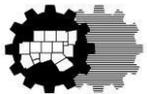




The Metropolitan Transportation Plan for North Central Texas



What is the Metropolitan Transportation Plan?



Represents a Blueprint for the Region's Multimodal Transportation System



Covers at Least a 20-Year Timeframe



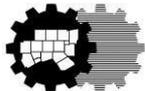
Responds to Goals



Identifies Policies, Programs, and Projects for Continued Development



Guides the Expenditure of Federal and State Funds





METROPOLITAN TRANSPORTATION PLAN

The Process



What's New about Mobility 2045?

New Base and Horizon Years

Builds Upon Mobility 2040

- New Financial Forecast and Demographics
- Updated Policies, Programs, and Projects

Consistent with HB 20 Process

10-Year Plan

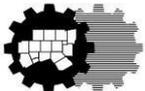
Environmental Document Consistency

Consistent with MAP-21 and FAST Act Goals

Transportation Conformity Determination

November 23, 2018

Continuous, Coordinated, Comprehensive



Mobility 2045 Goals

Mobility

- Improve Transportation Options
- Support Travel Efficiency Strategies
- Ensure Community Access to System and Process

Quality of Life

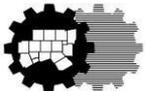
- Enhance Environment and Life Styles
- Encourage Sustainable Development

System Sustainability

- Ensure Adequate Maintenance, Safety, and Reliability
- Pursue Long-Term, Sustainable Financial Resources

Implementation

- Provide Timely Planning and Implementation
- Develop Cost Effective Projects and Programs



Mobility 2045: Focus on Connections



Emerging Technologies



Non-Motorized Connections



Regional Passenger Rail



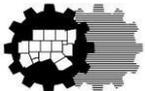
Toll Managed Lane System



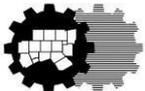
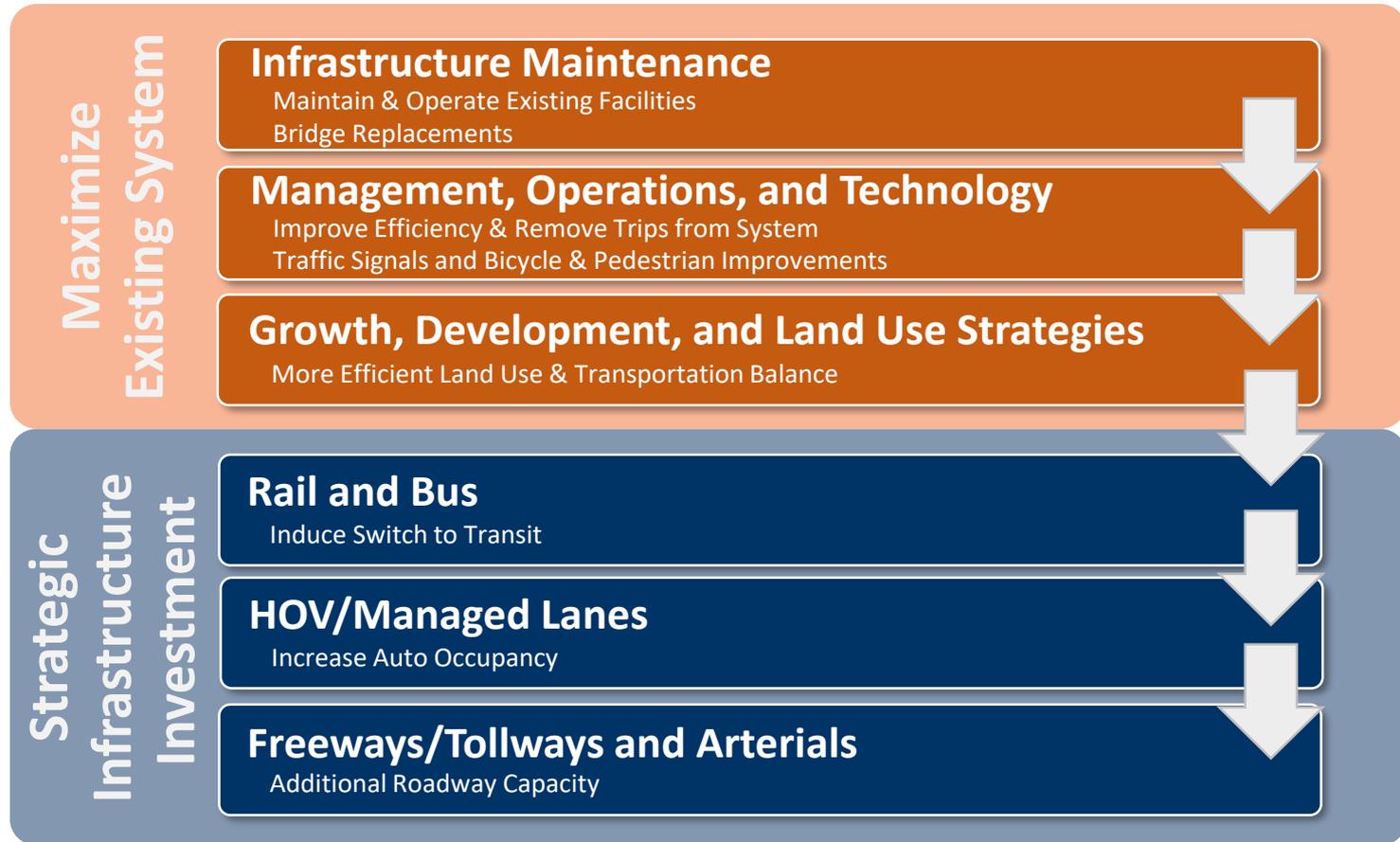
High-Speed Rail



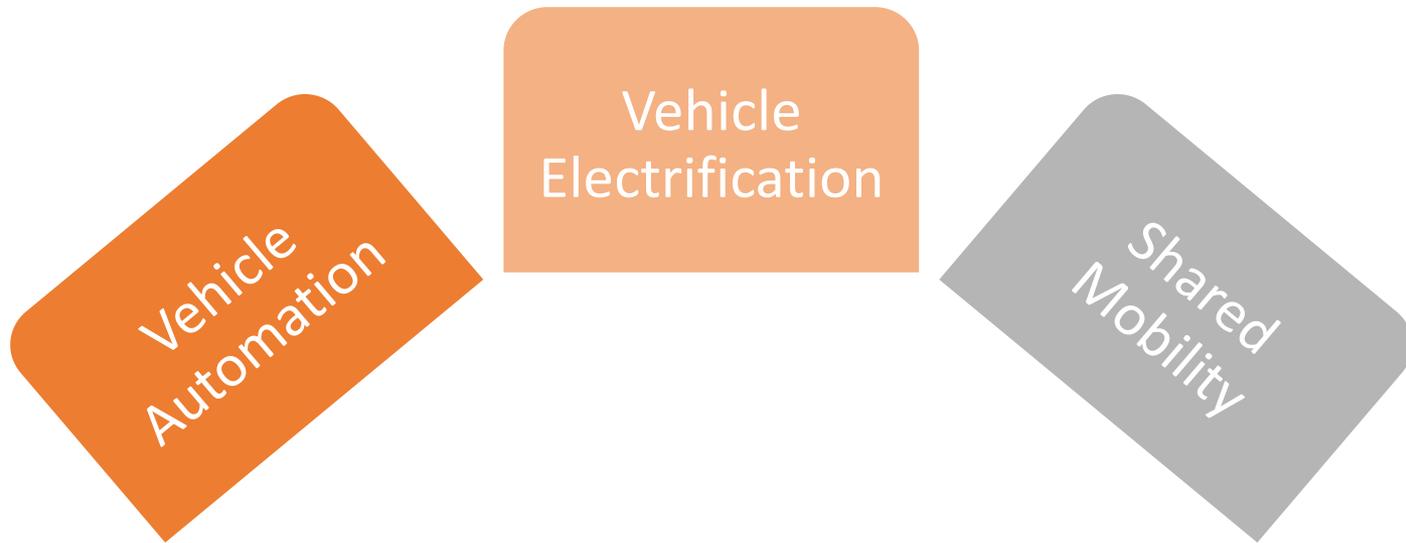
Freight



Mobility Plan Development

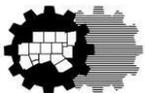


Emerging Technologies



Levels of Vehicle Automation

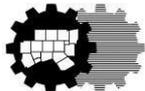
SAE Level	0	1	2	3	4	5
	No Automation	Driver Assistance	Partial Automation	Conditional Automation	High Automation	Full Automation
Description	Driver carries out all driving tasks.	Driver retains control but vehicle has some driving assistance features.	Vehicle has some automated features but driver must stay focused on driving tasks.	Driver does not have to focus on driving tasks, but must always be ready to take control if notified.	In certain situations, vehicle can carry out all driving tasks. Driver control is optional.	Vehicle can carry out all driving tasks. Driver control is optional.



Non-Motorized Connections:

Active Transportation

- **Low-cost mobility options that place fewer demands on local roads and highways.**
- **Mobility 2045 supports the development of local Complete Streets policies and the implementation of Complete Streets infrastructure on both new and reconstructed streets; such designs will safely accommodate all users in the region.**



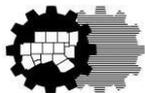
Non-Motorized Connections: The Regional Veloweb & Costs

	1997 Regional Veloweb	Mobility 2035 Regional Veloweb (2011)	Mobility 2035 – 2013 Update (2013)	Mobility 2040 Regional Veloweb (2016)	Mobility 2045 Regional Veloweb (2018)
Length (miles)	644	1,668	1,728	1,876	1,883
Number of Cities Connected	50	116	117	105	106
Number of Counties Connected	4	10	10	10	10

Facility	Estimated Costs Per Mile
12-foot wide concrete shared-use path ¹	\$420,000
Retaining wall, bridges, railings, culverts, or other major structures	\$530,000
Total	\$950,000

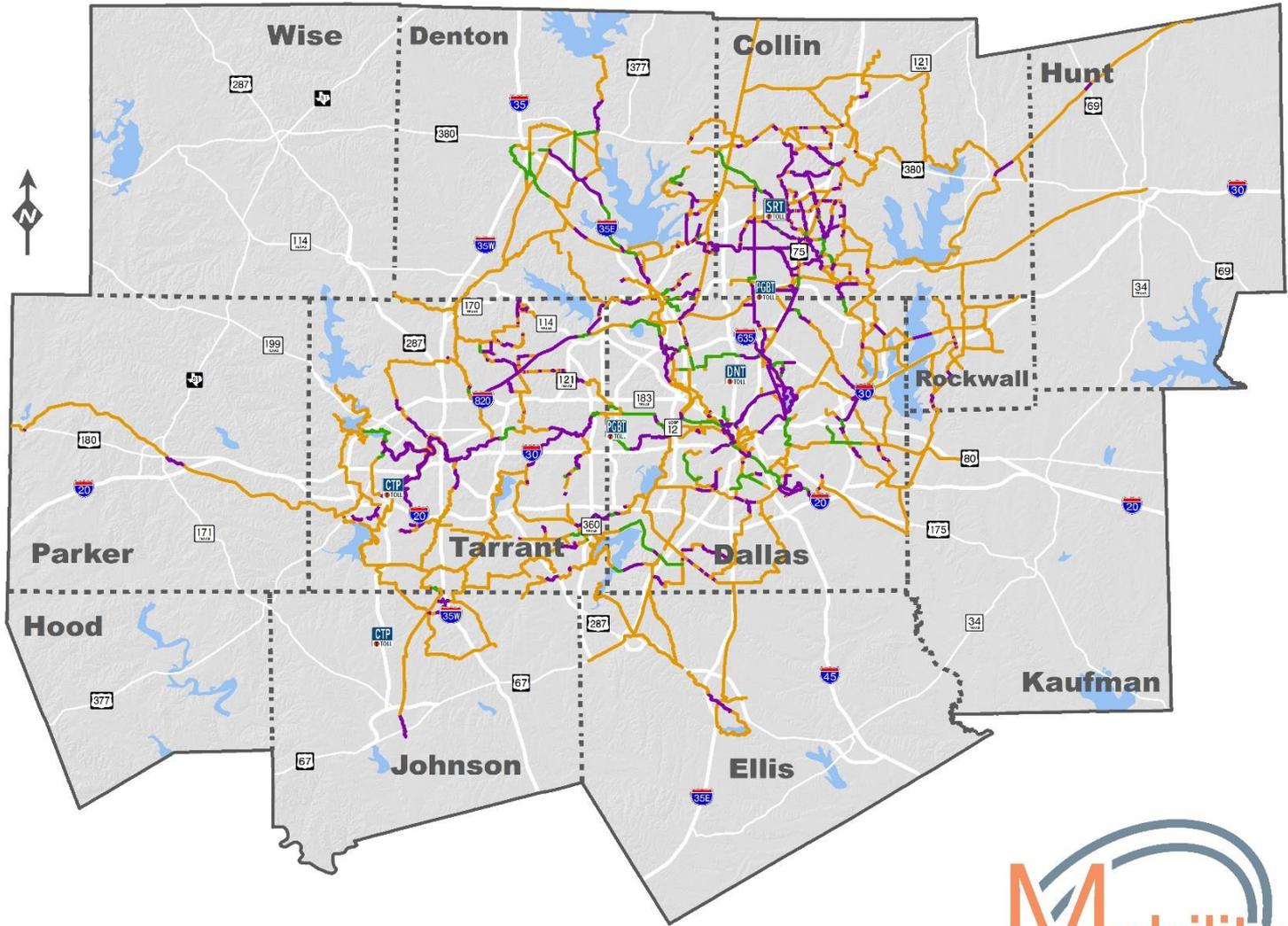
¹Based on 12-foot width, includes mobilization, site prep, demolition, earthwork

Source: NCTCOG, 2015



Regional Veloweb

- Existing 455 Miles
- Funded 143 Miles
- Planned 1,285 Miles
- Total 1,883 Miles

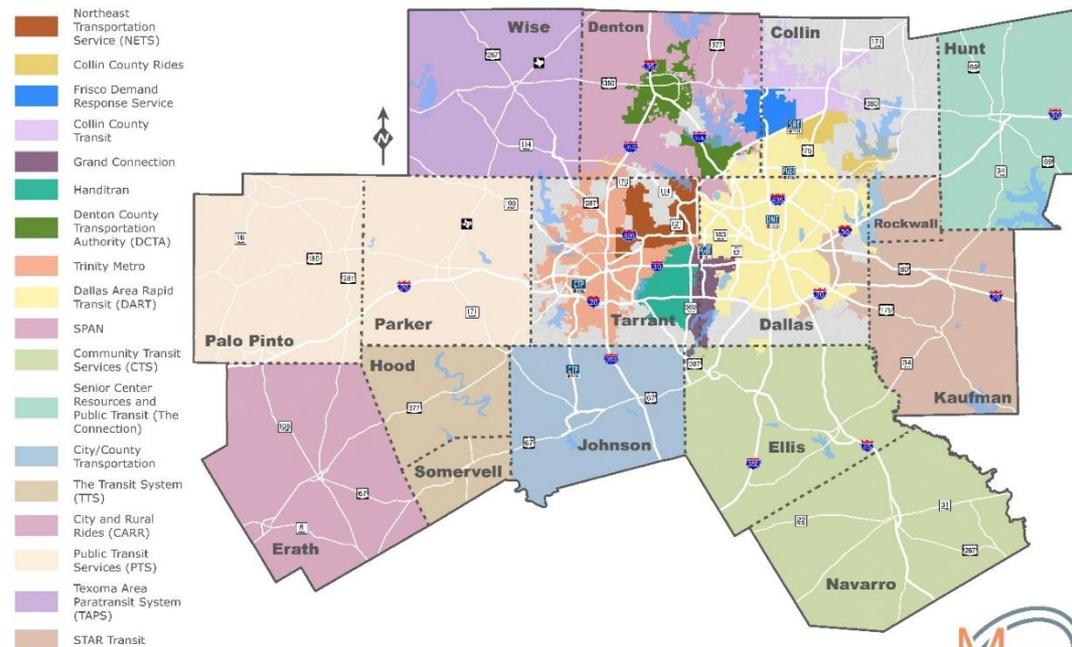


Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics for the Regional Veloweb system will be determined through ongoing project development.

Regional Passenger Rail

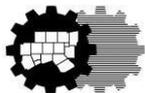
- Local Transit Agencies
- Trinity Metro
- DART
- DCTA

Public Transportation Provider Service Areas



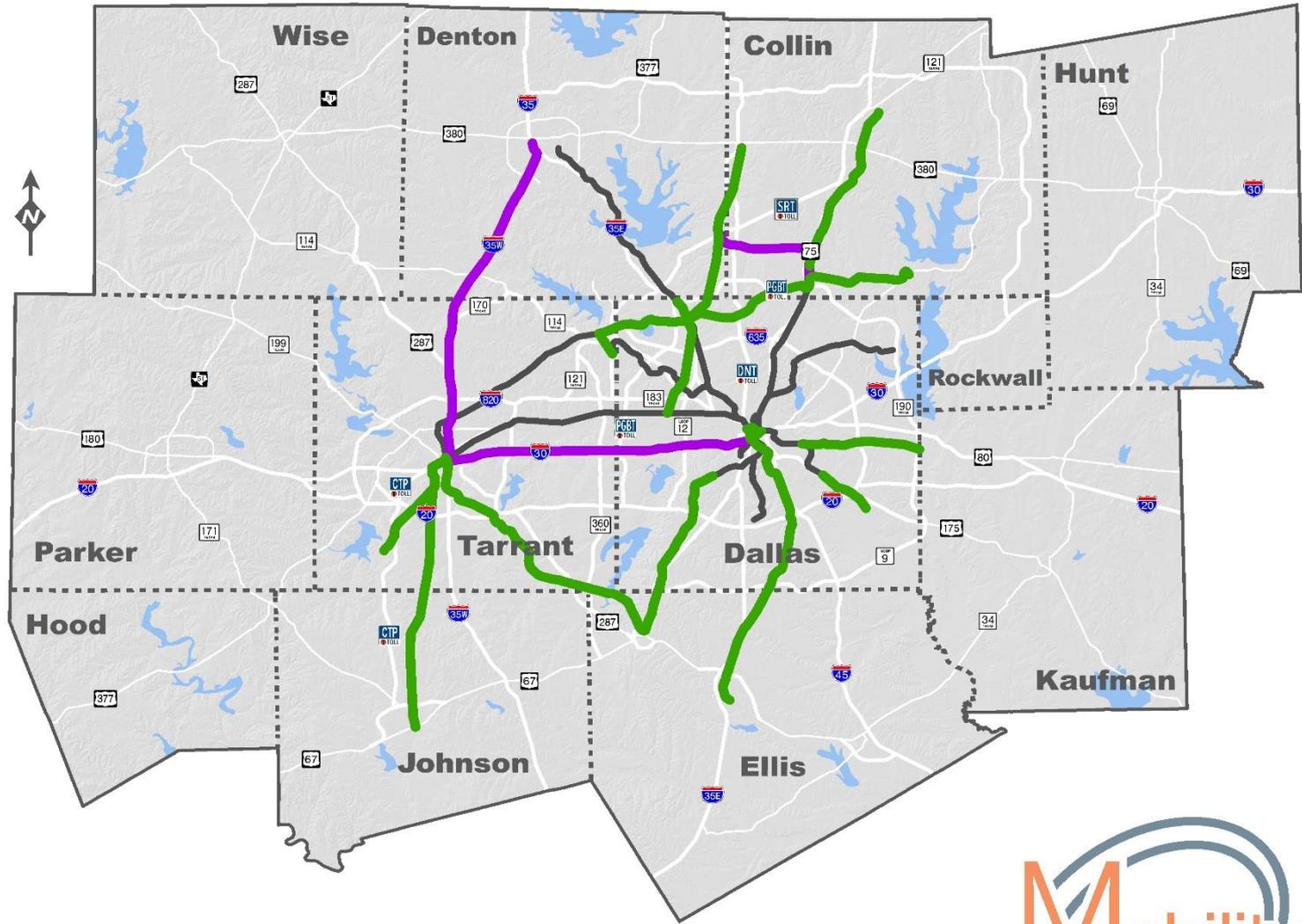
For more information:

<https://www.nctcog.org/trans/plan/transit/transit-providers>



Major Transit Corridor Recommendations

-  Recommended Rail
-  Existing Rail
-  Recommended High-Intensity Bus



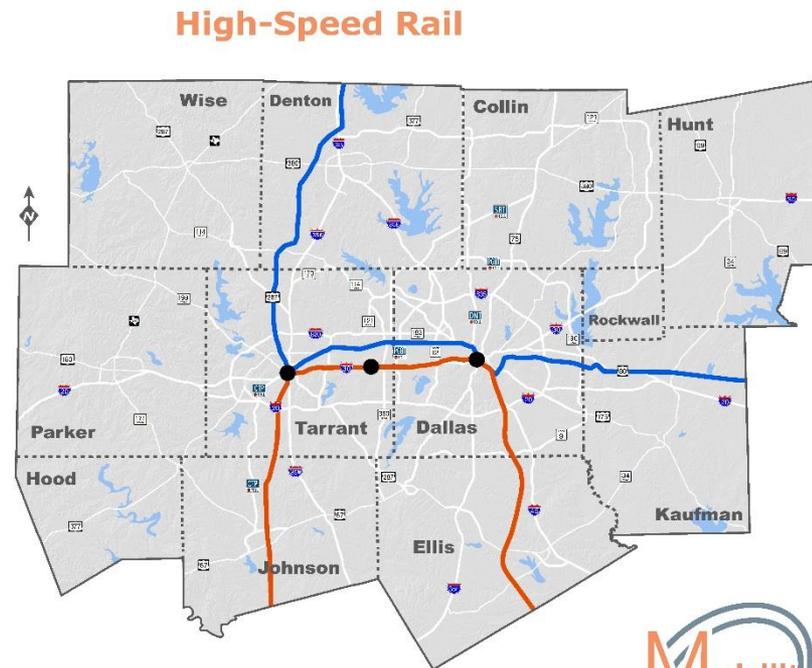
High-Speed Rail

- **Connected System**
- **“One Seat Ride”**
- **Three Stations**
 - **Fort Worth**
 - **Arlington**
 - **Dallas**

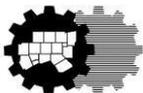
For more information:

<https://www.nctcog.org/trans/plan/transit/transit-planning/high-speed-rail>

- At-Grade
- Grade Separated
- Stations



Corridor-specific alignment, design, and operational characteristics for the intercity passenger, regional passenger, and freight rail systems will be determined through capacity evaluation and ongoing project development. Refined rail forecasts are necessary to determine technology and alignment in future rail corridors.



Freight

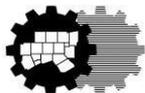
Truck Lane Restrictions Impacts

Lane	Without Truck Lane Restrictions (Standard Enforcement) mph	With Truck Lane Restrictions (Standard Enforcement) mph	Change in Average Speed mph
Left	71.5	72.4	0.9
Middle	65.6	66.2	0.6
Right	60.8	61.3	0.5

Source: NCTCOG (2009). North Central Texas Truck Lane Restriction Expansion Traffic Study Report.

The table above illustrates the impact of truck lane restrictions on the average speed for vehicles traveling on IH 20 and IH 30.

Truck lanes restrictions are expected to improve highway safety and mobility and the region's air quality.



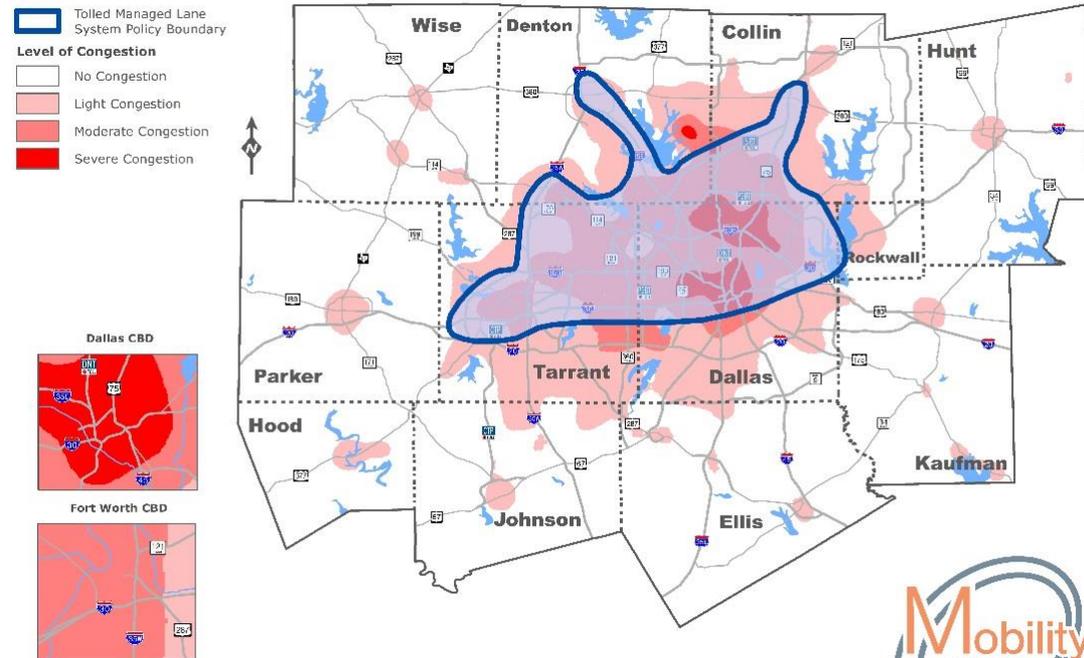
Toll Managed Lane System

- Increase Auto Occupancy
- Corridor Traffic Management
- Strategic Investment
- Policy for Toll Managed Lane System Boundary

For more information:

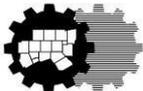
<https://www.nctcog.org/trans/manage/congestion-management-process>

Tolled Managed Lane System Policy Boundary



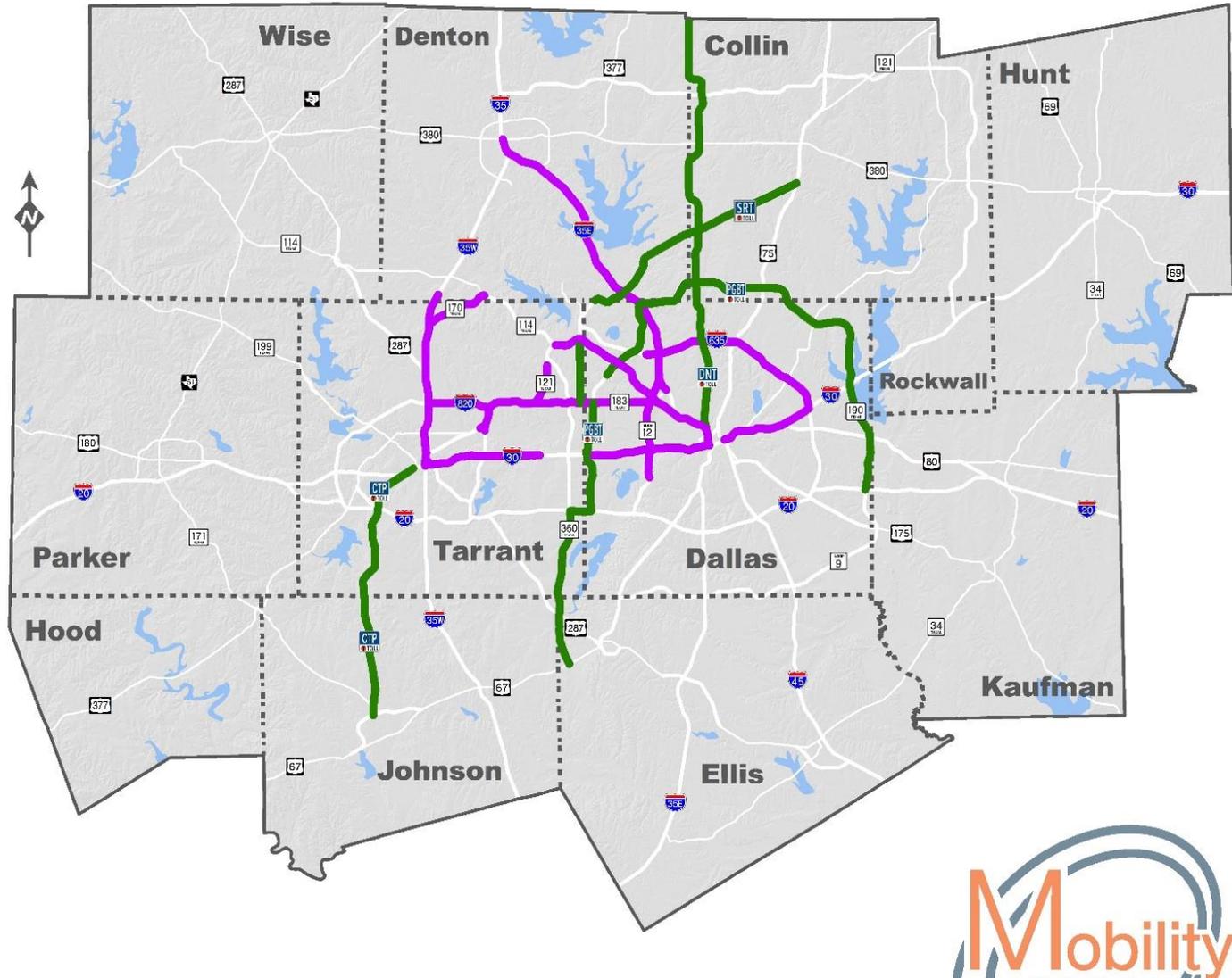
Cost of Congestion/Delay: \$12.1 billion

Level of Congestion areas and Cost of Congestion represent conditions in year 2018.
Level of Congestion is based on a percent increase in travel time.



Priced Facilities

-  Toll Roads
-  Managed Lanes

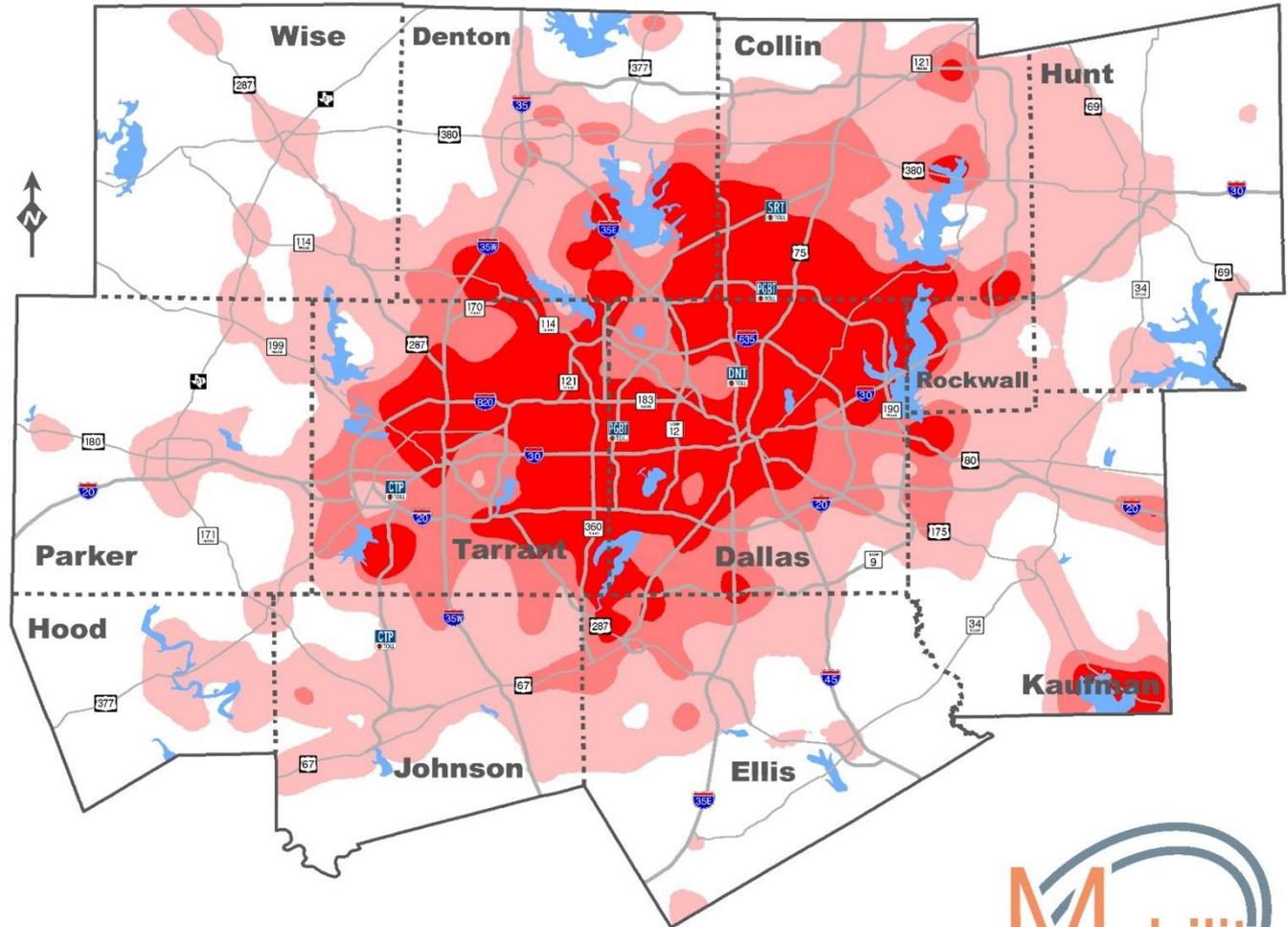


Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics will be determined through ongoing project development.

2045 Levels of Congestion/Delay

2040 Network without TEXpress Lanes

- No Congestion
- Light Congestion
- Moderate Congestion
- Severe Congestion



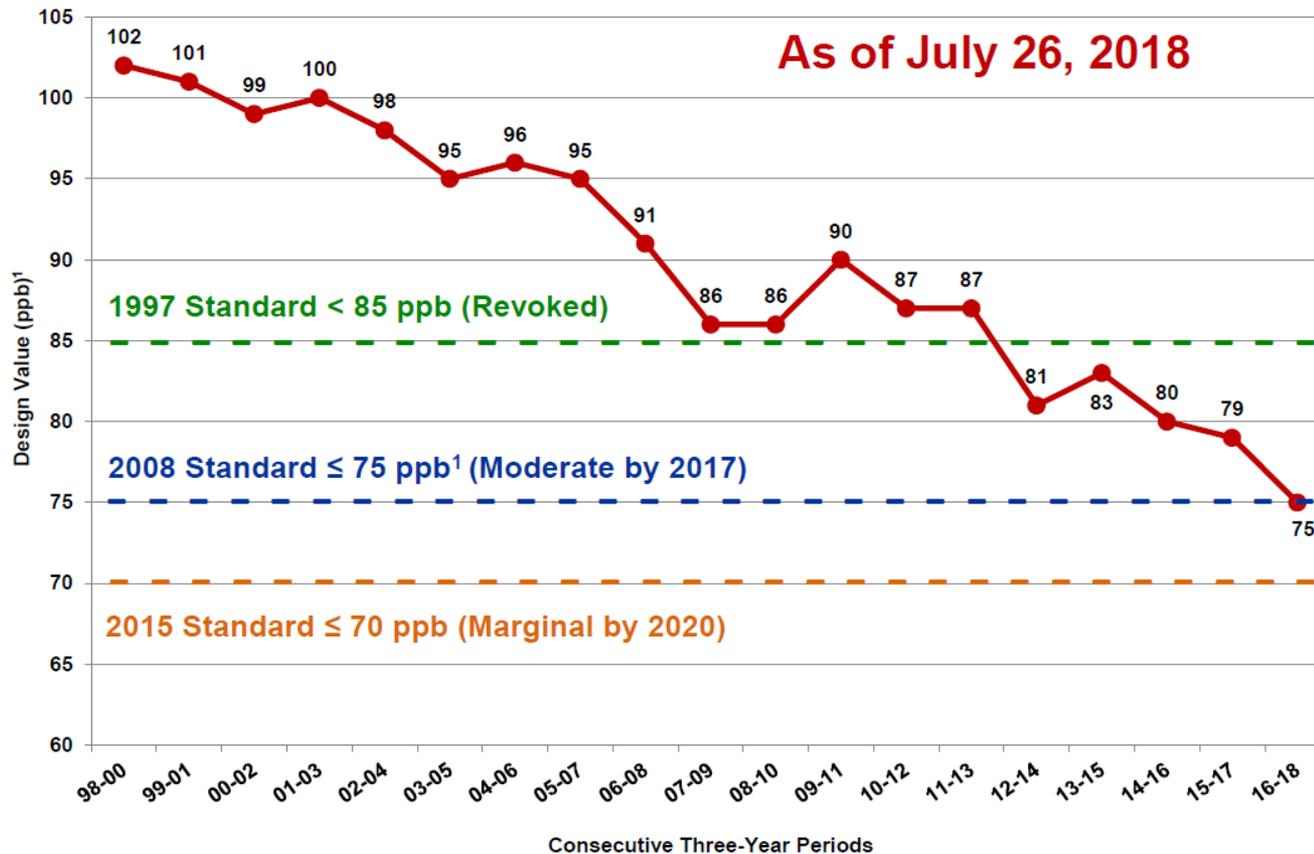
Cost of Congestion/Delay: \$31.6 billion

Congestion Index is based on a percent increase in travel time.



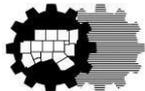
Air Quality Emission Trends

8-HOUR OZONE NAAQS HISTORICAL TRENDS

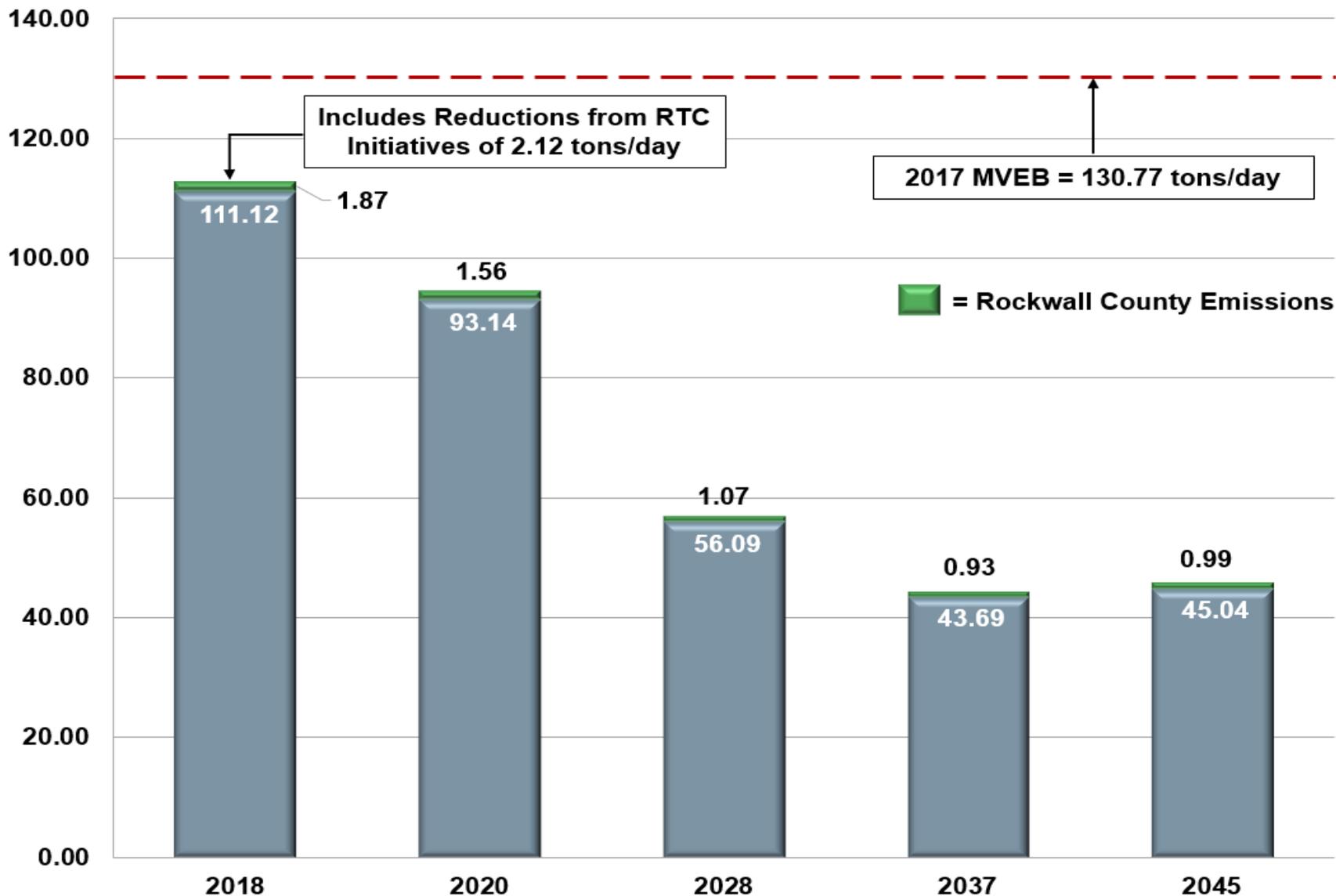


¹Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the *Design Value* (three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is equal to or less than 75 parts per billion (ppb).

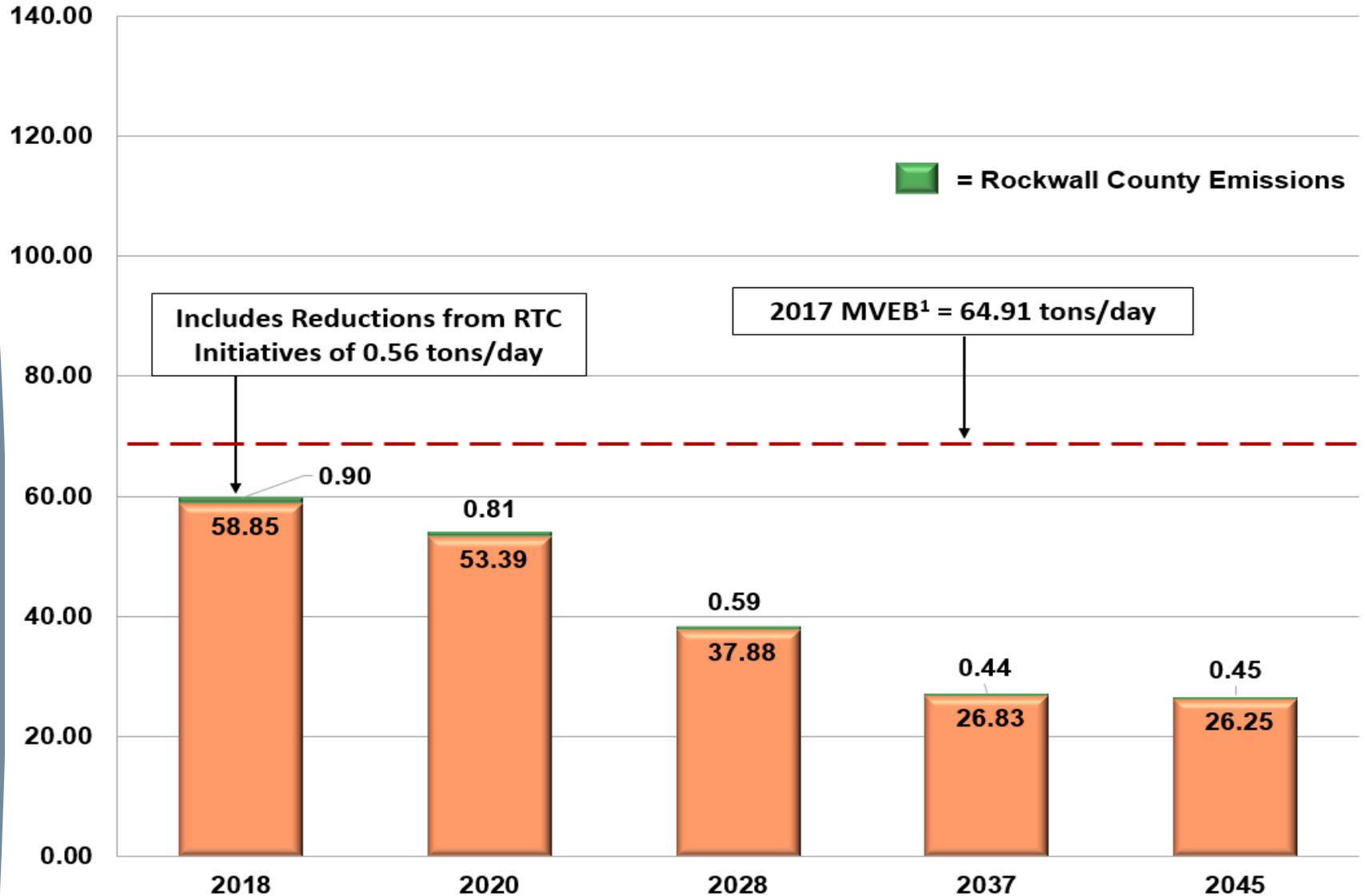
Source: NCTCOG TR Dept



2018 Transportation Conformity Nitrogen Oxides (NO_x) Emission Results



2018 Transportation Conformity Volatile Organic Compounds (VOC) Emission Results



Regional Performance Measures

Federal legislation passed in 2012 introduced a new requirement to incorporate a performance-based approach into the transportation planning process.

Performance-based approach: set coordinated targets, report on a required set of performance measures, and prioritize projects.

Required Performance Measures

Safety

Pavement and Bridge Condition

System Performance/
Freight/Congestion
Mitigation and Air Quality

Transit Asset Management

Additional Performance Measures

Observed System Performance
(beyond rulemaking)

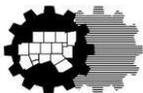
Forecasted System Performance

Environmental Justice

Air Quality

Active Transportation

Freight Movement



For more information: <https://www.nctcog.org/nctcg/media/Transportation/DocsMaps/Plan/MTP/8-0-Regional-Performance.pdf>

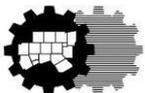
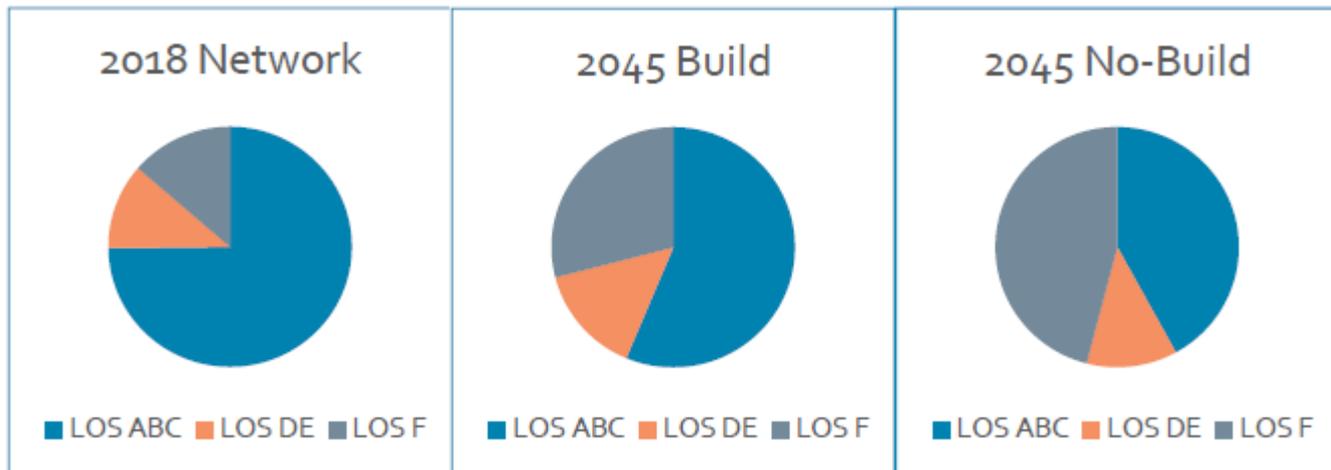


Regional Performance Measures

Regional System Performance

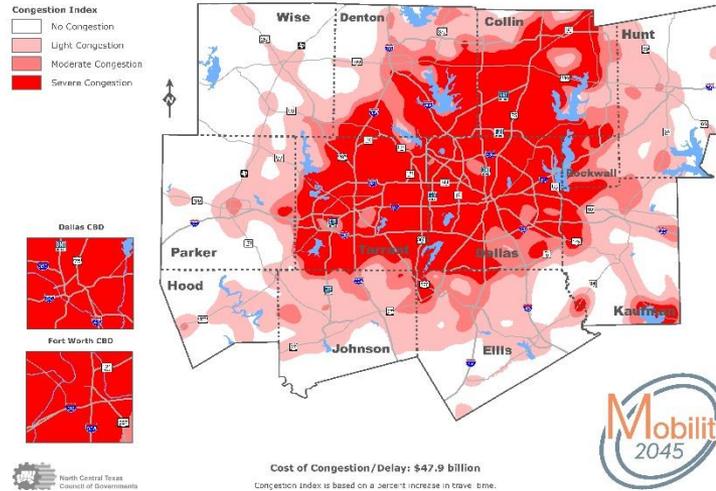
Regional System Performance	2018	2045	No-Build
Population	7,429,723	11,246,531	11,246,531
Employment	4,793,363	7,024,227	7,024,227
Vehicle Miles of Travel (Daily)	212,232,952	331,495,638	332,500,169
Hourly Capacity (Miles)	44,794,000	54,330,341	44,297,513
Vehicle Hours Spent in Delay (Daily)	1,680,685	3,788,105	6,654,772
Increase in Travel Time Due to Congestion	40.94%	59.32%	101.65%
Annual Cost of Congestion (Billions)	\$12.1	\$27.3	\$47.9

Lane Miles at Level of Service ABC, DE, and F

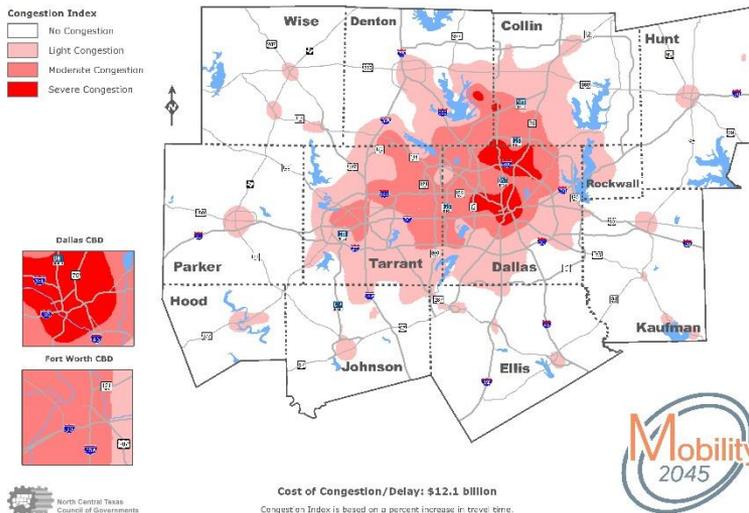


Levels of Congestion/Delay: 2018 & 2045 Build vs. No Build Scenarios

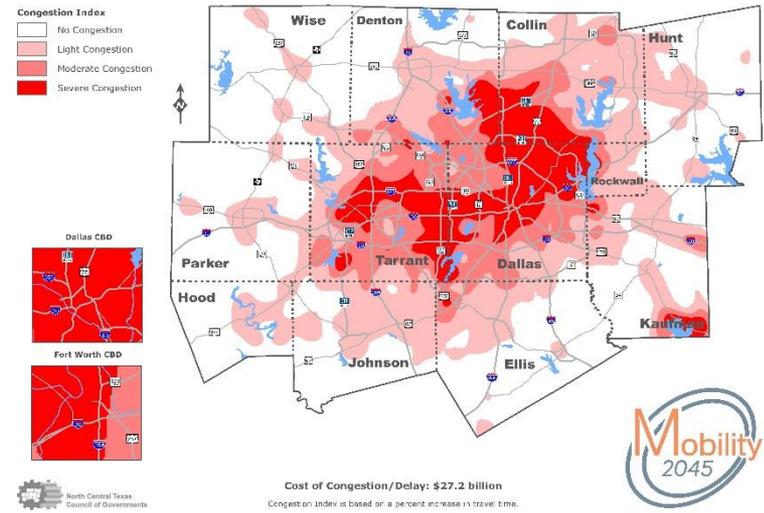
2045 No-Build Levels of Congestion/Delay



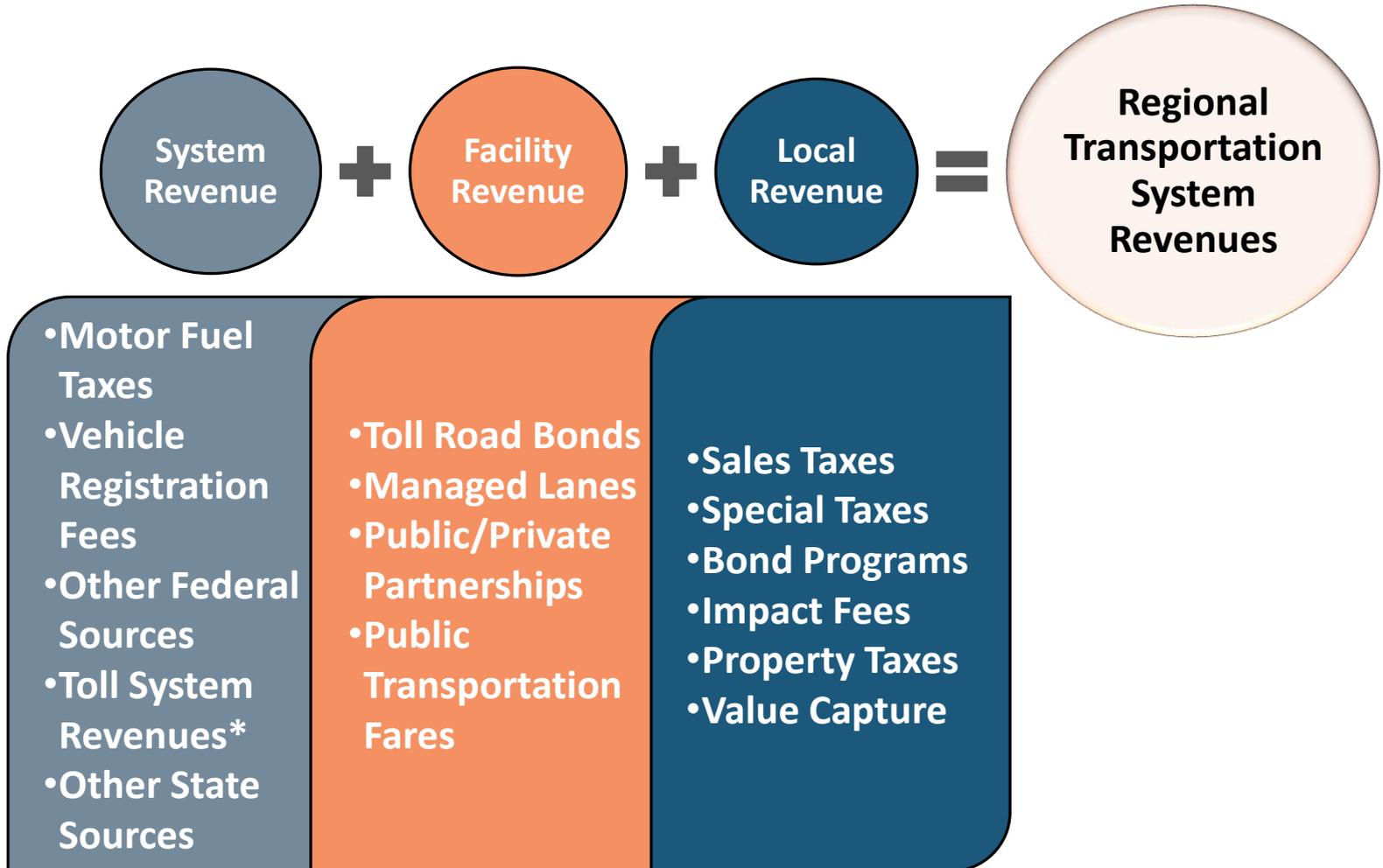
2018 Levels of Congestion/Delay



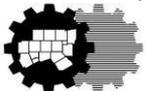
2045 Levels of Congestion/Delay



Transportation Funding Basics



*Revenue from existing NTTA facilities after bonds are retired.

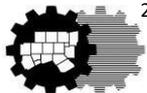


Mobility Plan Expenditures



¹ Actual dollars, in billions. Values may not sum due to independent rounding.

² Balances to reasonably expected revenue, demonstrating financial constraint.



Mobility 2045 Summary

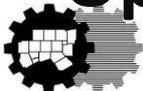
Social Considerations

- Approximately 1 million people per decade have been added to the region since 1970
- Population Forecasts/Density
- Employment Growth/Forecasts
- Population Profile Changes
- Culture Trends
- Nondiscrimination Efforts (Environmental Justice)

Environmental Considerations

- Travel Demand Management
- Transportation System Safety
- Transportation System Security
- Sustainable Development

Operational Efficiency



Mobility 2045 Summary

Mobility Options

- Active Transportation
- Regional Aviation
- Freight Planning



Mobility Options in North Central Texas

Source: NCTCOG

Transportation Technology

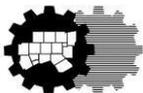
- Vehicle Automation
- Vehicle Electrification
- Shared Mobility



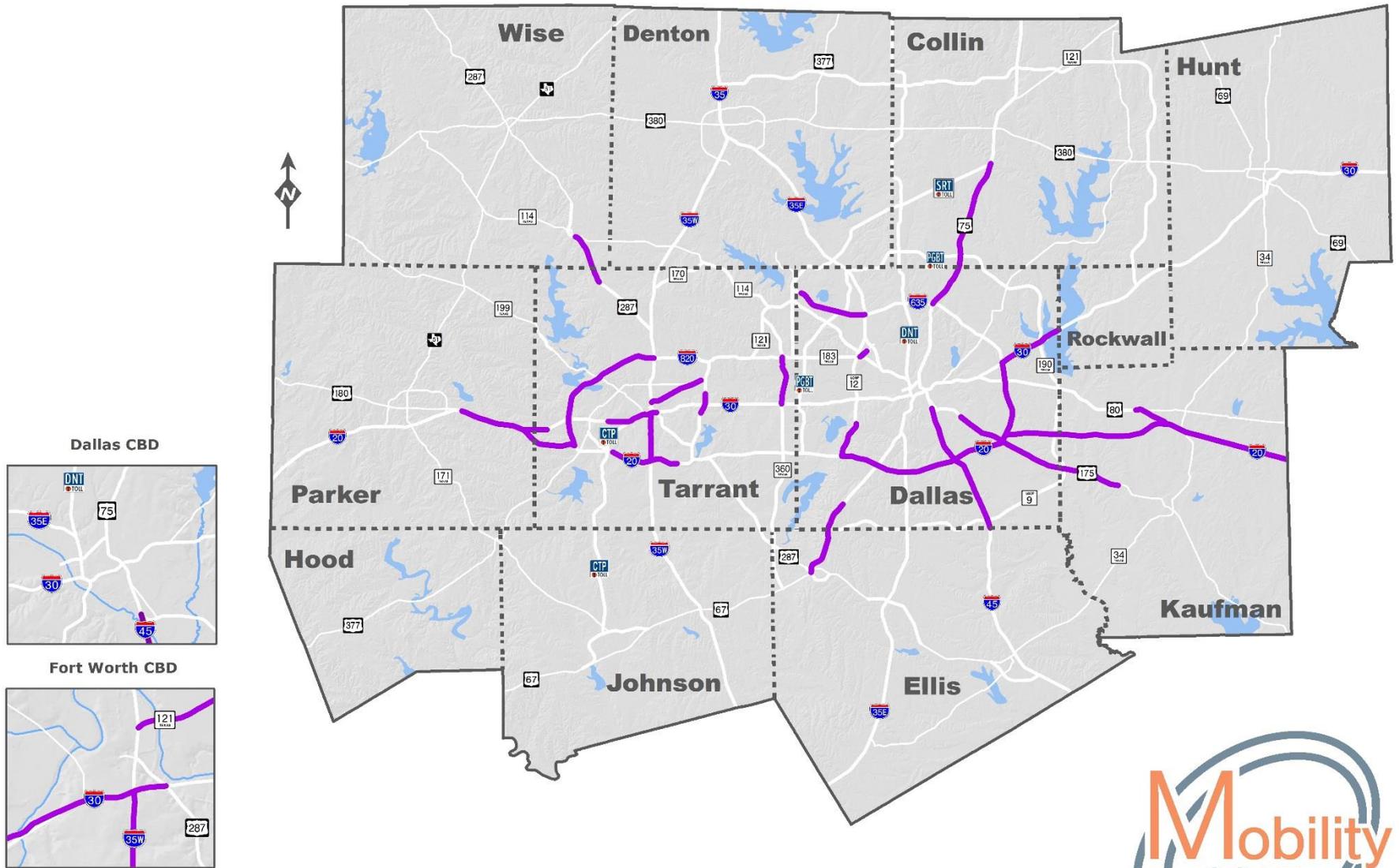
The city of Arlington operates the Milo autonomous vehicle during events in the Entertainment District.

Source: City of Arlington

Policies and Programs



Asset Optimization Recommendations



Dallas CBD

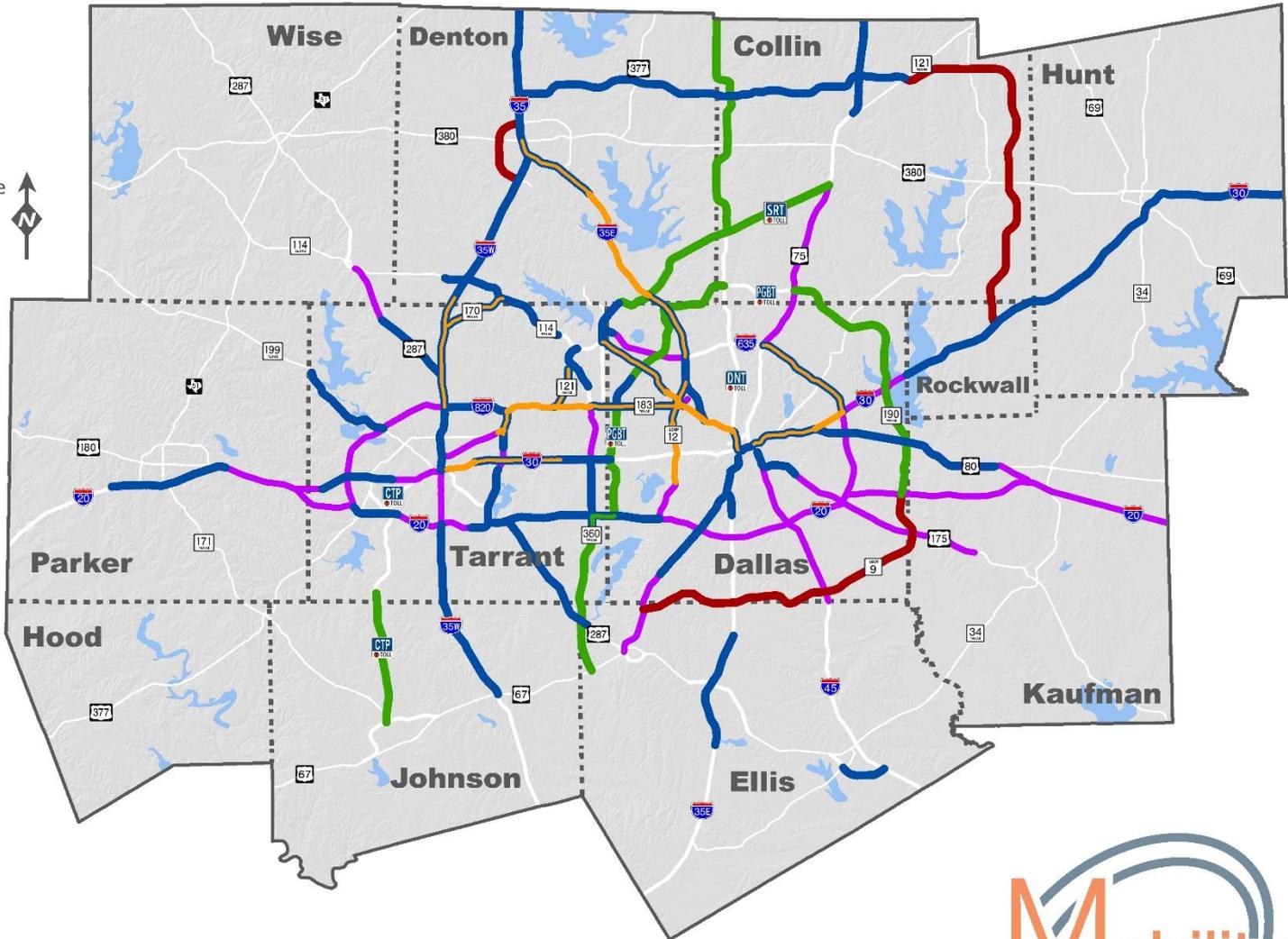


Fort Worth CBD



Major Roadway Recommendations

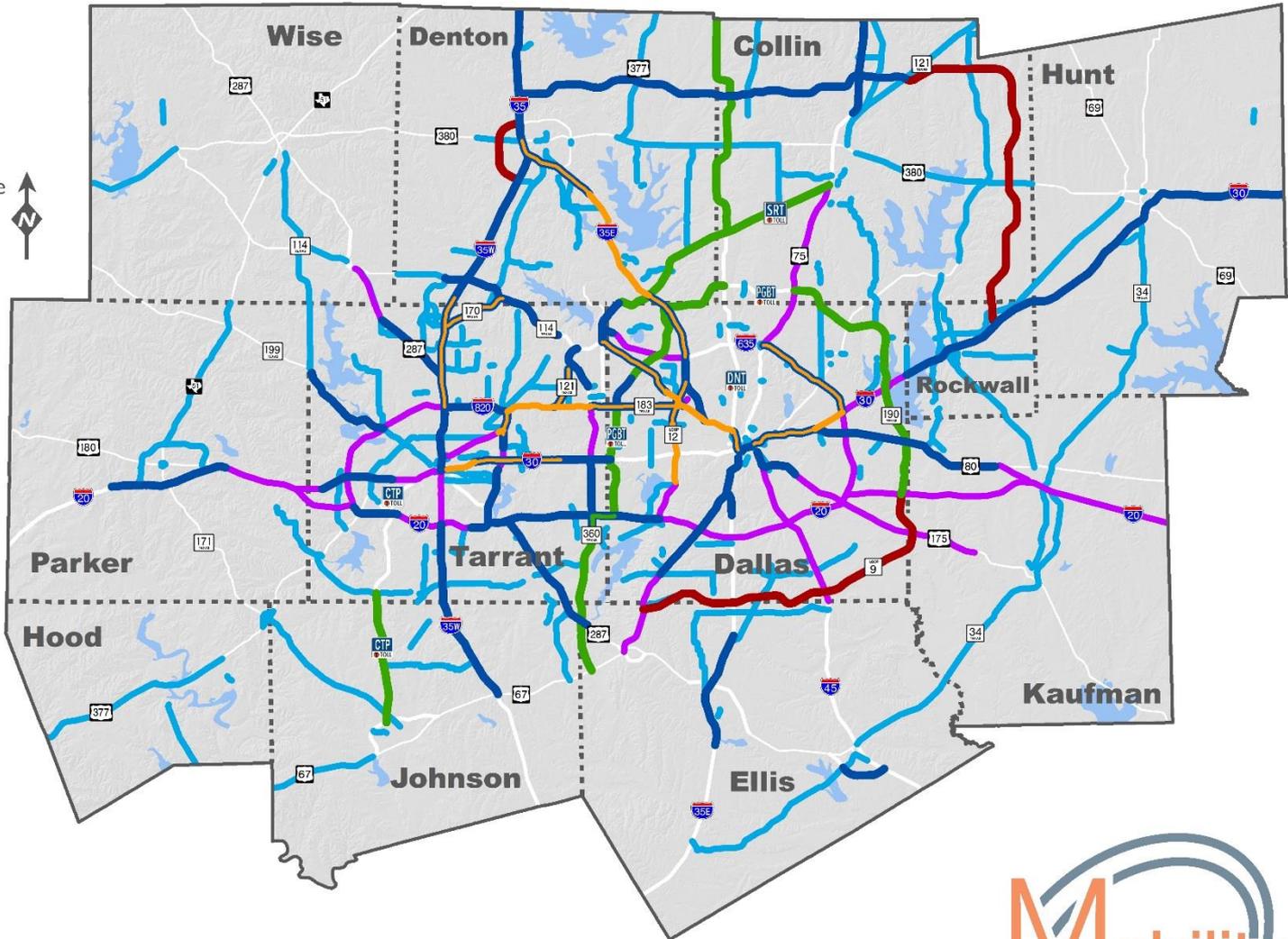
-  New or Additional Freeway Capacity
-  New or Additional Managed Lane Capacity
-  New or Additional Toll Road Capacity
-  Staged Facility (Frontage Roads)
-  Asset Optimization



Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics will be determined through ongoing project development.

Roadway Recommendations

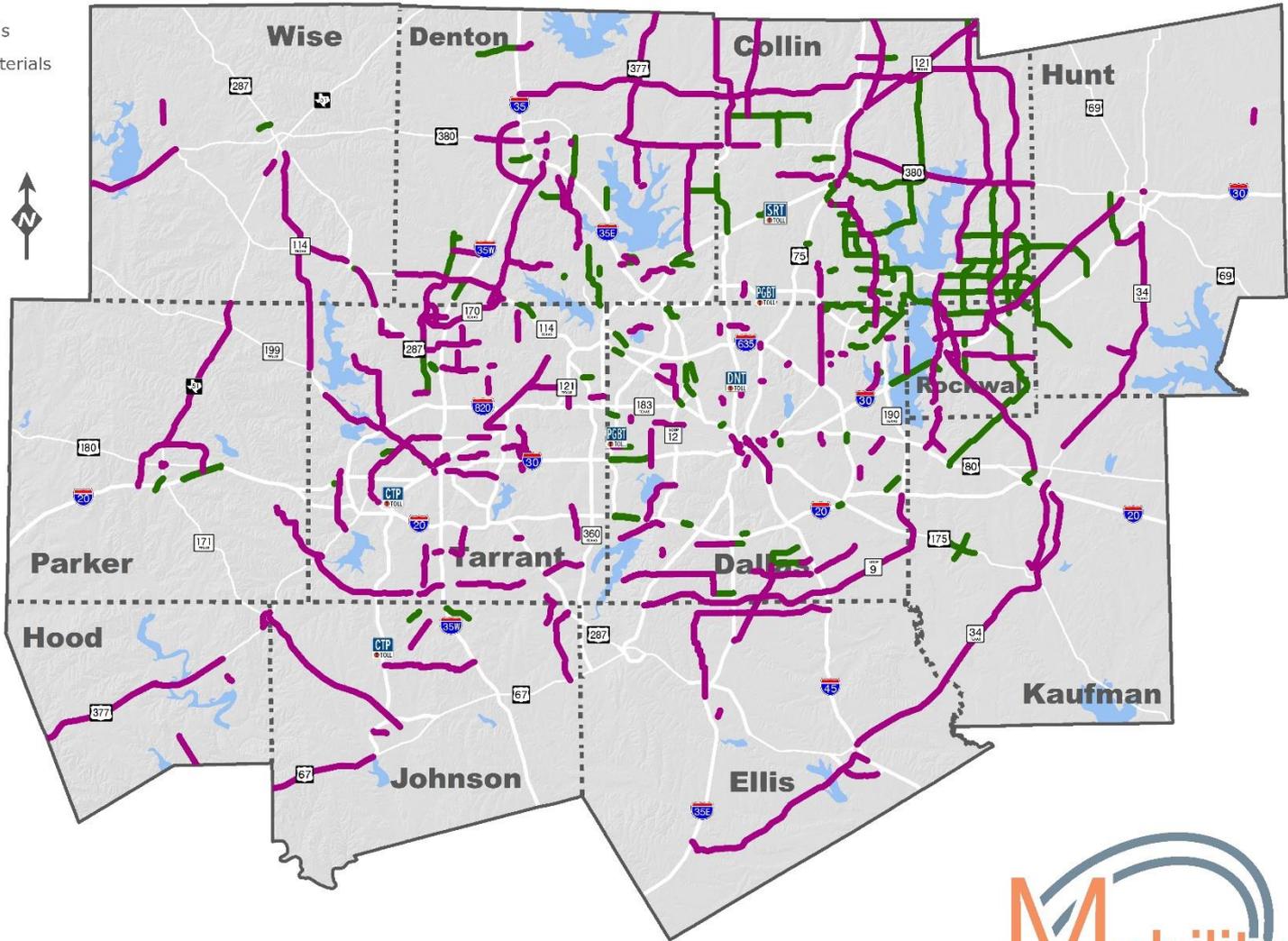
-  New or Additional Managed Lane Capacity
-  New or Additional Freeway Capacity
-  New or Additional Toll Road Capacity
-  Staged Facility (Frontage Roads)
-  Asset Optimization
-  Arterial Capacity Improvement



Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics will be determined through ongoing project development.

Arterial Capacity Improvements

- Regionally Significant Arterials
- Non-Regionally Significant Arterials

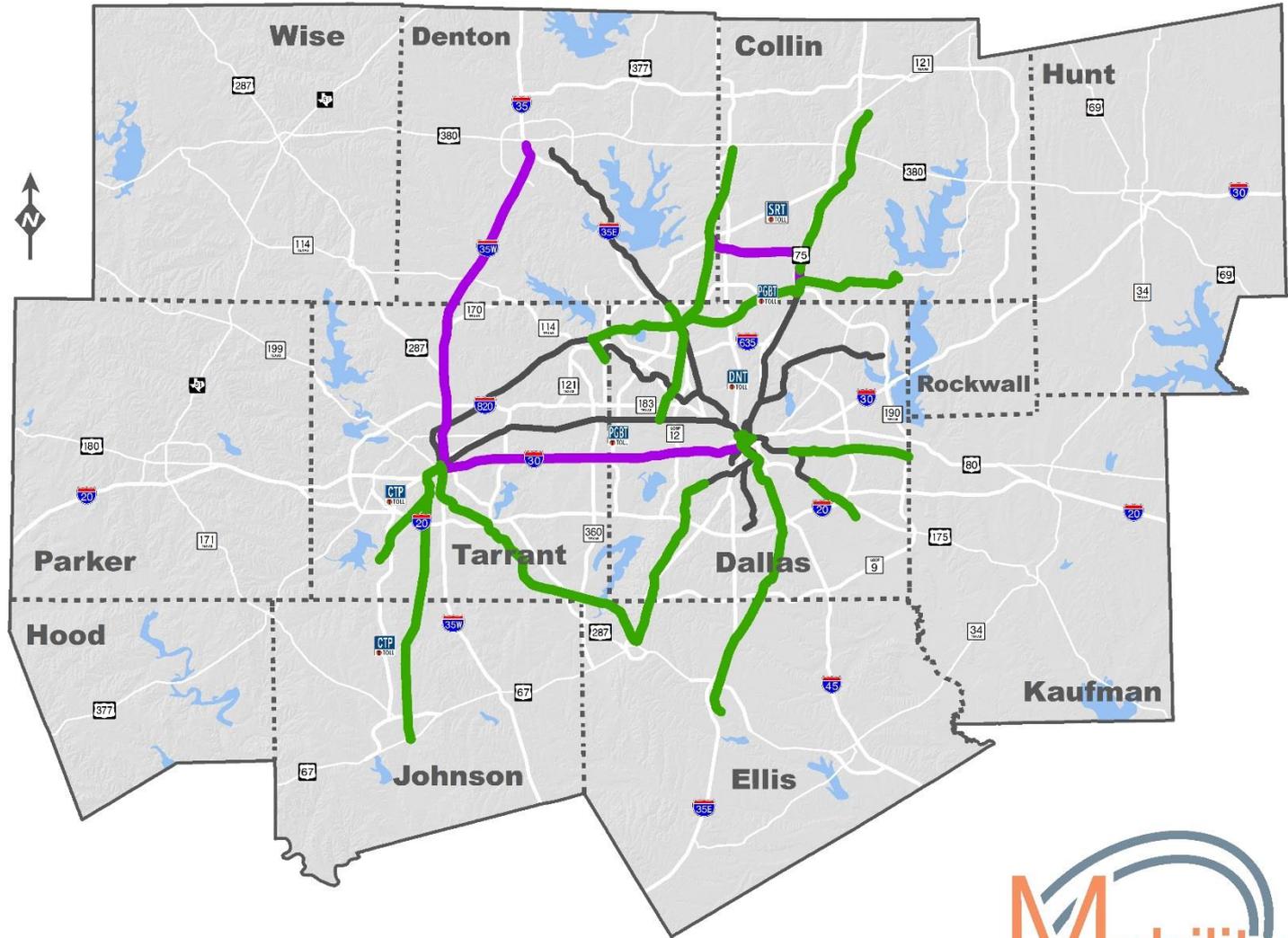


Lines on this map depict arterials with funds for improvement. Facility recommendations indicate transportation need. Corridor-specific alignment, design, and operational characteristics will be determined through ongoing project development.



Major Transit Corridor Recommendations

-  Recommended Rail
-  Existing Rail
-  Recommended High-Intensity Bus



Contact Information

To find out more about Mobility 2045:

<https://www.nctcog.org/trans/plan/mtp/2045>

Email questions or comments to:

mobilityplan@nctcog.org

