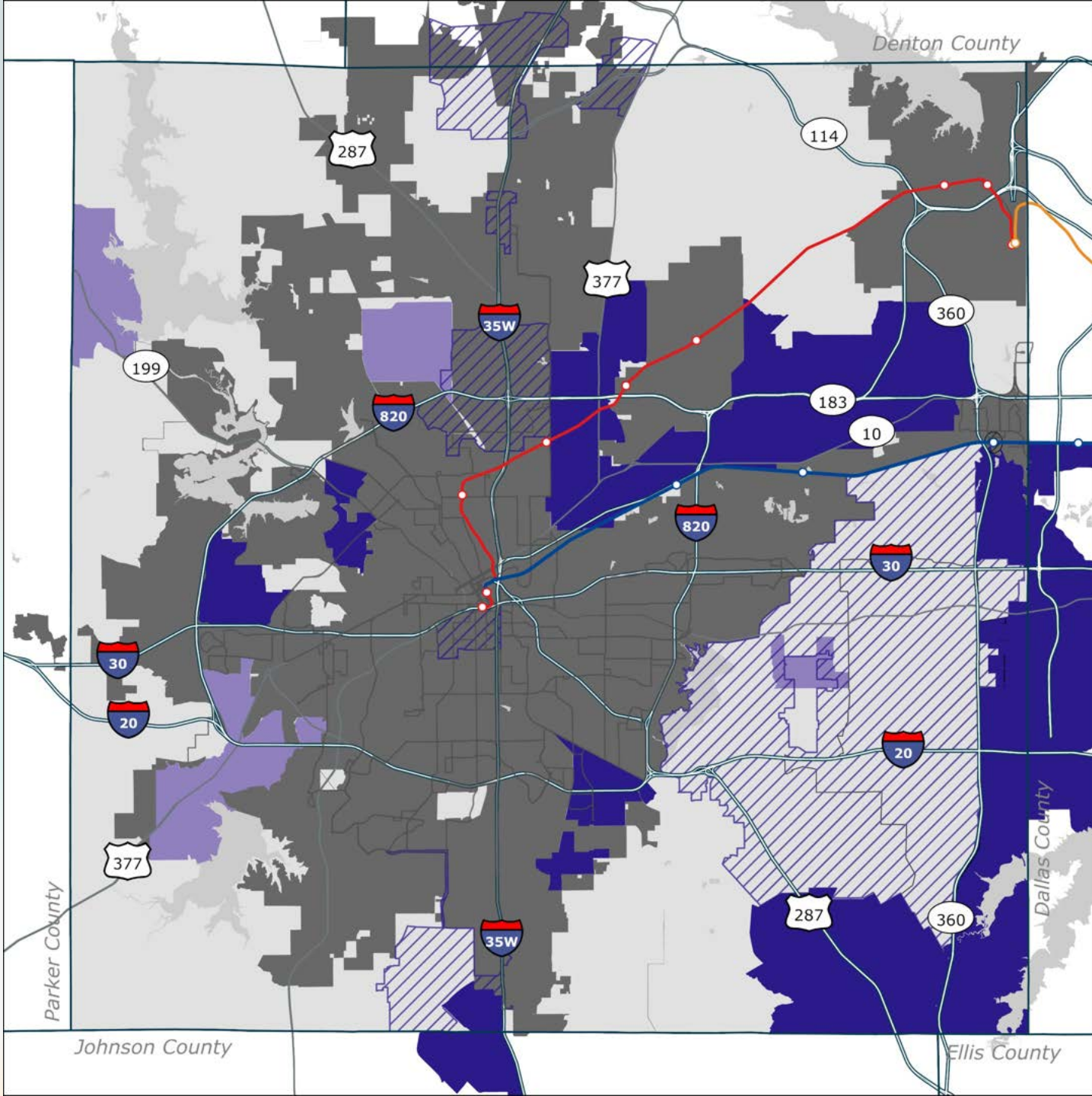
 Existing MOD Zones

 Existing Svc. Area

 Does Not Meet Threshold



High + Medium Service Needs



HIGH NEEDS

- Bedford
- Burleson
- Euless
- Everman
- Forest Hill
- Grand Prairie
- Haltom City
- Hurst
- Mansfield
- Richland Hills
- River Oaks
- Sansom Park
- Watauga
- White Settlement

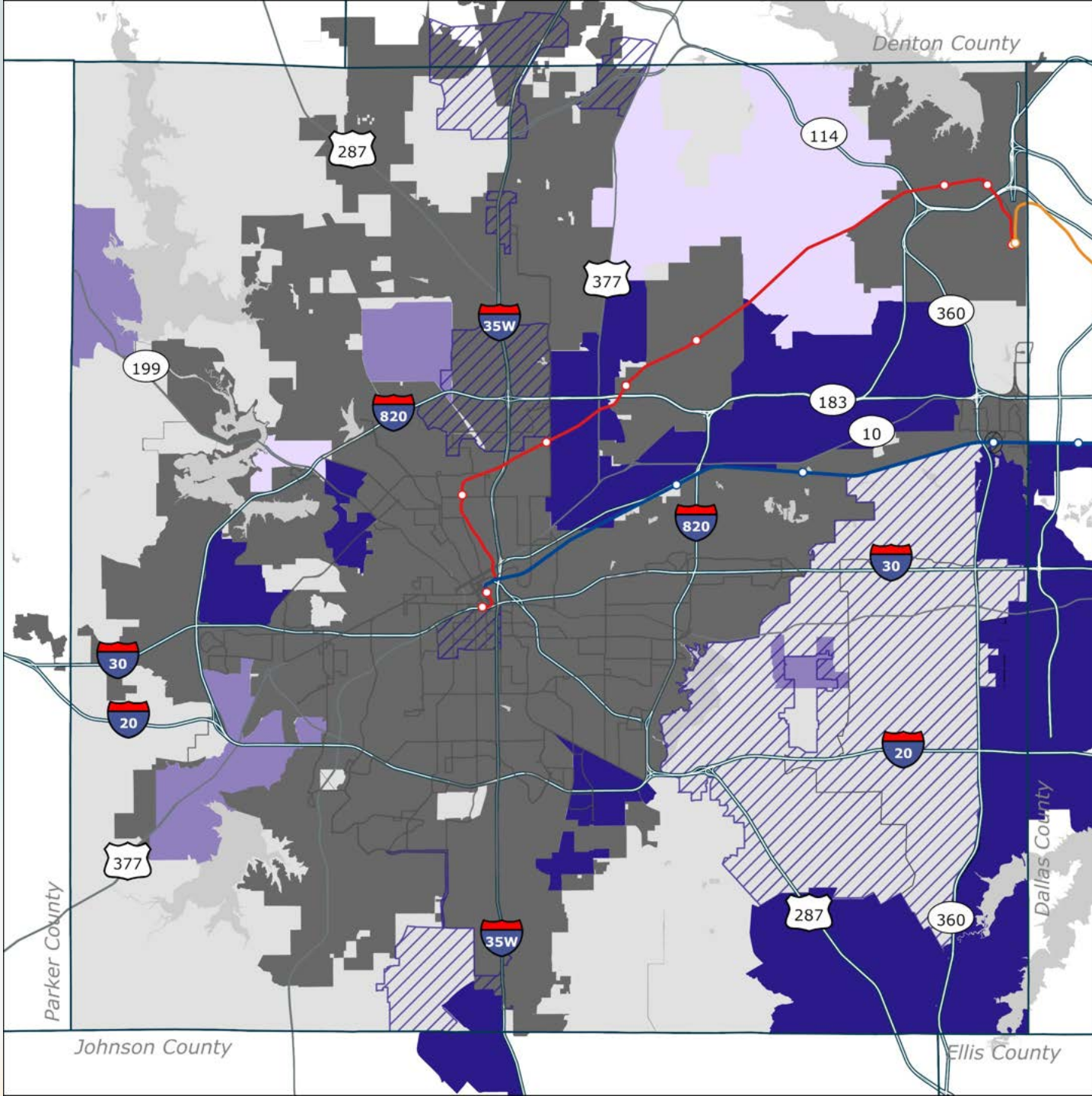
MEDIUM NEEDS

- Azle
- Benbrook
- Pantego
- Saginaw

 Existing MOD Zones

 Existing Svc. Area

 Does Not Meet Threshold



High + Medium + Low Service Needs

HIGH NEEDS

- Bedford
- Burleson
- Euless
- Everman
- Forest Hill
- Grand Prairie
- Haltom City
- Hurst
- Mansfield
- Richland Hills
- River Oaks
- Sansom Park
- Watauga
- White Settlement

MEDIUM NEEDS

- Azle
- Benbrook
- Pantego
- Saginaw

LOW NEEDS

- Colleyville
- Keller
- Lake Worth
- Southlake

 Existing MOD Zones

 Existing Svc. Area

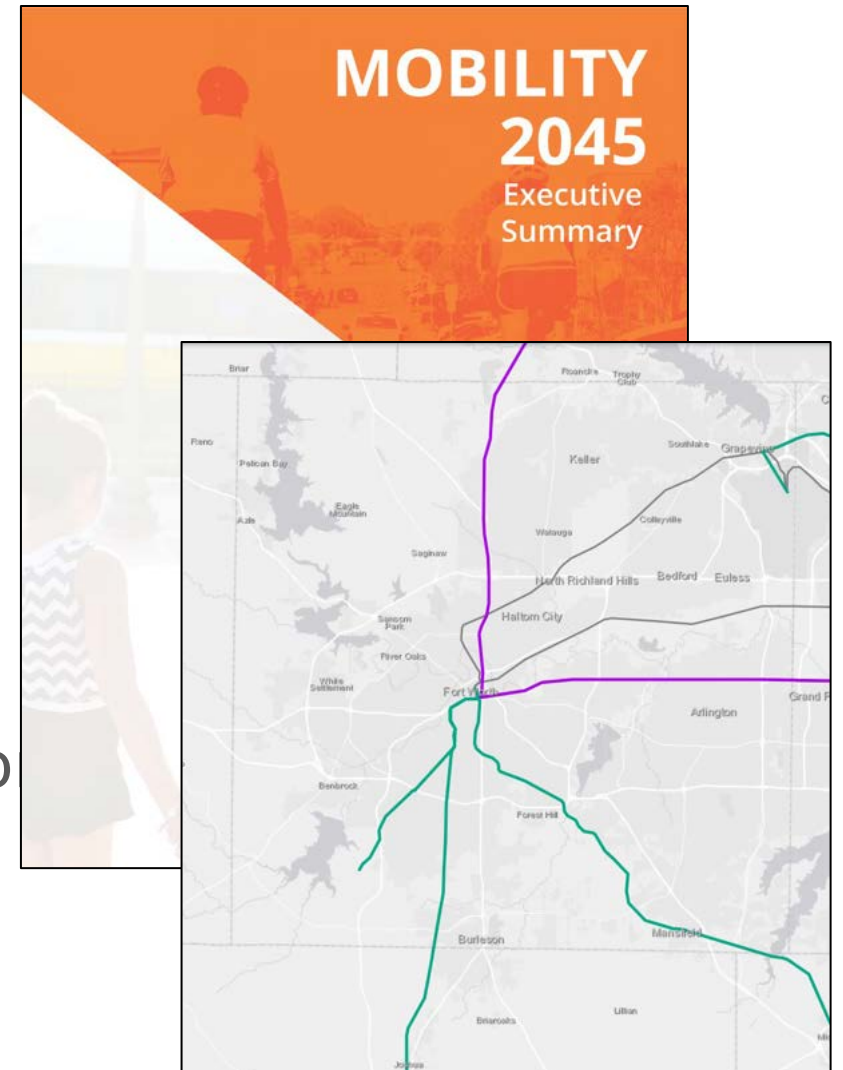
 Does Not Meet Threshold

REGIONAL SERVICE



Regional Service Needs

- Mobility 2045 Rail Corridors
 - Mansfield to Fort Worth
 - Southwest TexRail
 - Cleburne Line to Fort Worth
- Mobility 2045 High Intensity Bus Corridor
 - IH30 from Fort Worth to Dallas
 - IH35W from Fort Worth to Denton



Regional Service Needs

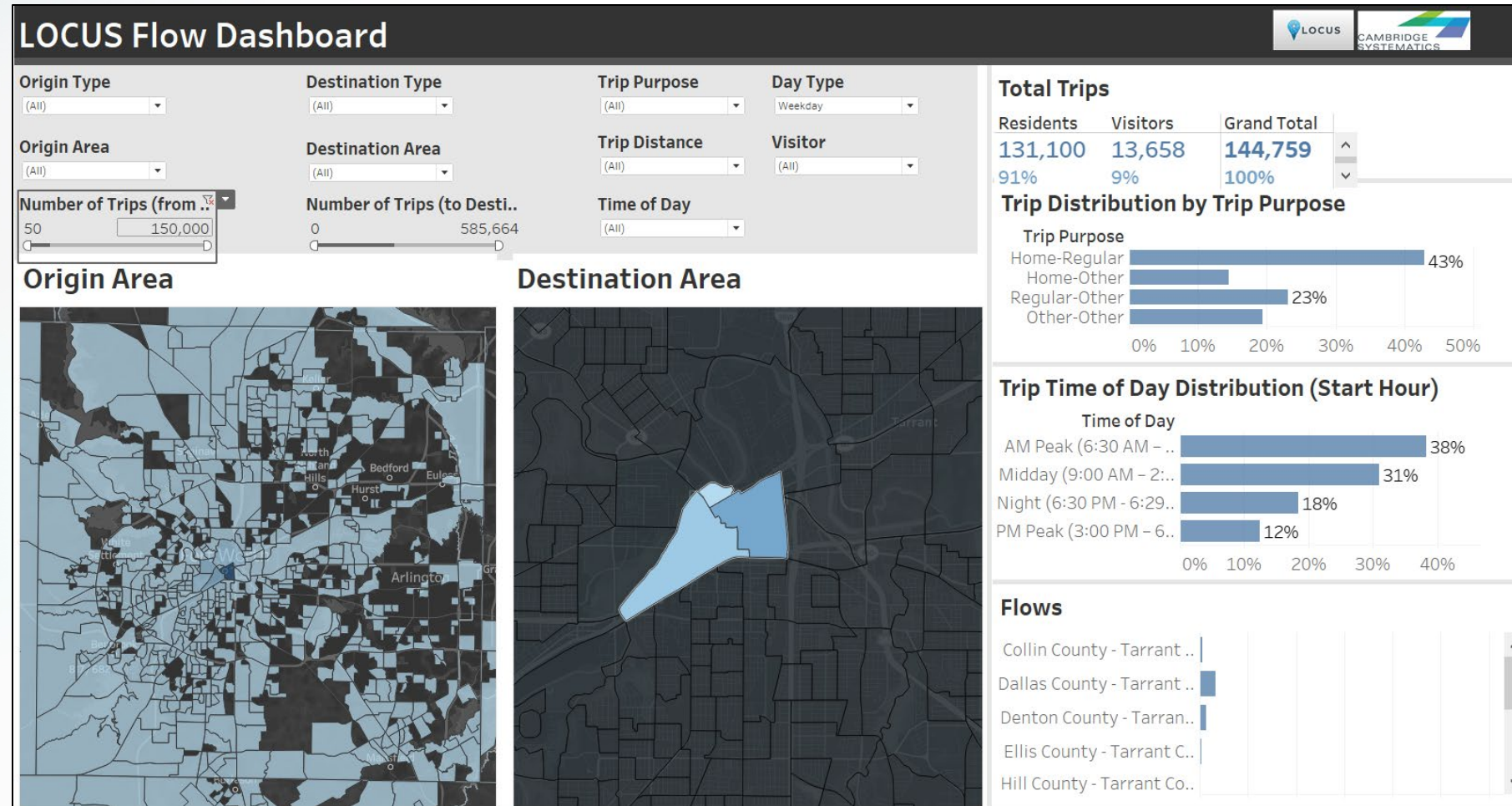
- Downtown Fort Worth – 46,800 jobs
- Centreport – 48,900 jobs
- Central Arlington – 36,900 jobs
- DFW Airport – 55,000 jobs
- Grapevine – 30,000 jobs

Jobs estimates from Remix



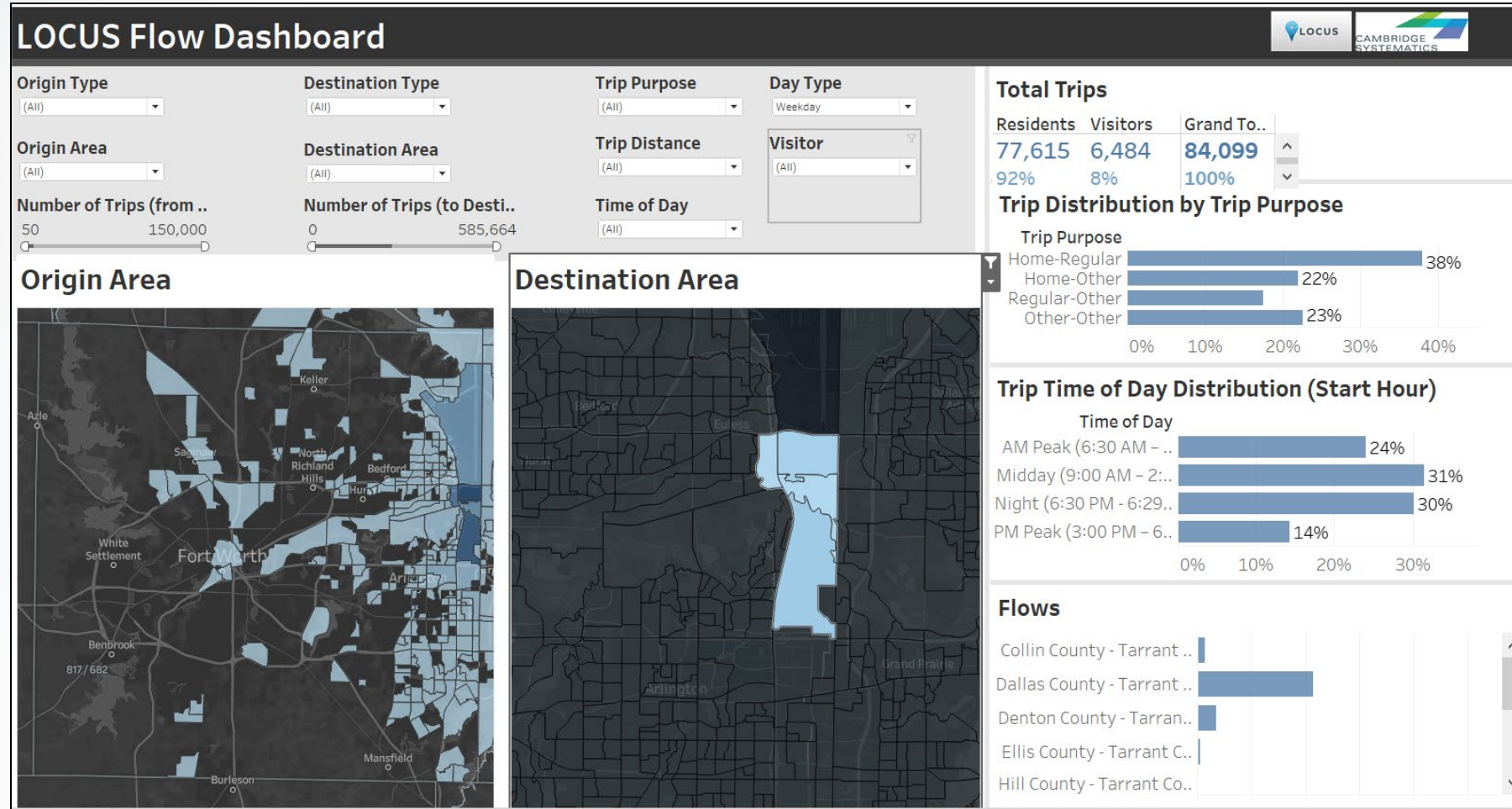
Trip Flows to Downtown Fort Worth

- 46,800 jobs
- 47,000 commute trips (LEHD)
- 144,800 total trips (Locus)
- 123,700 external trips (Locus)
- About 82,600 from Tarrant County (67%)



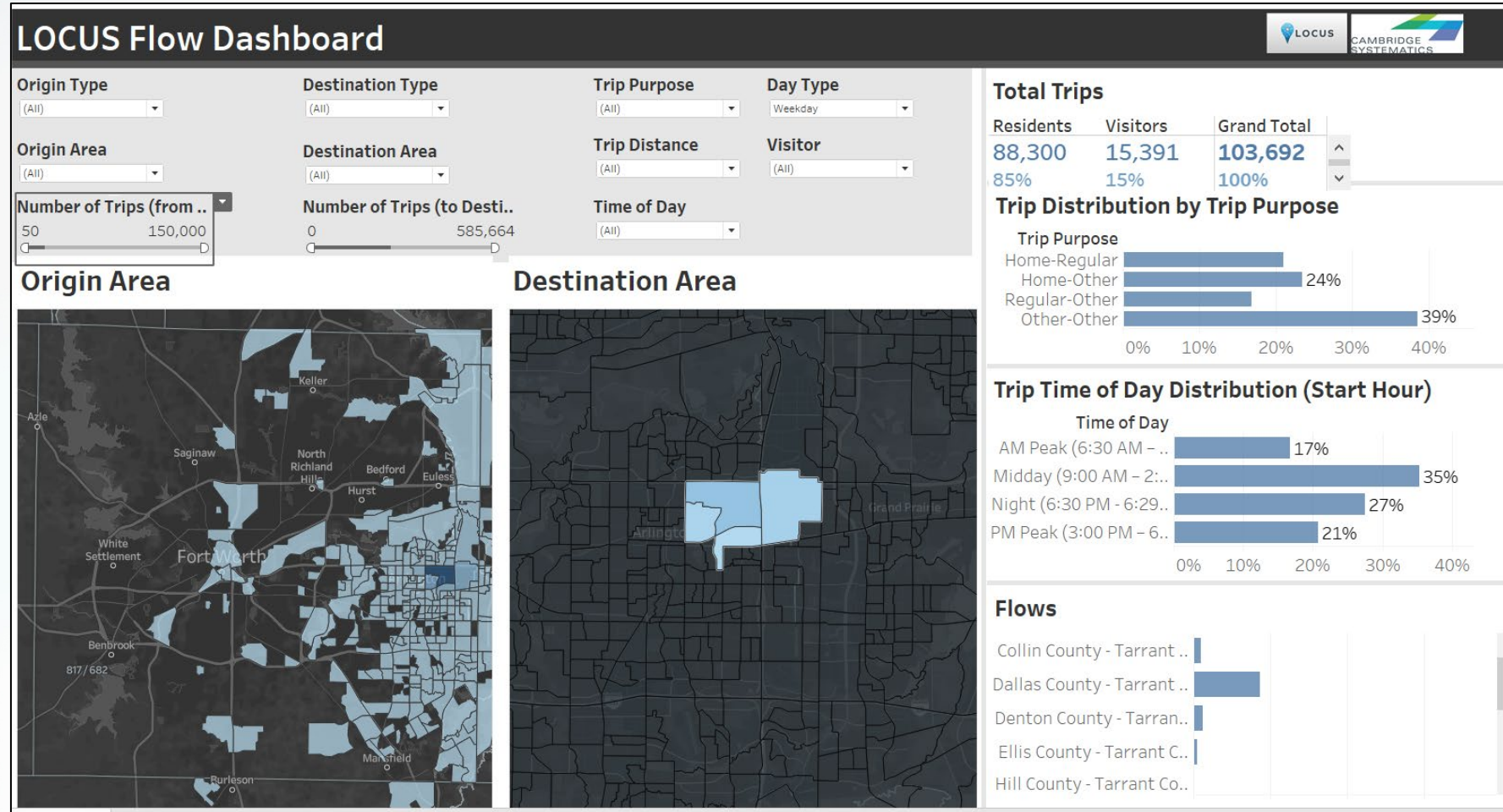
Trip Flows to Centerport

- 48,900 jobs
- 43,800 commute trips (LEHD)
- 84,100 total trips (Locus)
- 71,700 external trips (Locus)
- About 40,800 from Tarrant County (57%)



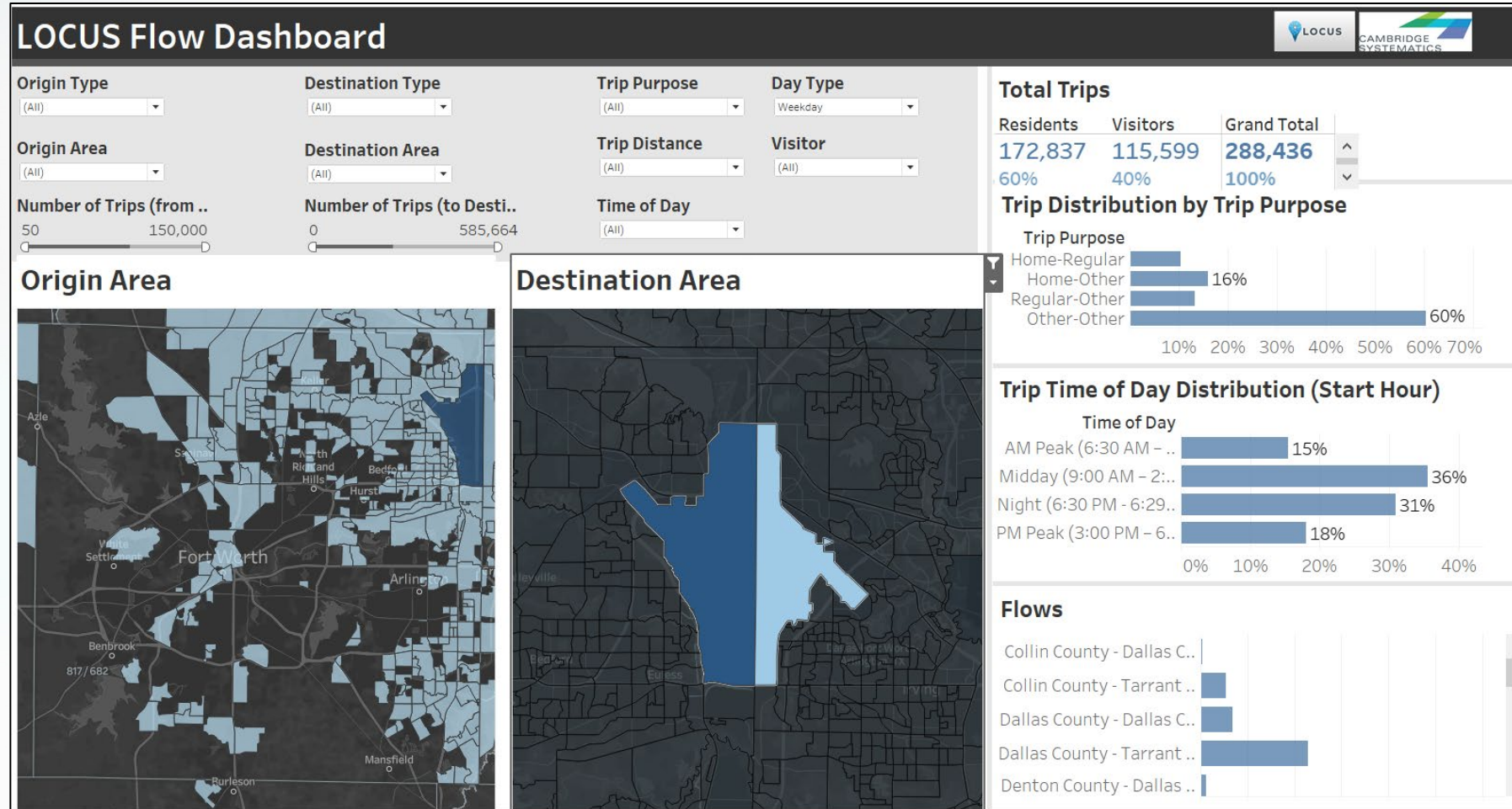
Trip Flows to Arlington

- 36,900 jobs
- 35,900 commute trips (LEHD)
- 103,700 total trips (Locus)
- 78,800 external trips (Locus)
- About 49,300 from Tarrant County (63%)



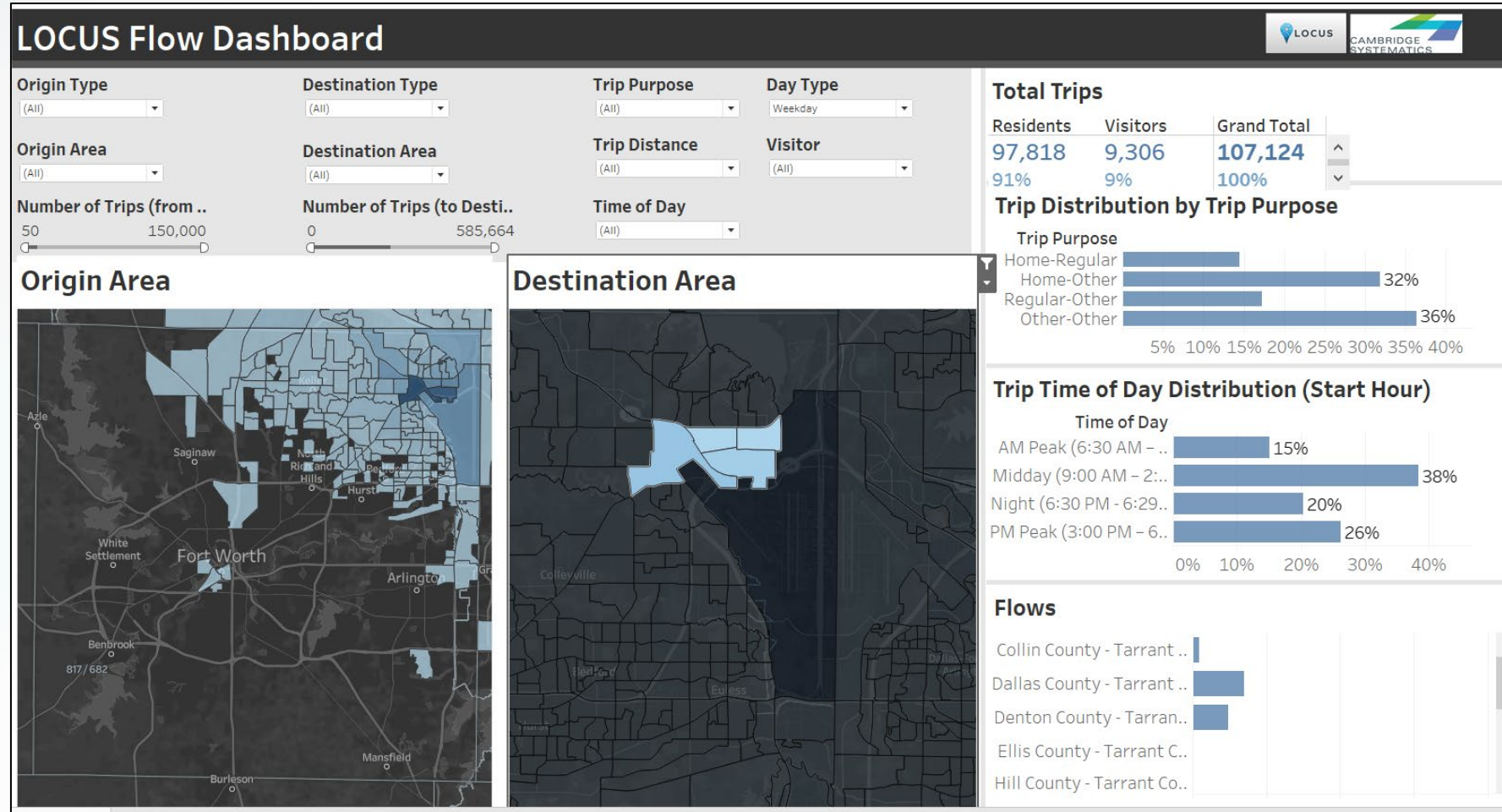
Trip Flows to DFW Airport

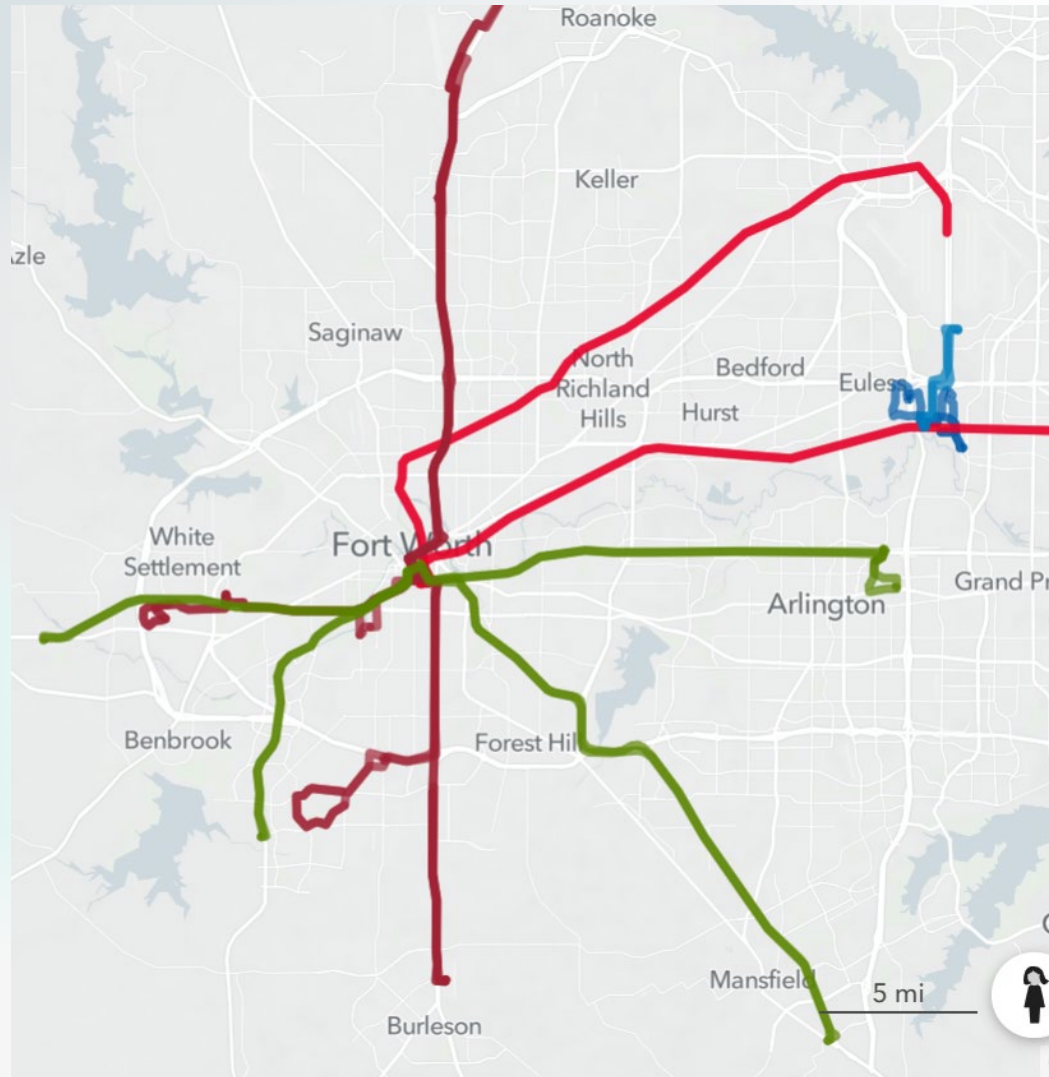
- 55,000 jobs
- 49,600 commute trips (LEHD)
- 288,400 total trips (Locus)
- 192,000 external trips (Locus)
- About 37,000 from Tarrant County (19%)



Trip Flows to Grapevine

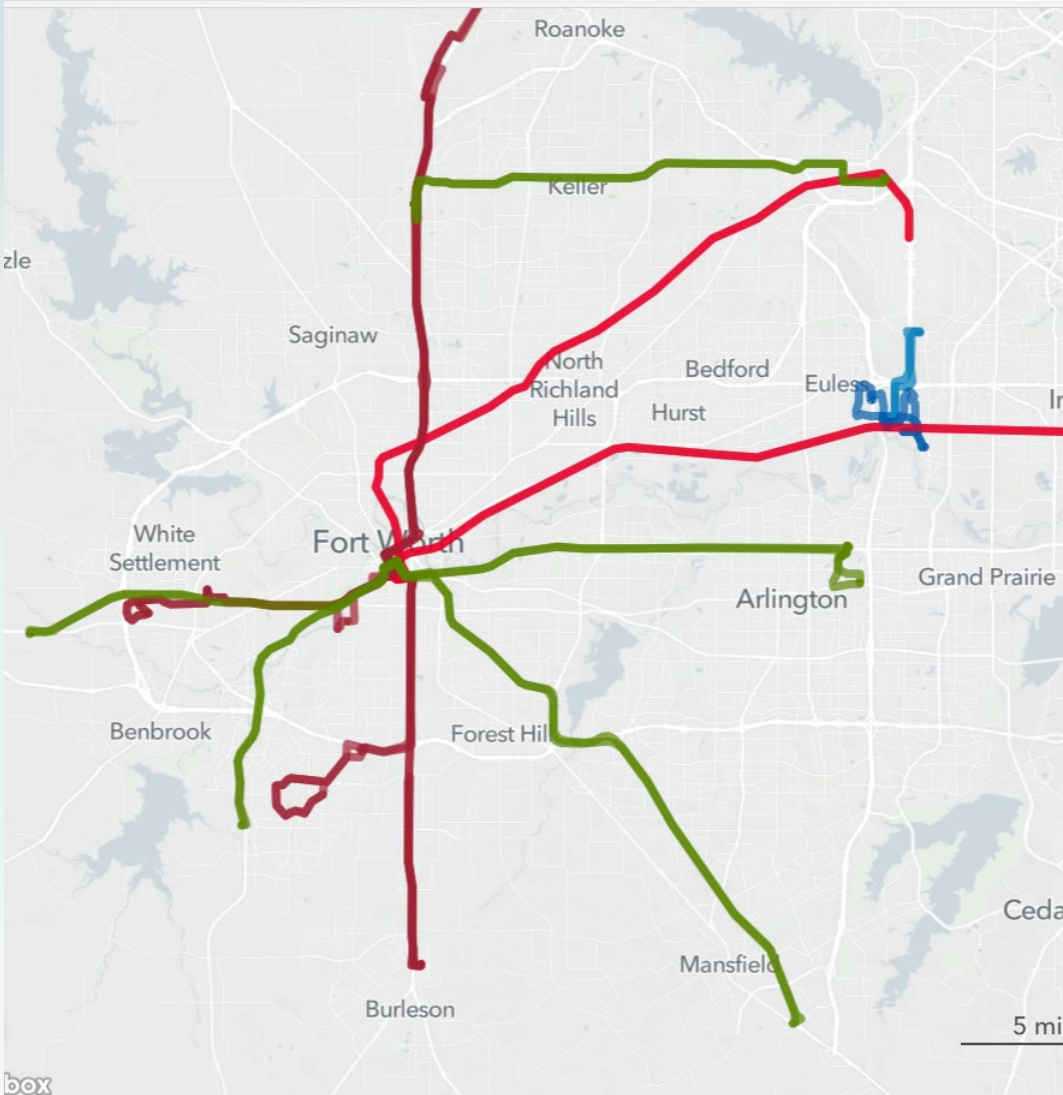
- 30,000 jobs
- 27,000 commute trips (LEHD)
- 107,100 total trips (Locus)
- 86,000 external trips (Locus)
- About 47,900 from Tarrant County (56%)





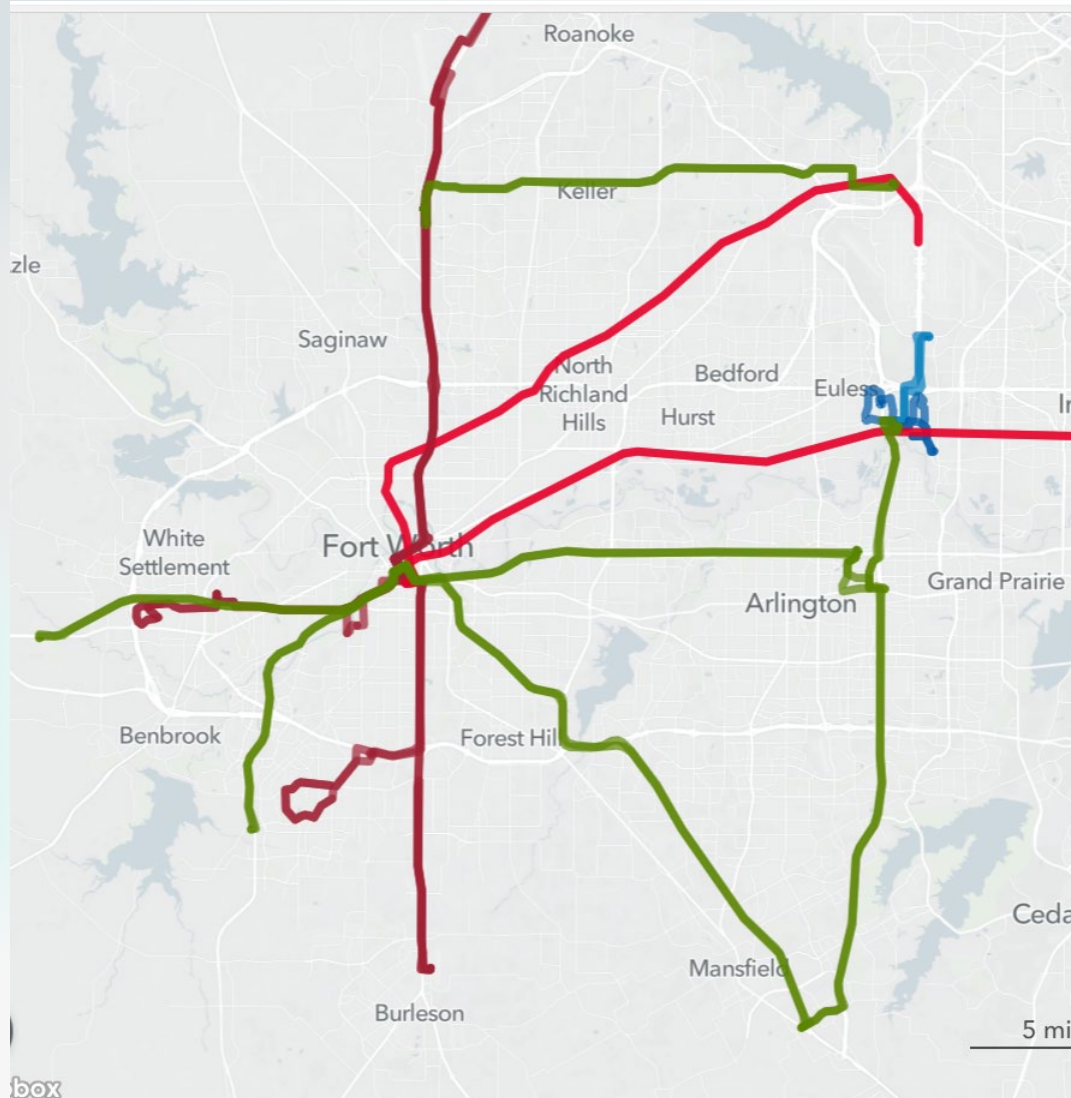
High Service Needs Regional Service Expansion

- Mansfield-Fort Worth
- SW Tarrant-Fort Worth
- West Tarrant-Fort Worth
- Arlington-Fort Worth



High + Medium Service Needs Regional Service Expansion

- Mansfield-Fort Worth
- SW Tarrant-Fort Worth
- West Tarrant-Fort Worth
- Arlington-Fort Worth
- North Tarrant-Keller-Grapevine



High + Medium + Low Service Needs Regional Service Expansion

- Mansfield-Fort Worth
- SW Tarrant-Fort Worth
- West Tarrant-Fort Worth
- Arlington-Fort Worth
- North Tarrant-Keller-Grapevine
- Mansfield-Arlington-Centreport

Scenario Definition

- **Scenario 1**
 - Local: High Service Needs
 - Regional: High + Medium + Low Service Needs
- **Scenario 2**
 - Local: High + Medium Service Needs
 - Regional: High + Medium Service Needs
- **Scenario 3**
 - Local: High + Medium + Low Service Needs
 - Regional: High Service Needs

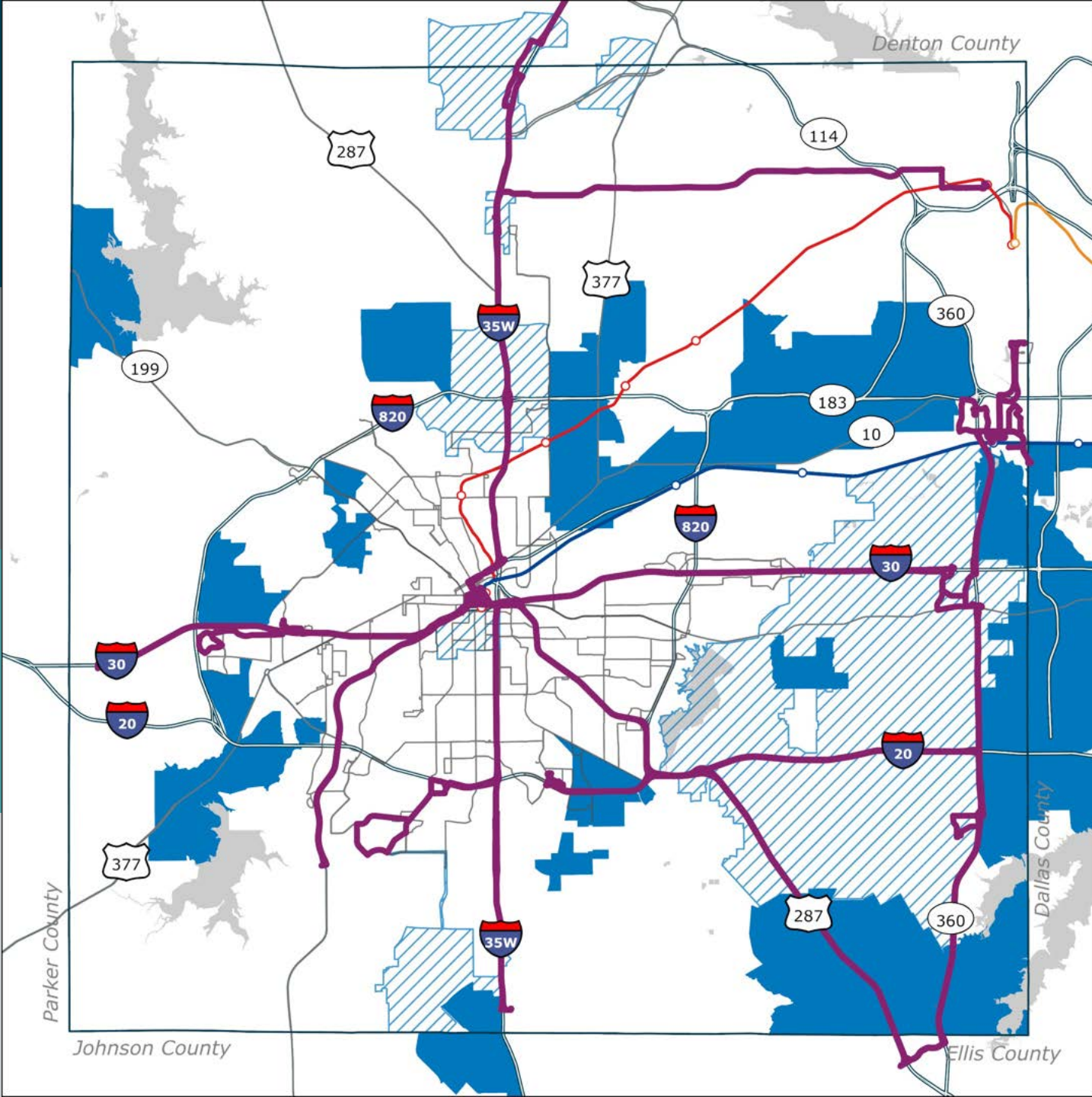
Estimated Service Hours & Annual Costs

	Scenario 1			Scenario 2			Scenario 3		
	Budget	Annual Revenue Hours	Daily Revenue Hours	Budget	Annual Revenue Hours	Daily Revenue Hours	Budget	Annual Revenue Hours	Daily Revenue Hours
Local									
<i>On Demand</i>	\$13,465,000	245,000	798	\$14,485,000	263,700	859	\$13,376,000	243,500	793
<i>Fixed Route</i>	\$0	0	0	\$617,000	7,400	24	\$2,696,500	32,600	106
Local Subtotal	\$13,465,000	245,000	798	\$15,102,000	271,100	883	\$16,072,500	276,100	899
Regional Subtotal	\$4,641,000	34,328	135	\$3,253,000	24,062	94	\$2,183,000	16,152	63
Total	\$18,106,000	279,328	933	\$18,355,000	295,162	977	\$18,255,500	292,252	963
Local %	74%	88%		82%	92%		88%	94%	
Regional %	26%	12%		18%	8%		12%	6%	

- Local service hour estimates based on:
 - Calculating appropriate expenditure in each area based on population & employment
 - Estimating potential on-demand service hours by using a cost of \$55 per service hour (estimated average cost for on-demand services)
 - Estimating potential cost for areas served by a mix of fixed route and on-demand services by using a cost of \$82.84 per service hour (estimated average cost for Trinity Metro fixed route service and on-demand services)
- Commuter service hour estimates based on:
 - Estimating service hours based on appropriate service plan
 - Applying a rate of \$135.24 per revenue hour (Trinity Metro fixed route cost/hour, factored by 25% to reflect higher deadhead hours)

FINAL DRAFT SCENARIOS









Scenario 1

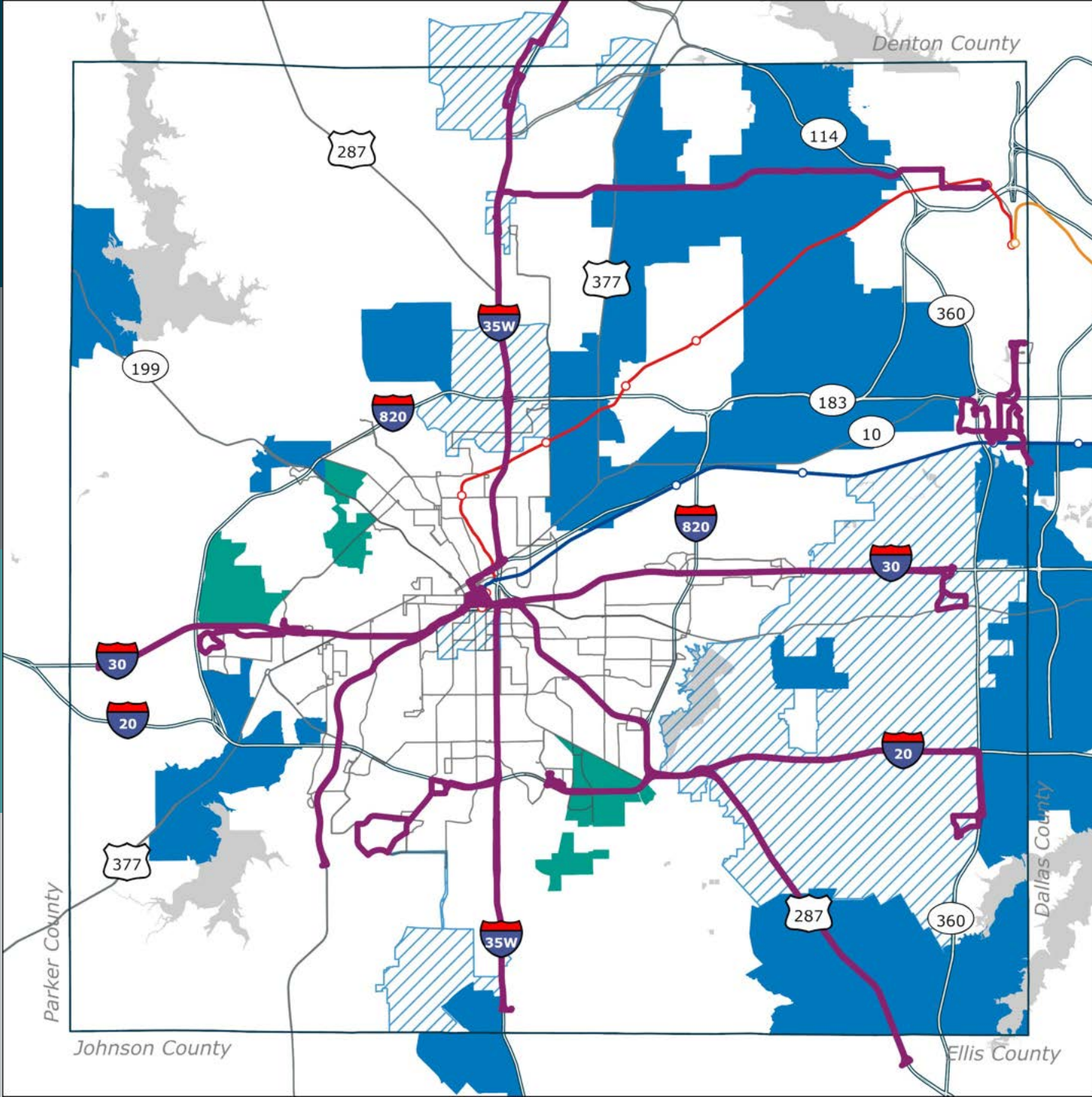
Service Type	Hours	% of Total
Local	245,000	88%
Regional	34,300	12%
Total	279,300	100%

Approx. Cost = \$18.1 million
(74% local/26% regional)

-  On-Demand
-  Existing MOD Zones
-  Fixed-Route + On-Demand
-  Regional



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Scenario 2

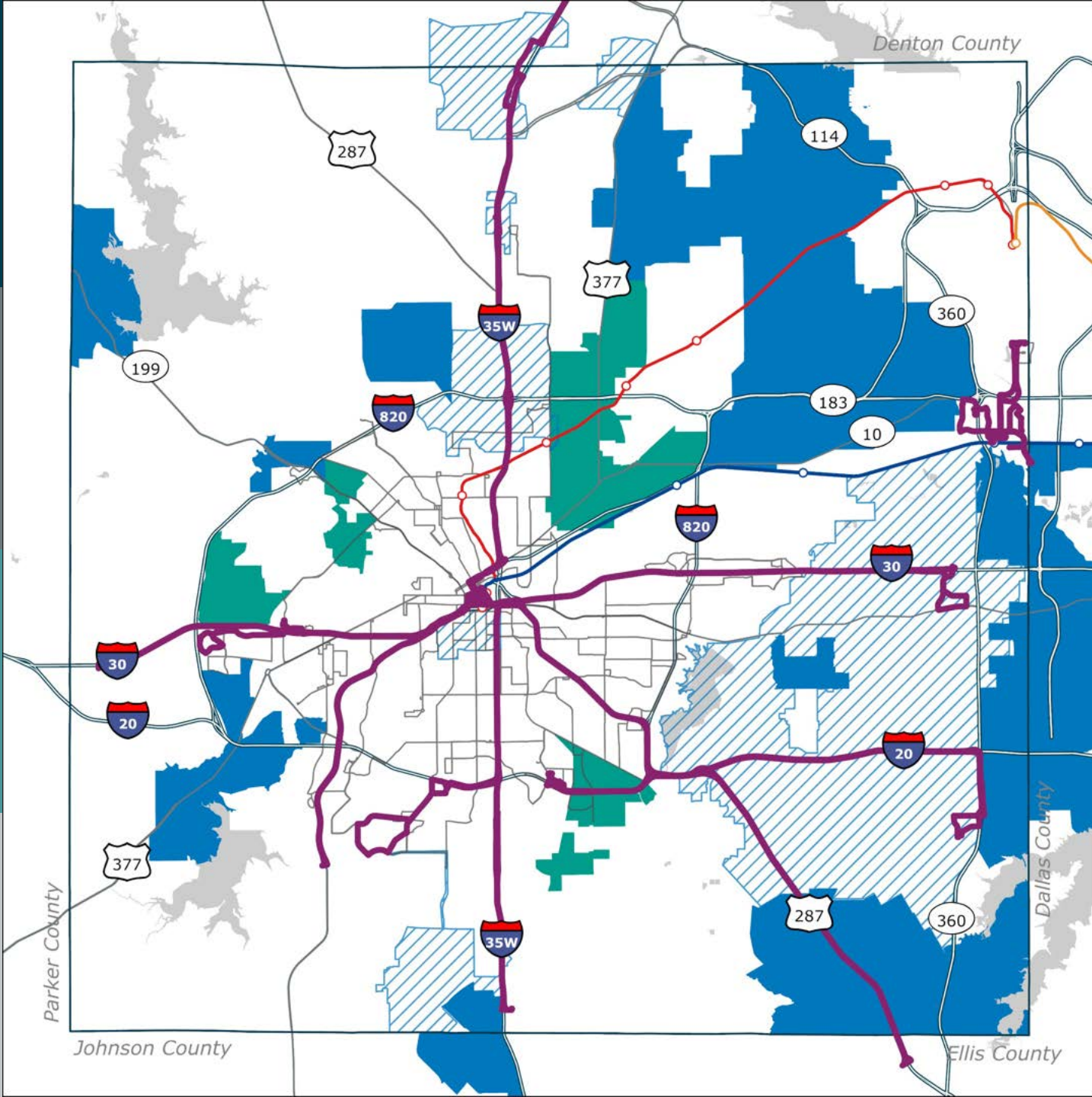
Service Type	Hours	% of Total
Local	271,100	92%
Regional	24,100	8%
Total	295,200	100%

Approx. Cost = \$18.4 million
(82% local/18% regional)

- On-Demand
- Existing MOD Zones
- Fixed-Route + On-Demand
- Regional



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Scenario 3

Service Type	Hours	% of Total
Local	276,100	94%
Regional	16,100	6%
Total	292,200	100%

Approx. Cost = \$18.3 million
(88% local/12% regional)

- On-Demand
- Existing MOD Zones
- Fixed-Route + On-Demand
- Regional



City	Scenario 1	Scenario 2	Scenario 3
Arlington	Regional	Regional	Regional
Azle	On-Demand	On-Demand	On-Demand
Bedford	On-Demand	On-Demand	On-Demand
Benbrook	On-Demand	On-Demand	On-Demand
Burleson	On-Demand	On-Demand	On-Demand
Colleyville	--	On-Demand	On-Demand
Eules	On-Demand	On-Demand	On-Demand
Everman	On-Demand	On-Demand Fixed Route	On-Demand Fixed Route
Forest Hill	On-Demand	On-Demand Fixed Route	On-Demand Fixed Route
Fort Worth	Regional	Regional	Regional
Grapevine	Regional	Regional	--
Grand Prairie	On-Demand Regional	On-Demand --	On-Demand --
Haltom City	On-Demand	On-Demand	On-Demand Fixed Route
Hurst	On-Demand	On-Demand	On-Demand
Keller	-- Regional	On-Demand Regional	On-Demand --
Lake Worth	--	On-Demand	On-Demand
Mansfield	On-Demand Regional	On-Demand Regional	On-Demand Regional
Pantego	On-Demand	On-Demand	On-Demand
Richland Hills	On-Demand	On-Demand	On-Demand Fixed Route
River Oaks	On-Demand	On-Demand Fixed Route	On-Demand Fixed Route
Saginaw	On-Demand	On-Demand	On-Demand
Sansom Park	On-Demand	On-Demand Fixed Route	On-Demand Fixed Route
Southlake	-- Regional	On-Demand Regional	On-Demand --
Watauga	On-Demand	On-Demand	On-Demand Fixed Route
White Settlement	On-Demand	On-Demand Fixed Route	On-Demand Fixed Route

Service Recommendations by Scenario

On-Demand
Fixed Route
Regional

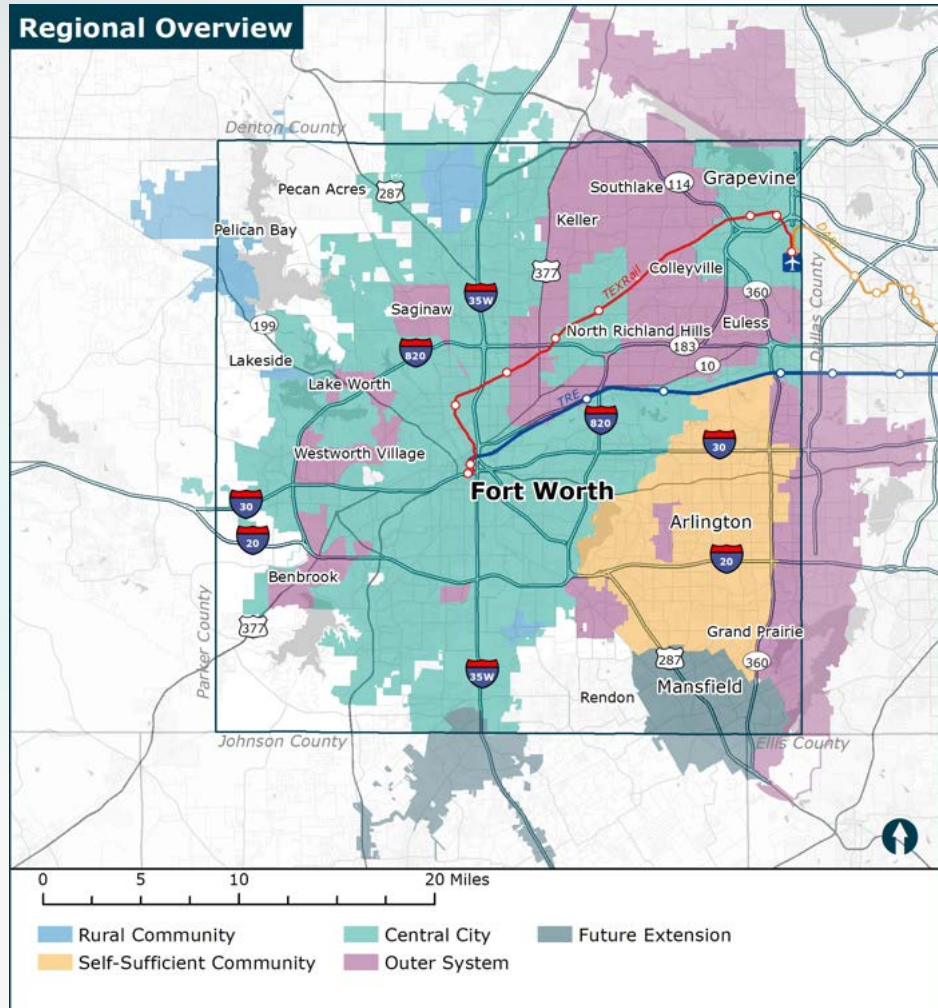


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FUNDING STRATEGIES



Municipal Typology

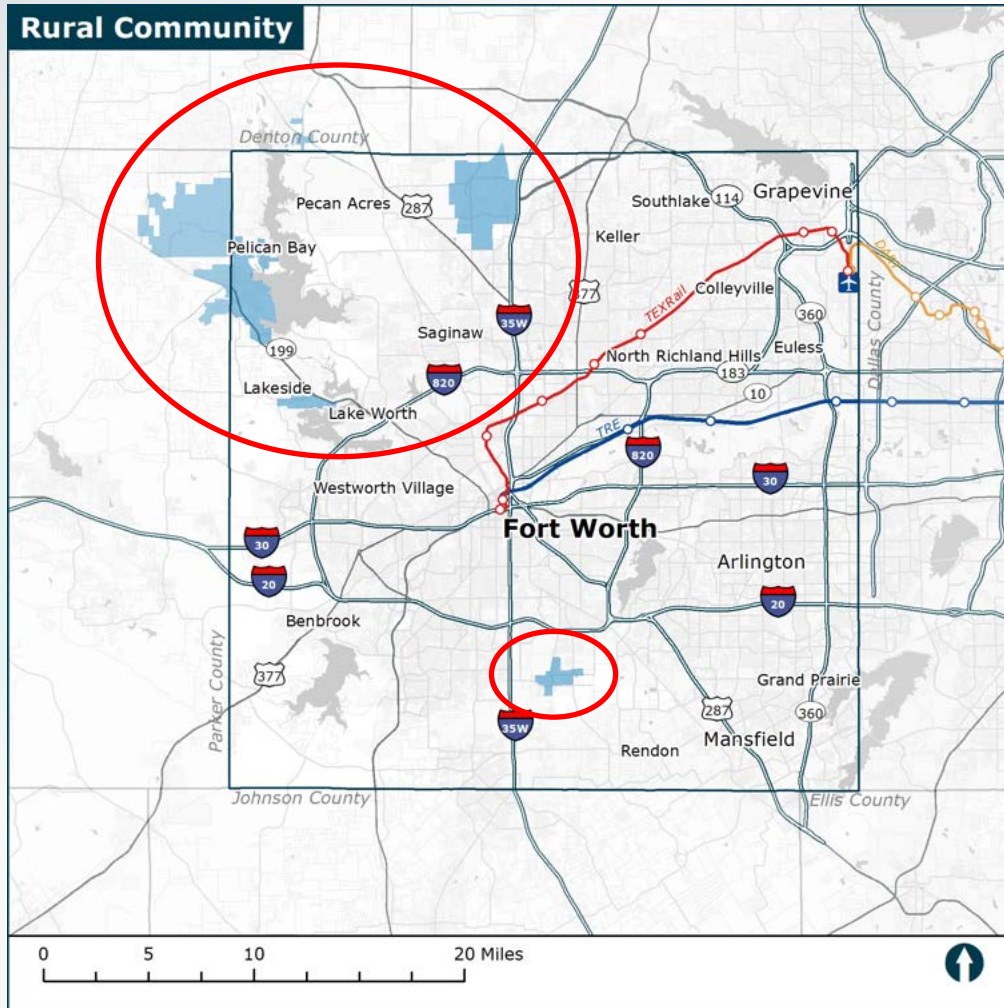


Purpose for Typology

- Align similar municipalities
- Determine coordinated funding mechanisms and programs
- Determine potential cost share by municipal type

Rural Community

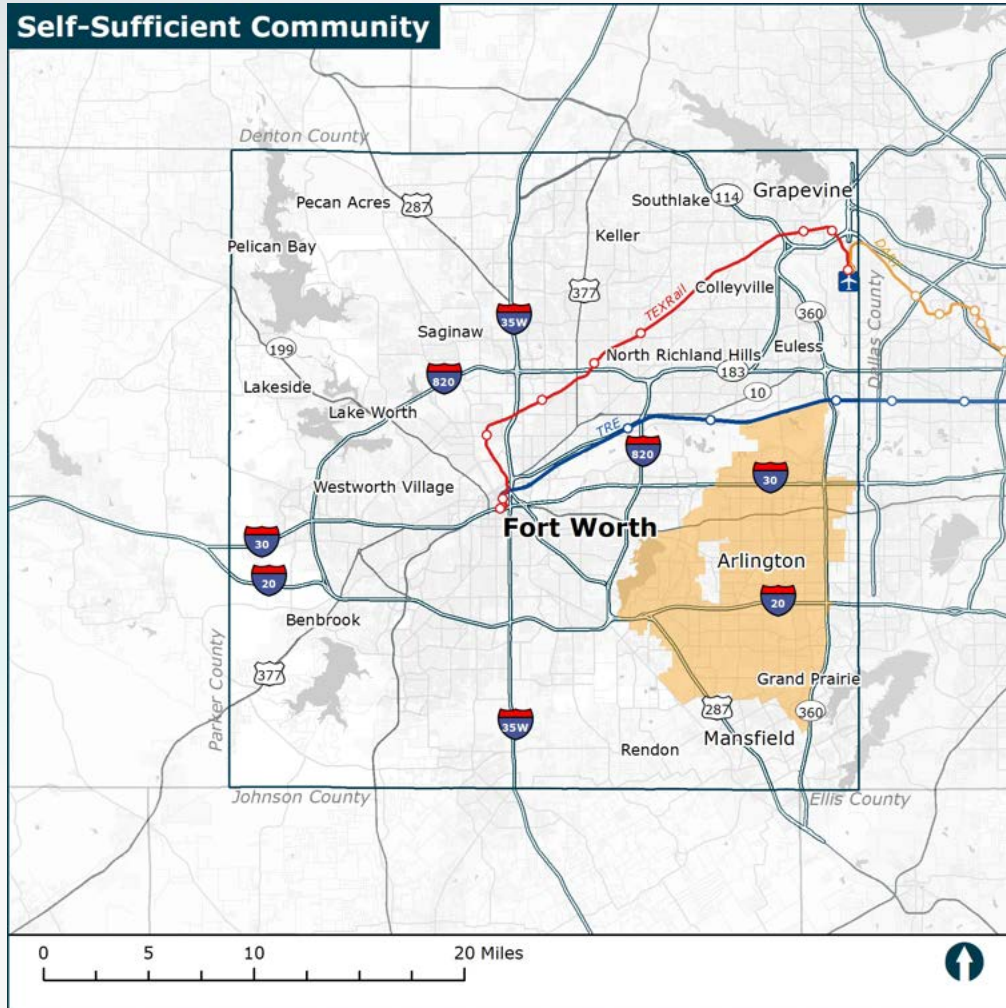
A municipality that is currently not served by public transportation. Typically, not adjacent to current transit-served areas.



Municipalities:

- Azle
- Everman
- Haslet
- Lakeside
- Newark
- Pelican Bay
- Reno
- Trophy Club

Self-Sufficient Community

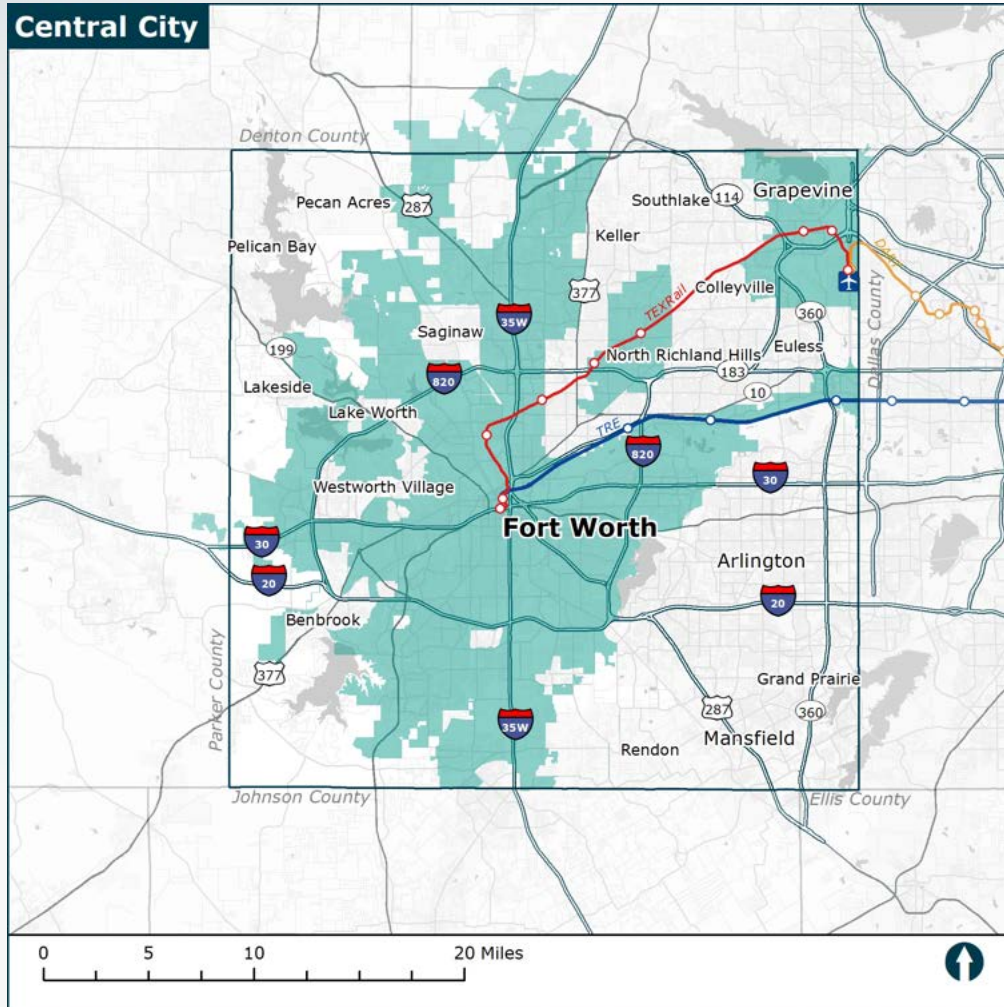


A municipality that has self-managed public transportation within the municipal boundaries. Municipality is not a member of a transit authority.

Municipalities:

- Arlington

Central City (Cities Receiving Transit)

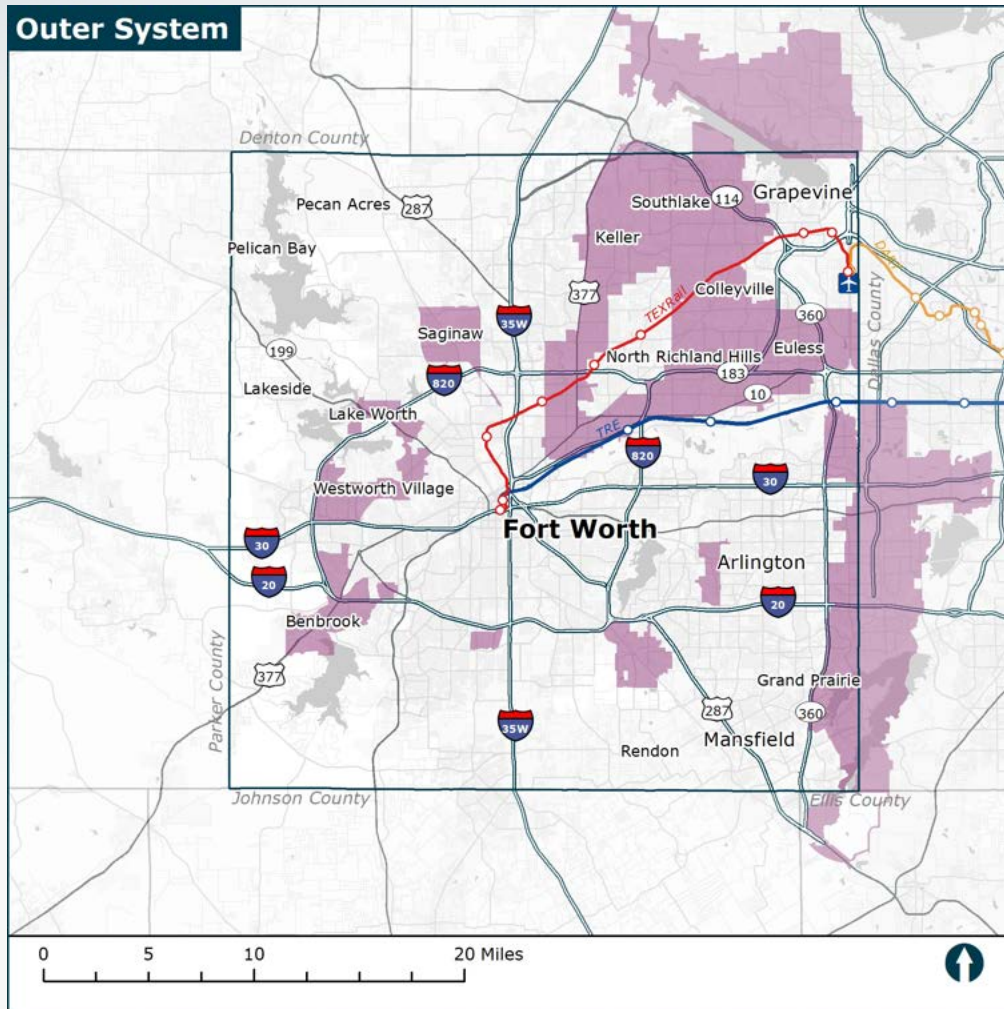


A municipality served by transit provided by Trinity Metro. Maybe a member city or utilizing a subscription of services through Trinity Metro.

Municipalities:

- Fort worth
- Blue Mound
- North Richland Hills
- Grapevine
- Forest Hill
- Crowley

Outer System

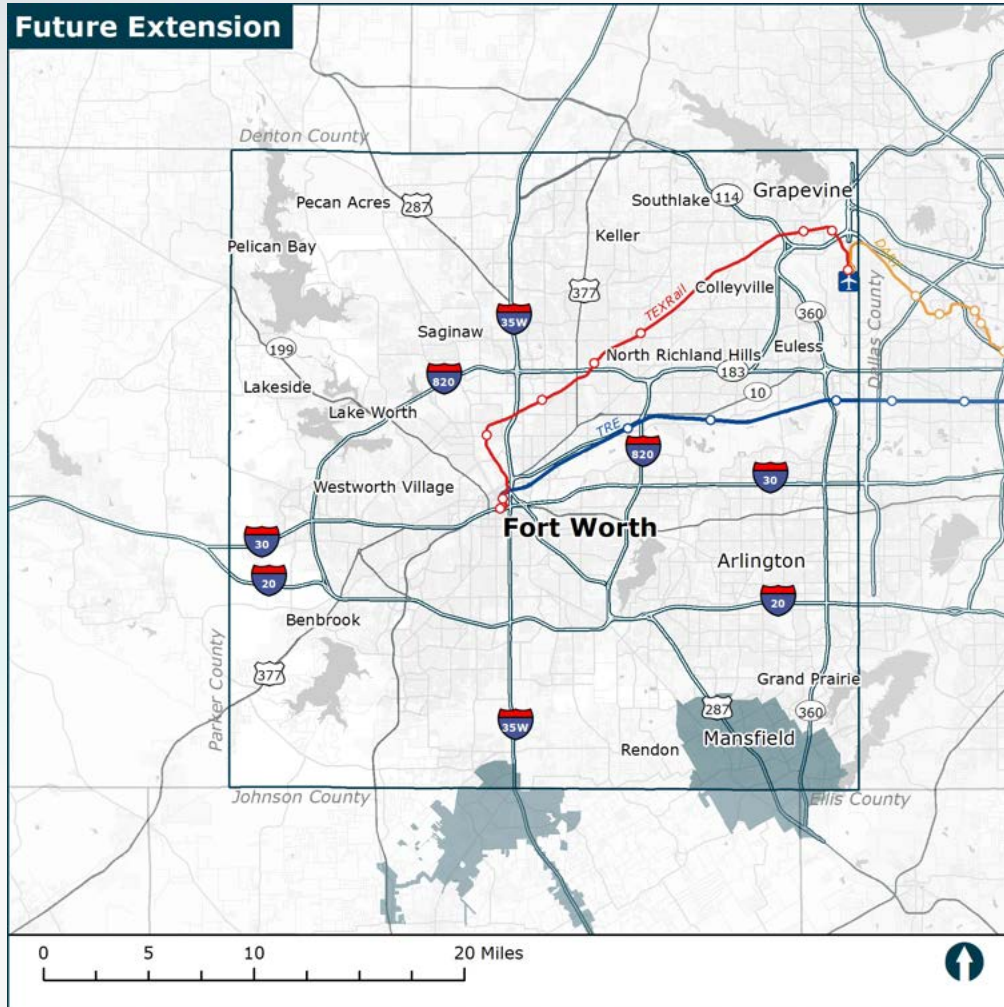


A municipality that borders a central city where public transportation is easily extended due to close proximity to the system.

Municipalities:

- Bedford
- Benbrook
- Dalworthington Garden
- Edgecliff Village
- Euless
- Haltom City
- Hurst
- Kennedale
- Lake Worth
- Pantego
- Richland Hills
- River Oaks
- Saginaw
- Sansom Park
- Watauga
- Westworth Village
- White Settlement
- Grand Prairie
- Keller
- Westlake
- Southlake
- Flower Mound
- Colleyville

Future Extension



A municipality that contains a walkable urban place, which will be a priority link in the transit system. Currently undergoing a rail or bus transit planning process.

Municipalities:

- Burleson
- Mansfield

Analysis Process for Funding Mechanisms

- 1. Level of Appropriateness** (based on current financial standing)
 - Local option sales tax available
 - Fiscal constraints
- 2. Level of Partnership** (in order to realize transit funding)
 - Transit-specific special development needs
 - Potential for transit-oriented development
- 3. Qualitative Assessment** (special circumstances)
 - Political constraints
 - Development potential constraints

Potential Funding Mechanism by Type

Name	Rural Community	Self-Sufficient Community	Central City	Fringe System	Future Extension
Local (Municipality, Transit Authority or County)					
Sales Tax Contributions	•	•	•	•	•
Tax Increment Reinvestment Zone			•	•	•
Transportation Reinvestment Zone	•		•	•	•
General Fund Contributions	•	•	•	•	•
Toll Fee Allocation	County-wide initiative in coordination with State and Regional entities				
Fee for Service (VIA, ZipZone, etc.)	•	•	•	•	•
Development Fees / Impact Fees	•	•	•	•	•
Bonds/CIP programming			•		•
Public Improvement Districts	•	•	•	•	•

Potential Funding Mechanism by Type

Name	Rural Community	Self-Sufficient Community	Central City	Fringe System	Future Extension
Local (Municipality, Transit Authority or County)					
Property Assessments			•	•	•
Private Participation (Sponsorship by Corporations)		•	•	•	•
Agency Participation (Sponsorship by Institutions)	•	•	•	•	•
Local Motor Vehicle Registration Fee	•	•	•	•	•
Transit Fare Revenue	•	•	•	•	•
In-Kind Contributions	•	•	•	•	•
Joint Development Agreements/Projects			•	•	•
Luxury Transportation Tax	County-wide initiative in coordination with State and Regional entities				
Auxiliary Transit Revenues (Advertising & Concessions)	•	•	•	•	•

GUIDED DISCUSSION



Questions

- Do the funding assumptions make sense for determining a baseline level of service?

Spend
less per
capita

About
the
same

Spend
more
per
capita

Questions

- What performance metrics would be most helpful in communicating these scenarios to communities?

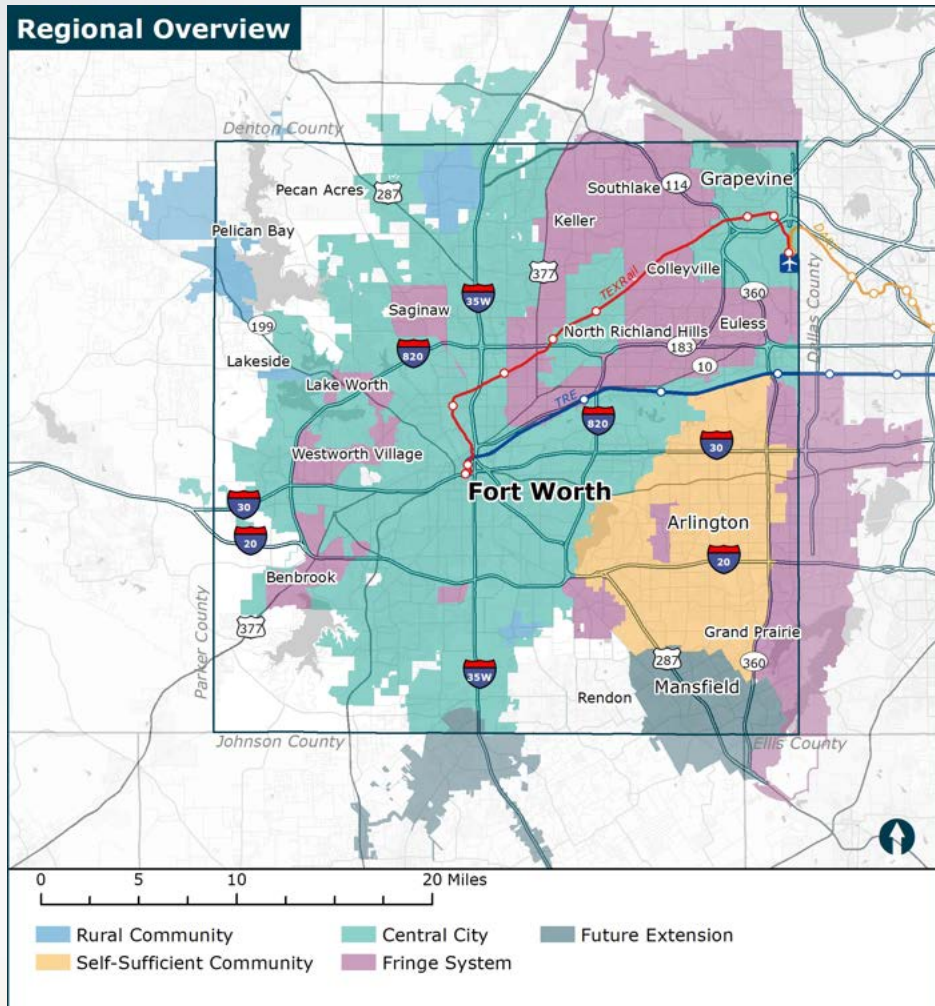
Ridership

Equity

Coverage

Access

Questions



- Do the municipality types and descriptions in this presentation fit with your knowledge of the region?
- How can we adjust our approach to best provide tools and information to the communities of Tarrant County?

Next Steps

- Public Engagement Meeting (Tentative date: March 25th)
 - » Social Media Engagement Calendar
- Scenario Development Report
- Funding Report
- Implementation Report
- Final SAG Meeting (Tentative)
- Final Report (to be available on website)



THANK YOU!



