

NORTH/SOUTH ROADWAY NEEDS AND OPPORTUNITIES

February 16, 2017 – 1:00pm

McKinney City Hall

McKinney, Texas



North Central Texas Council of Governments

COLLIN COUNTY ROADWAY ACTION PLAN

WELCOME + INTRODUCTIONS

NCTCOG STAFF

Michael Morris, P.E. - Director of Transportation

Dan Lamers, P.E. - Senior Program Manager

Kevin Feldt, AICP - Program Manager

Jeff Neal - Program Manager

Chris Reed - Senior Transportation Planner

NCTCOG OVERVIEW

The North Central Texas Council of Governments (NCTCOG), through its Transportation Department, is the federally designated Metropolitan Planning Organization (MPO) that conducts regional transportation planning in North Central Texas.

MPO Activities are Led by:

- NCTCOG Executive Board – Fiscal Administration

- Regional Transportation Council (RTC) – Policy and Funding Administration

- Several Technical Committees

Major Responsibilities Include:

- Metropolitan Transportation Plan

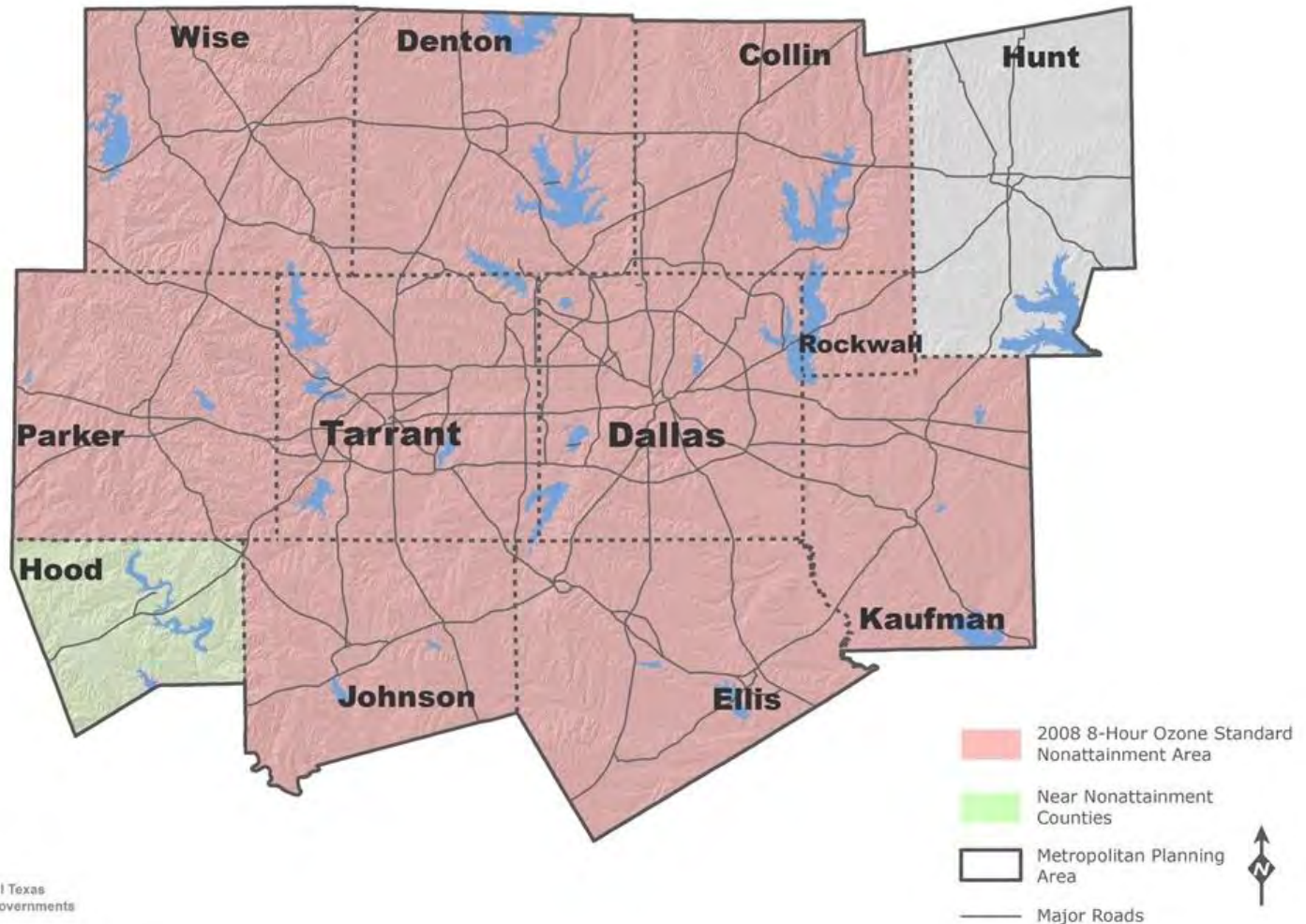
- Transportation Improvement Program

- Unified Planning Work Program

- Congestion Management Process

- Air Quality Conformity

NCTCOG METROPOLITAN PLANNING AREA WITH 8-HOUR OZONE NONATTAINMENT AREA



TEN YEAR PLAN PROJECT FUNDING

TEN YEAR PLAN (HOUSE BILL 20)

An annual collaborative performance-based apparatus for local governments and MPOs to assist the Texas Department of Transportation (TxDOT) in selecting and prioritizing roadway projects for the statewide Unified Transportation Program (UTP). The North Central Texas regional project list was approved by the RTC in December 2016.

Collin County Roadway Action Plan Projects:

North/South Corridors – \$200,000,000

Regional Outer Loop (DNT – SH 121) – \$100,000,000

Regional Outer Loop (US 380 – Rockwall C/L) – \$50,000,000

US 380/McKinney Bypass – \$252,000,000

Complimentary Projects for North/South Corridors:

FM 2478 (FM 1461 – US 380) – \$32,600,000

FM 2514 (Lavon Pkwy. – Brown Street) – \$26,796,024

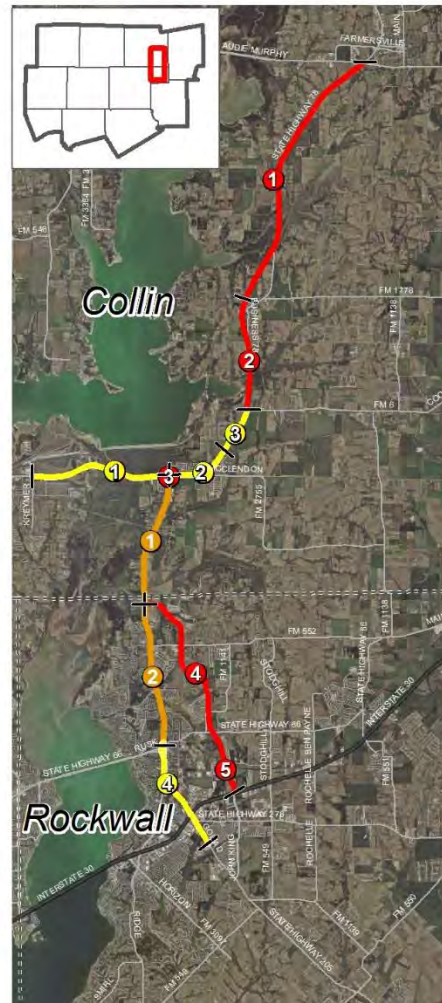
FM 2551 (FM 2170 – FM 2514) – \$38,099,111

SH 205 (SH 78 – Rockwall C/L) – \$28,654,950

SH 205 (Collin C/L – SH 66) – \$32,115,673

STRATEGIC REVIEW

North/South Arterial and Intersection Projects Collin and Rockwall Counties



Completed/Under Construction

1. **SH 78 – Spring Creek Parkway to SH 205**
Widen to 6 lanes divided (\$21,334,008)
Completion Spring 2017
2. **SH 78 – SH 205 to Business SH 78 (Lavon)**
Widen to 6 lanes divided (\$14,839,307)
Completion Fall 2016
3. **SH 78 – Business SH 78 (Lavon) to FM 6**
Widen to 6 lanes divided (\$9,993,504)
Completion Fall 2016
4. **SH 205 – Olive Street (N of SH 66) to Sids Road (Relocated SH 276)**
Widen to 6 lanes divided (\$16,739,331)
Completion Spring 2010

Planned/Funded Construction

1. **SH 205 – SH 78 to Rockwall C/L**
Widen to 6 lanes divided
FY 2017-2026 10-Year Plan (\$28,654,950)
2. **SH 205 – Rockwall C/L to Olive Street (N of SH 66)**
Widen to 6 lanes divided (N of John King Blvd)
Widen to 4 lanes divided (S of John King Blvd)
FY 2017-26 10-Year Plan (\$32,115,673)

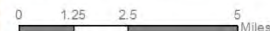
Unfunded Need

1. **SH 78 – US 380 to FM 1778**
Widen to 6 lanes divided
2. **SH 78 – FM 1778 to FM 6**
Widen to 6 lanes divided
3. **SH 78 @ SH 205 Intersection**
Construct grade separation
4. **John King Boulevard – SH 205 to IH 30**
Widen to 6 lanes divided
5. **John King Boulevard – UP R/R Crossing**
Construct grade separation

- Freeway
- Arterial Roads
- - - County Line
- Project Limit Lines

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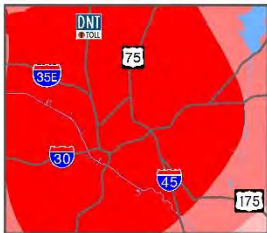
COLLIN COUNTY ROADWAY ACTION PLAN

2017 Levels of Congestion/Delay

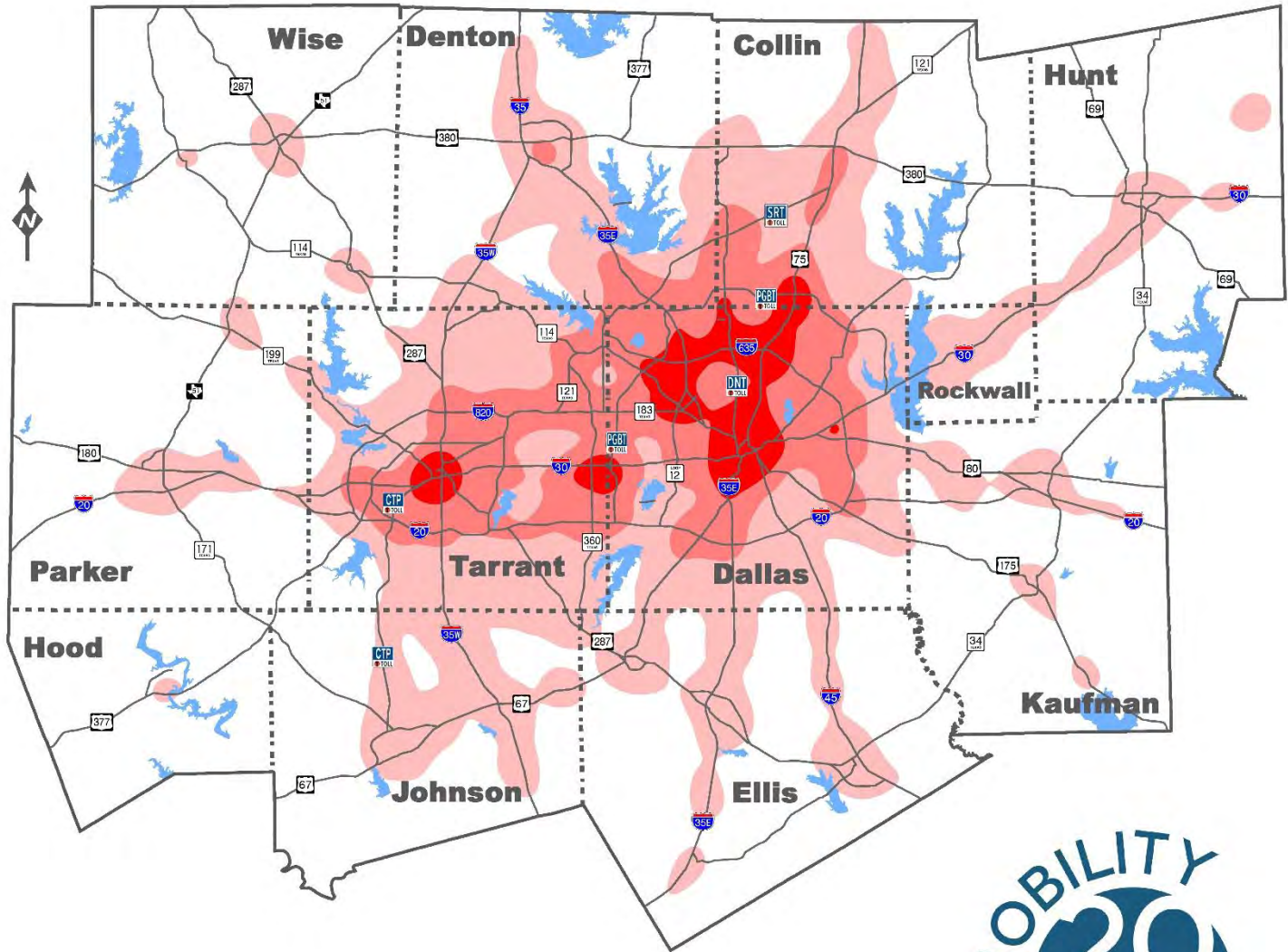
Congestion Index*

-  No Congestion
-  Light Congestion
-  Moderate Congestion
-  Severe Congestion
-  Major Roads

Dallas CBD



Fort Worth CBD



Cost of Congestion/Delay: \$10.7 billion

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



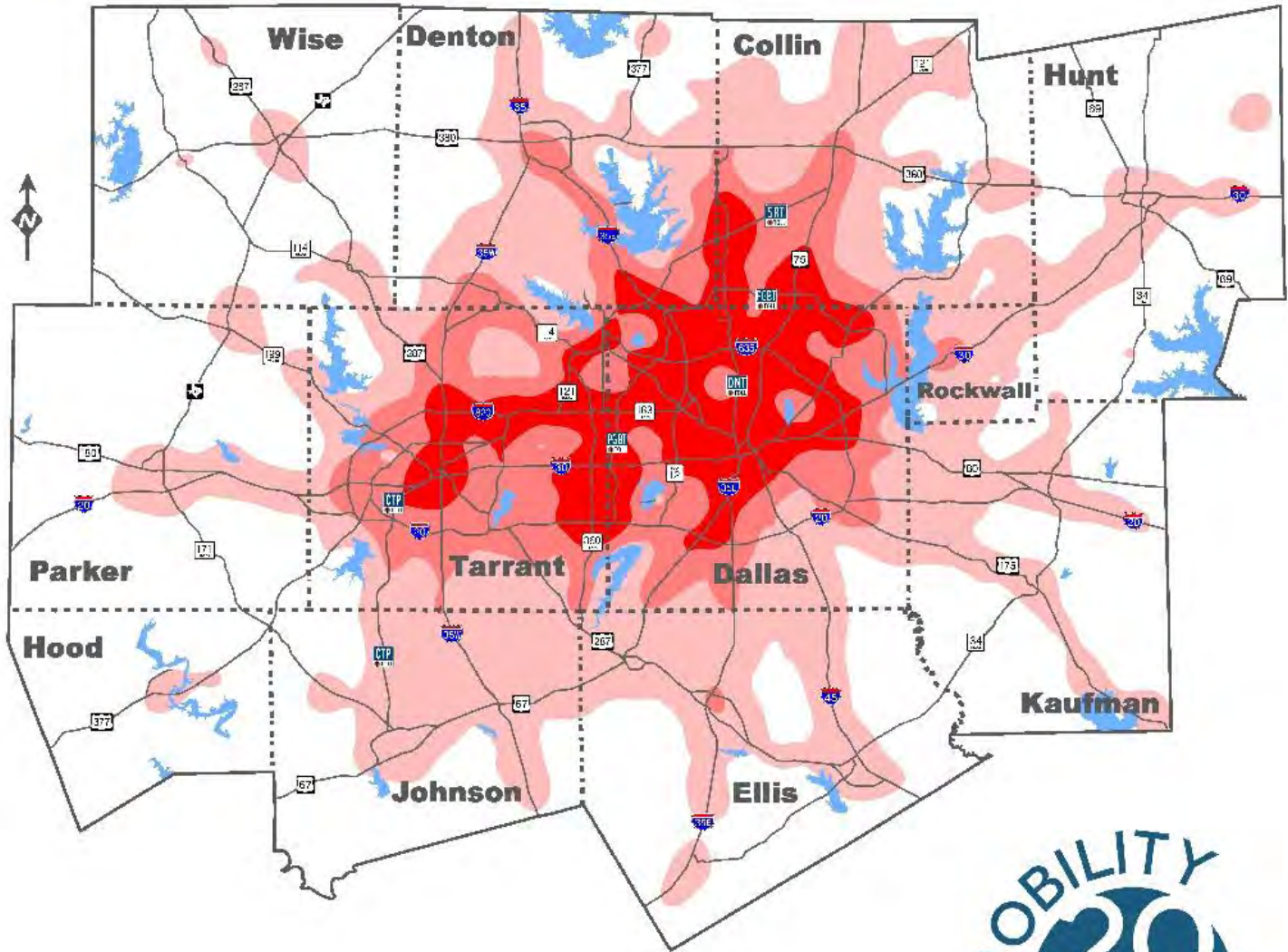
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2040 Levels of Congestion/Delay

No-Build Scenario

Congestion Index*

- No Congestion
- Light Congestion
- Moderate Congestion
- Severe Congestion
- Major Roads



Dallas CBD

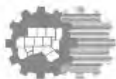


Fort Worth CBD



Cost of Congestion/Delay: \$43.9 billion






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



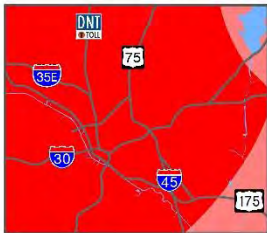
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2040 Levels of Congestion/Delay

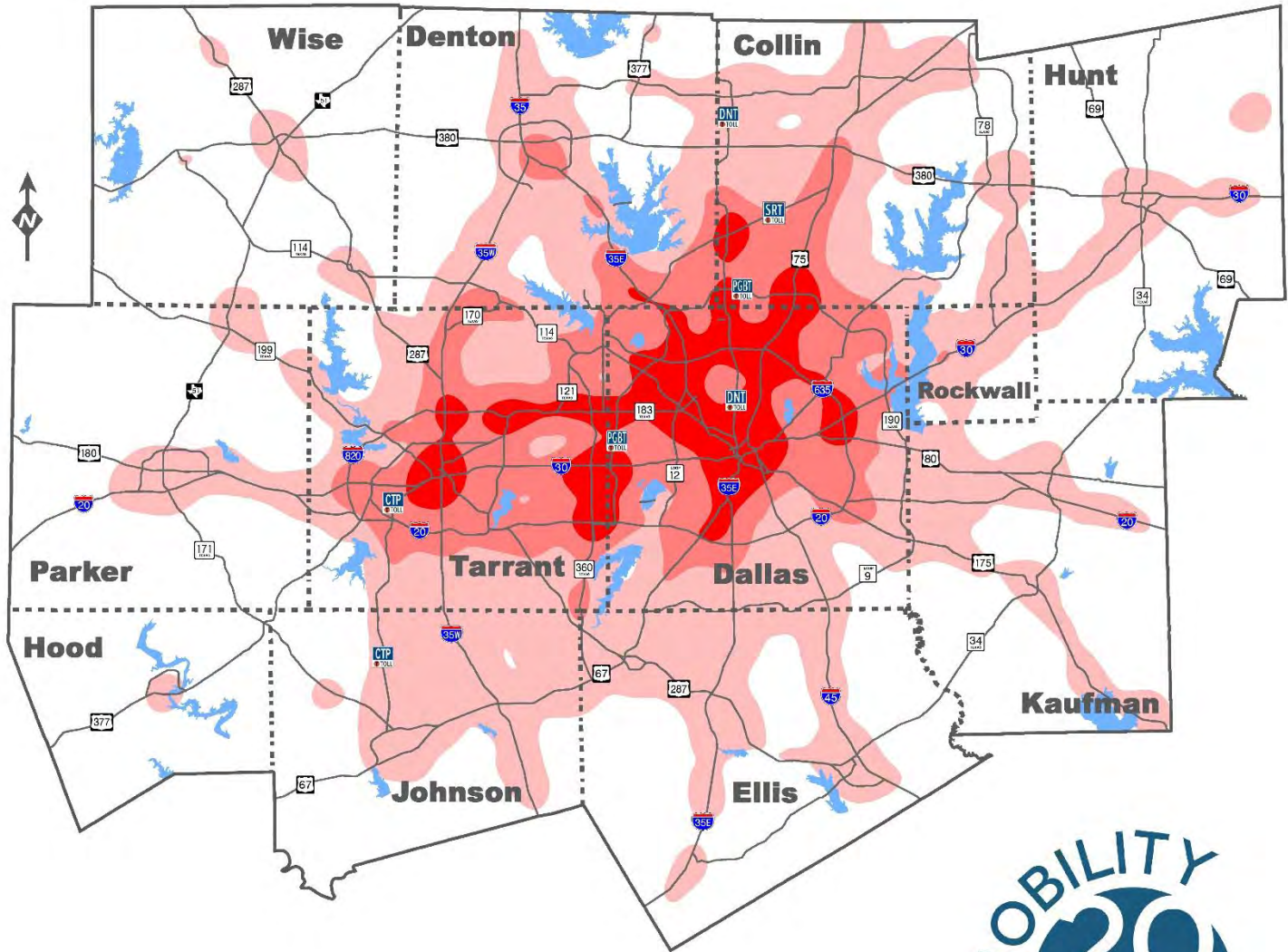
Congestion Index*

-  No Congestion
-  Light Congestion
-  Moderate Congestion
-  Severe Congestion
-  Major Roads

Dallas CBD



Fort Worth CBD



Cost of Congestion/Delay: \$25.3 billion

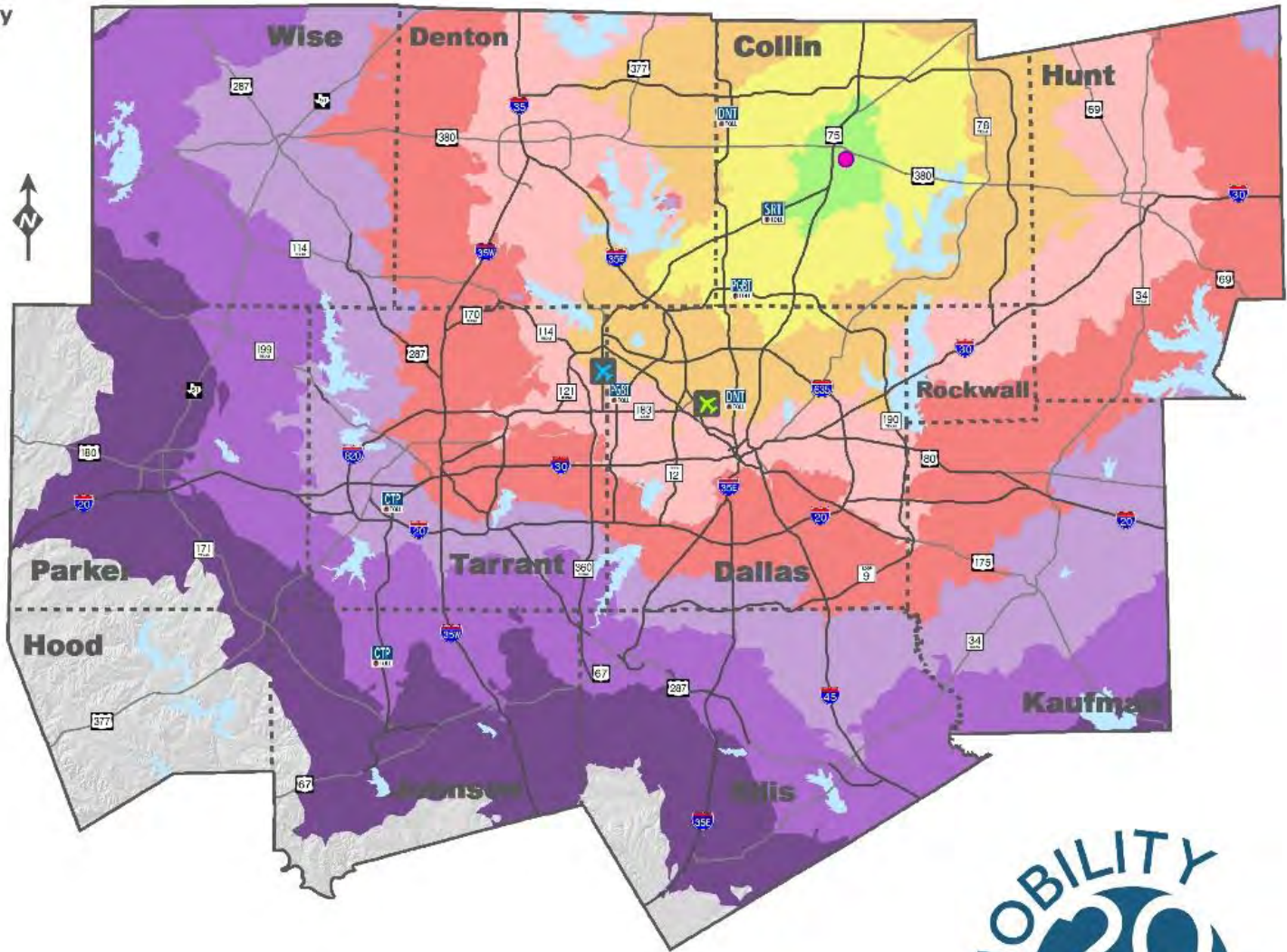
*Congestion Index is based on a percent increase in travel time.



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2040 PM Peak Period Travel Times from McKinney

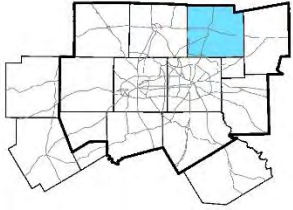
Travel Times from McKinney



COLLIN COUNTY

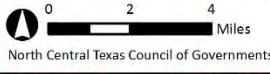
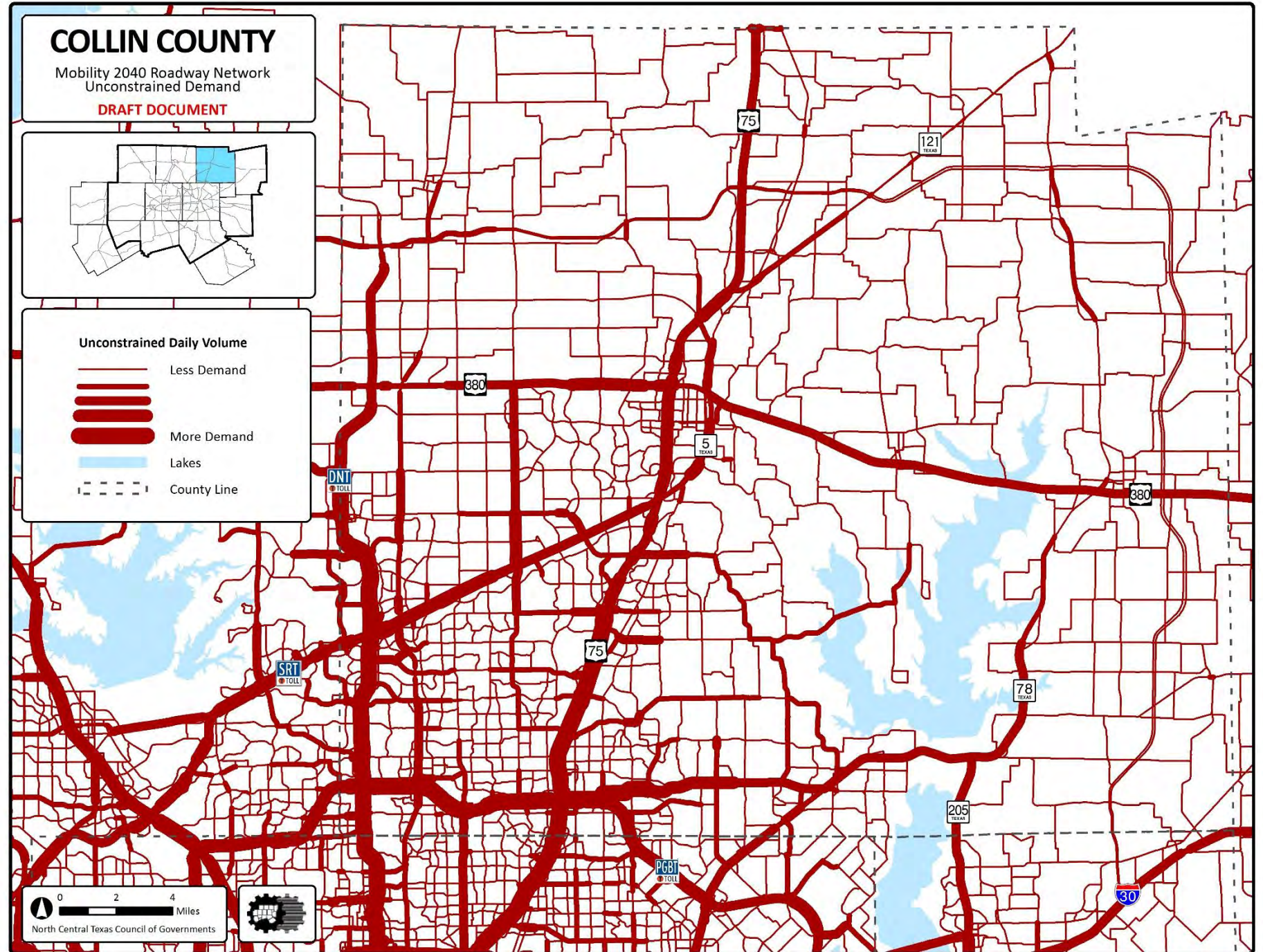
Mobility 2040 Roadway Network
Unconstrained Demand

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Unconstrained Daily Volume

- Less Demand
- More Demand
- Lakes
- County Line



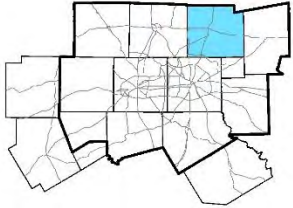
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COLLIN COUNTY

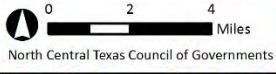
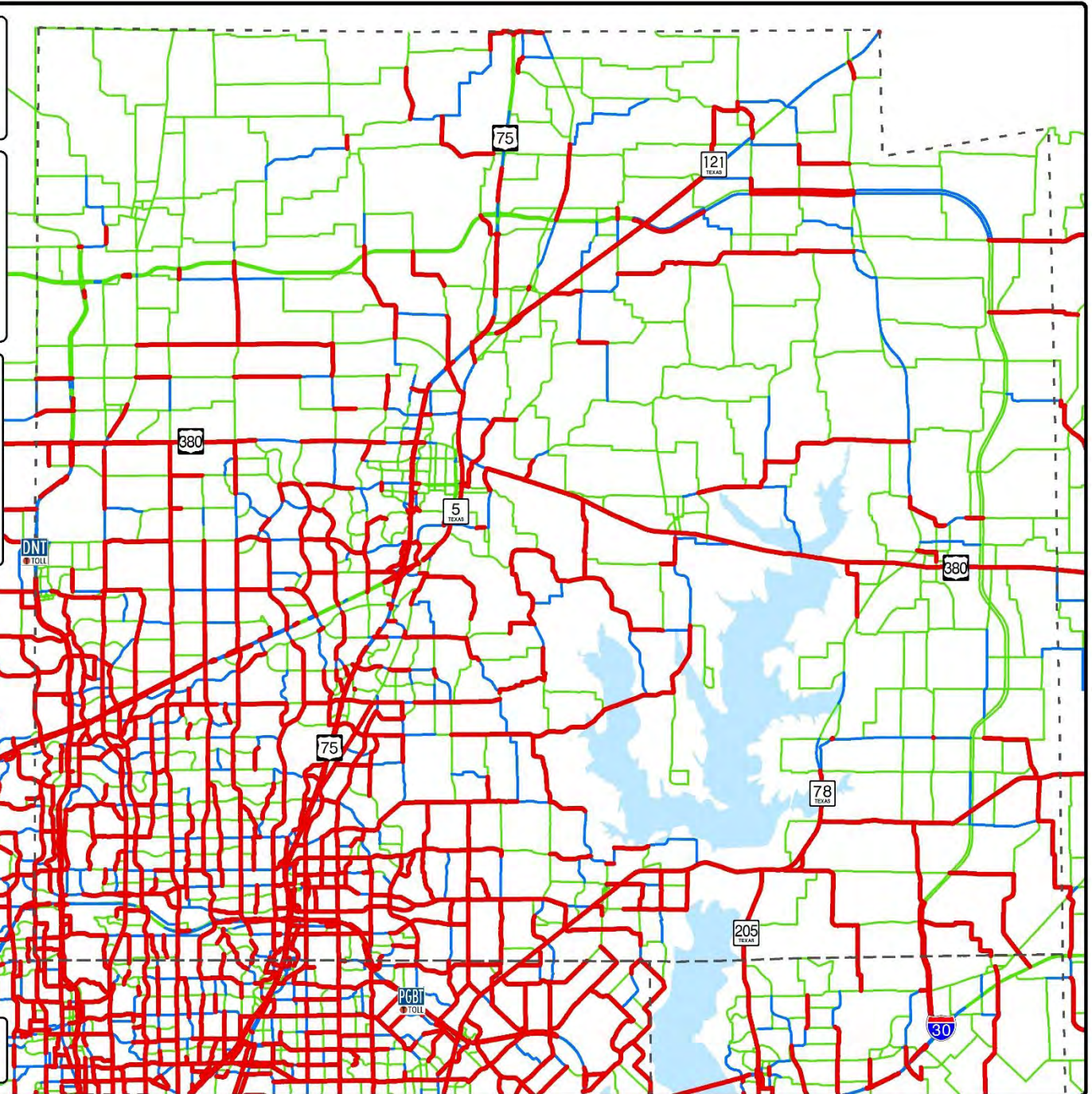
Mobility 2040 Roadway Network
Level of Service

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Daily Level of Service

- ABC
- DE
- F
- Lakes
- County Line



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DRAFT Roadway Action Plan for Collin County **DRAFT**

Corridor 1 (Near Term):
US 75

- Widening in Allen
- PGBT Interchange Ramp Improvement
- Widen Plano Parkway and DART rail bridges
- Technology Lane

Corridor 2 (Near Term):
Collin County Outer Loop

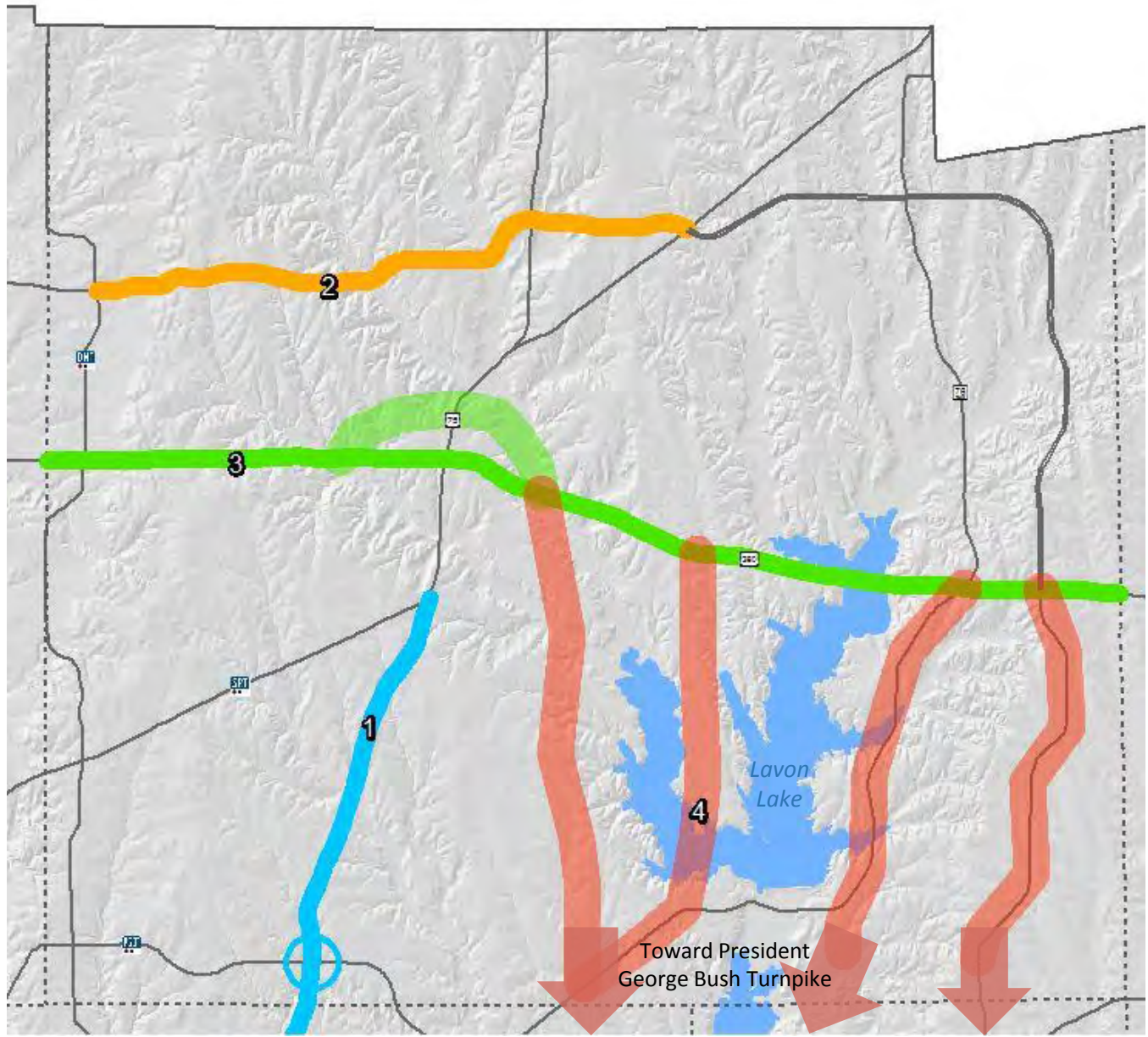
Staged construction of frontage roads

Corridor 3 (Near Term):
US 380

- Countywide Study
- McKinney Bypass

Corridor 4 (Longer Term):
Collin County Strategic Transportation Initiative

Study of non-tolled north/south roadway needs and opportunities



Roadway Action Plan for Collin County

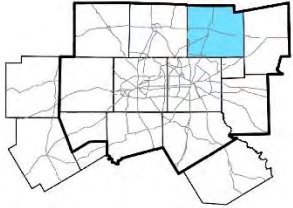
Corridor	Project	Description	Contact
1) US 75 (Near Term)	Widening in Allen	Widen freeway to a continuous 8-lane section through Allen	TxDOT: Kelly Selman
	PGBT interchange ramp improvement	Widen ramps from PGBT to northbound US 75 and US 75 southbound to PGBT	NTTA: TxDOT: Kelly Selman
	Widen Plano Parkway and DART rail bridges	Widen narrow section on US 75 by expanding Plano Parkway and DART rail bridges	TxDOT: Kelly Selman
	Technology Lane	Remove HOV lane and pylons and allow usage of the lane during peak hours and for incident management	NCTCOG: Natalie Bettger TxDOT: Kelly Selman
2) Collin County Outer Loop (Near Term)	Staged construction of frontage roads	Construct one side of frontage road between DNT and SH 121	NCTCOG: Sandy Wesch Collin County: Clarence Daugherty
3) US 380 (Near Term)	Countywide study	Study needs on US 380 from Denton County line to Hunt County line	TxDOT: Kelly Selman
	McKinney Bypass	Study potential of a bypass around northern McKinney for US 380	TxDOT: Kelly Selman
4) Collin County Strategic Transportation Initiative (Longer Term)	Study of non-tolled north/south roadway needs and opportunities	Study north/south transportation needs in the southeastern part of Collin County to enhance the non-tolled roadway grid around Lavon Lake and connections southward to PGBT	NCTCOG: Dan Lamers

NORTH/SOUTH ROADWAY NEEDS AND OPPORTUNITIES






COLLIN COUNTY

Mobility 2040 Roadway Network
North/South Roadway Opportunities









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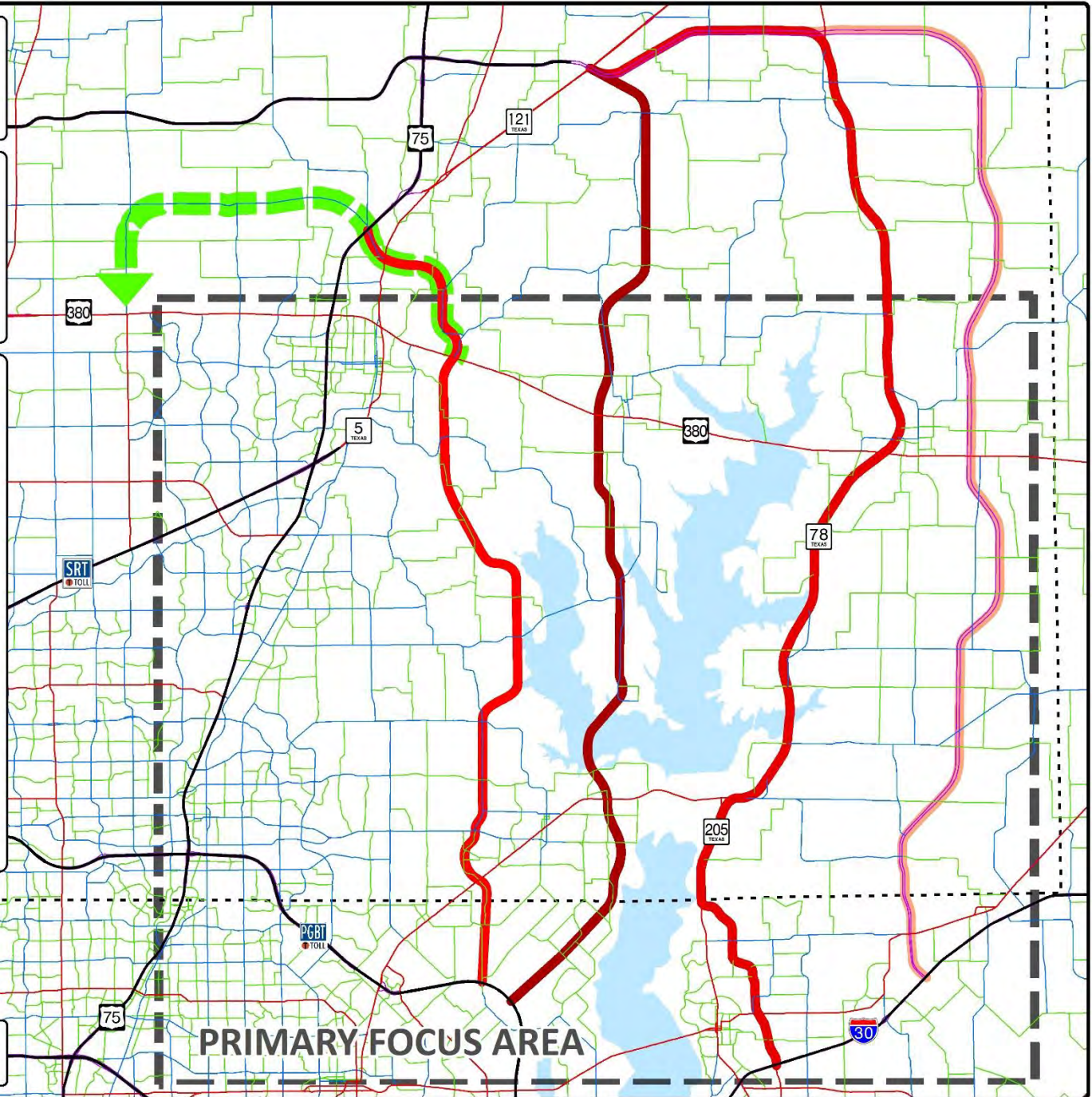


Proposed North/South Roadway Corridors

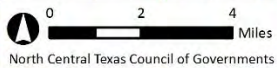
-  West Corridor
-  Lake Corridor
-  SH 78/SH 205/John King Corridor
-  Collin County Outer Loop
-  McKinney Bypass

Year 2040 Roadway Network

-  Freeway, Tollway, Express Lane
-  Principal Arterial
-  Minor Arterial
-  Collector
-  Frontage/Service
-  Focus Area Boundary
-  Counties
-  Lakes



PRIMARY FOCUS AREA



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**North/South
Roadway Model
Assumptions**

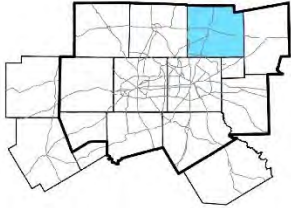
	Classification	Lanes	Speed (MPH)	Limited Access	Future Freeway	Tolled	North Terminus	South Terminus
West Corridor	Principal Arterial	6	45	Potential	Potential	No	US 75	PGBT
Lake Corridor	Principal Arterial	6	45	Potential	Potential	No	Outer Loop/SH 121	PGBT
SH 78/SH 205/John King	Principal Arterial	6*	45-65	Potential	Potential	No	Outer Loop	IH 30
Collin County Outer Loop	Frontage (Staged Facility Configuration)	4	55	Yes	Yes	No	SH 121	IH 30

*SH 205 south of John King Blvd is assumed as 4 lanes per the Rockwall County Thoroughfare Plan.

COLLIN COUNTY

North/South Roadway Opportunities
West Corridor as an Arterial

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----- Screenline

Proposed North/South Roadway Corridors

----- West Corridor

----- Lake Corridor

Functional Classification

----- Freeway, Tollway, Express Lane

----- Principal Arterial

----- Minor Arterial

----- Collector

----- Frontage/Service

----- Lakes

----- County Line

Western Screenline 1
Daily Volume: 549,000
1% Decrease from Mobility 2040 Baseline

Eastern Screenline 1 (To Hunt Co. Line)
Daily Volume: 144,000
4% Increase from Mobility 2040 Baseline

Western Screenline 2
Daily Volume: 445,000
1% Decrease from Mobility 2040 Baseline

Eastern Screenline 2 (To Hunt Co. Line)
Daily Volume: 226,000
4% Increase from Mobility 2040 Baseline

Western Screenline 3
Daily Volume: 533,000
1% Decrease from Mobility 2040 Baseline

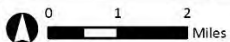
Eastern Screenline 3 (To Hunt Co. Line)
Daily Volume: 517,000
1% Increase from Mobility 2040 Baseline

Daily Volume
18,000

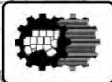
Daily Volume
8,000

Daily Volume
14,000

Daily Volume
36,000



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75

5 TEXAS

380

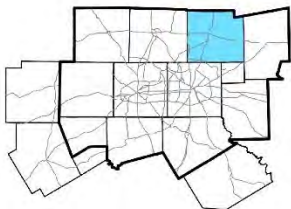
75

78 TEXAS

COLLIN COUNTY

North/South Roadway Opportunities
Lake Corridor as an Arterial

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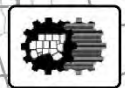
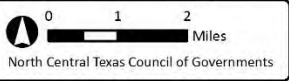
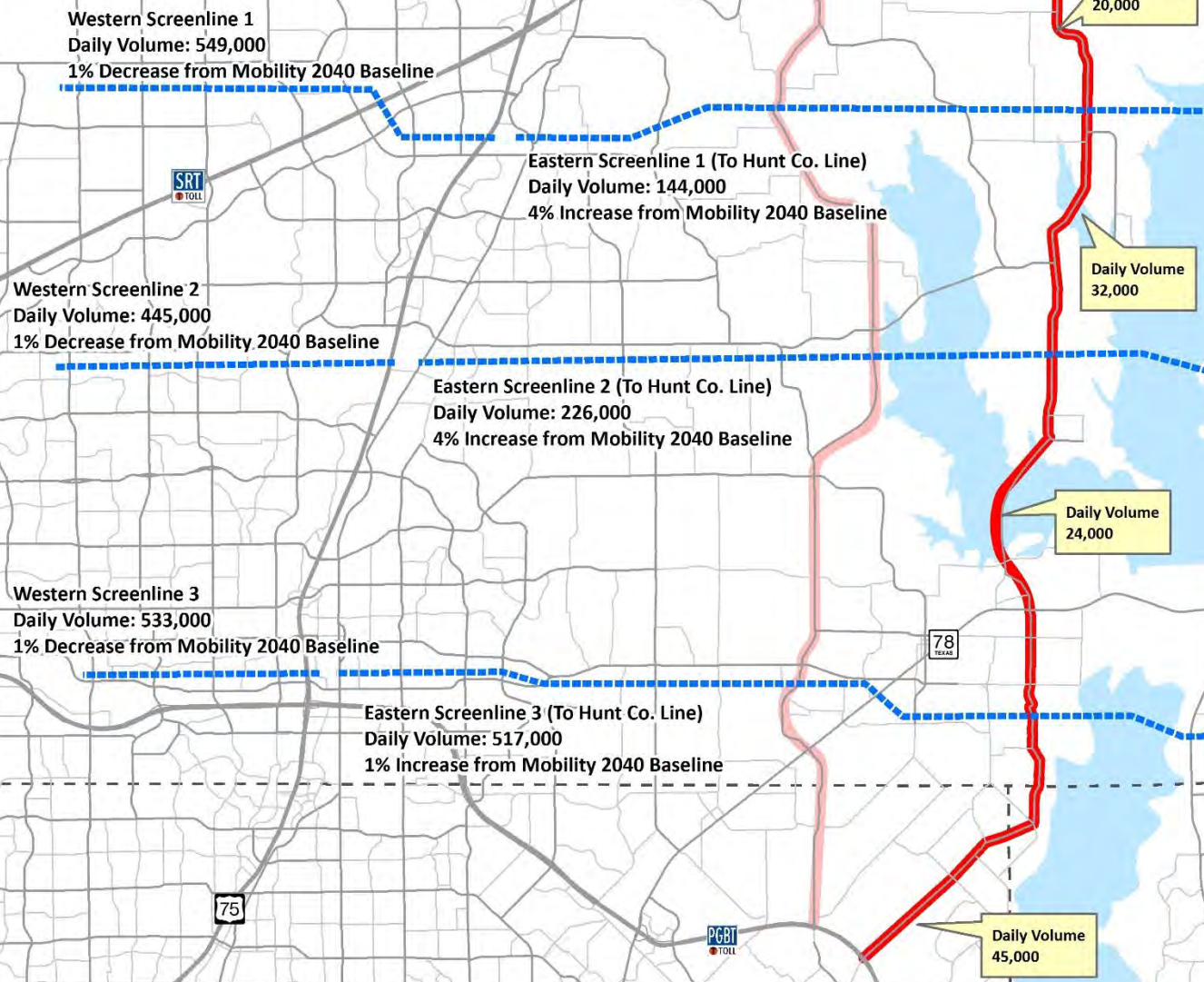
----- Screenline

Proposed North/South Roadway Corridors

----- West Corridor
----- Lake Corridor

Functional Classification

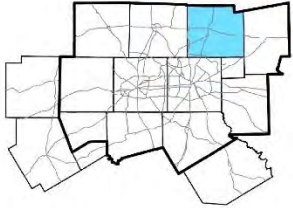
----- Freeway, Tollway, Express Lane
----- Principal Arterial
----- Minor Arterial
----- Collector
----- Frontage/Service
----- Lakes
----- County Line



COLLIN COUNTY

North/South Roadway Opportunities
SH 78/SH 205 Corridors

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--- Screenline

Proposed North/South Roadway Corridors

— SH78/SH 205/John King Corridor

— Other North/South Corridors

Functional Classification

— Freeway, Tollway, Express Lane

— Principal Arterial

— Minor Arterial

— Collector

— Frontage/Service

— Lakes

--- County Line

Eastern Screenline 1 (From SH 5)
Daily Volume: 144,000
4% Increase from Mobility 2040 Baseline

Daily Volume: 22,000
15% Decrease from Mobility 2040 Baseline

Eastern Screenline 2 (From SH 5)
Daily Volume: 226,000
4% Increase from Mobility 2040 Baseline

Daily Volume: 38,000
14% Decrease from Mobility 2040 Baseline

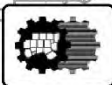
Eastern Screenline 3 (From SH 5)
Daily Volume: 517,000
1% Increase from Mobility 2040 Baseline

Daily Volume: 61,000
9% Decrease from Mobility 2040 Baseline

Daily Volume: 23,000
5% Decrease from Mobility 2040 Baseline

0 1 2 Miles

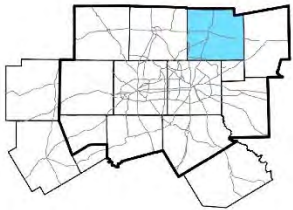
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COLLIN COUNTY

North/South Roadway Opportunities
Collin County Outer Loop

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--- Screenline

Proposed North/South Roadway Corridors

- Collin County Outer Loop
- Other North/South Corridors

Functional Classification

- Freeway, Tollway, Express Lane
- Principal Arterial
- Minor Arterial
- Collector
- Frontage/Service
- Lakes
- County Line

Eastern Screenline 1 (From SH 5)
Daily Volume: 144,000
4% Increase from Mobility 2040 Baseline

Daily Volume: 9,000
13% Decrease from Mobility 2040 Baseline

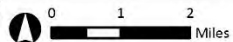
Eastern Screenline 2 (From SH 5)
Daily Volume: 226,000
4% Increase from Mobility 2040 Baseline

Daily Volume: 9,000
10% Decrease from Mobility 2040 Baseline

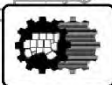
Eastern Screenline 3 (From SH 5)
Daily Volume: 517,000
1% Increase from Mobility 2040 Baseline

Daily Volume: 9,000
11% Decrease from Mobility 2040 Baseline

Daily Volume: 26,000
2% Decrease from Mobility 2040 Baseline



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ADDITIONAL PLANNING CONSIDERATIONS

SH 121 EASTERN ALIGNMENT

Roadway Model Assumptions

6 Lane Freeway

70 Miles per Hour

Non-Tolled Facility

From US 75/Sam Rayburn Tollway to US 380 East of the City of Princeton

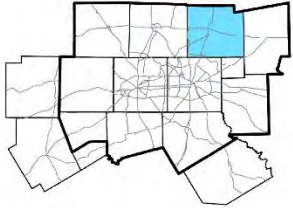
Modeled alignment based on preliminary design by Halff Associates for the City of McKinney (August 2016)

Awaiting TxDOT determination regarding interface with proposed FM 546 project between SH 5 and Airport Drive

COLLIN COUNTY

SH 121 Extension Influence
Magnitude of Volume Change

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Daily Volume Increase (Linewidth is proportional to increase in daily volume)

Daily Volume Decrease (Linewidth is proportional to decrease in daily volume)

- Mobility 2040 Roadway Network
- Proposed SH 121 Extension
- County Line
- Lakes



75

75

5
TEXAS

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TEXAS

Daily Volume: 39,000
33% Decrease from Mobility 2040

Daily Volume: 29,000
36% Decrease from Mobility 2040

Daily Volume: 30,000
44% Decrease from Mobility 2040

Daily Volume: 70,000
14% Increase from Mobility 2040

Daily Volume: 95,000
5% Increase from Mobility 2040

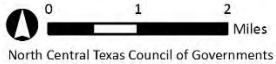
Daily Volume
61,000

Daily Volume
48,000

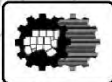
Daily Volume
44,000

Daily Volume
36,000

Daily Volume: 206,000
4% Increase from Mobility 2040



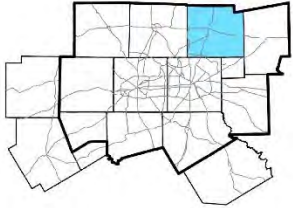
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Additional Planning Considerations
West Corridor with SH 121 Extension

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----- Screenline

Proposed North/South Roadway Corridors

— West Corridor

— Lake Corridor

— SH 121 Extension

Functional Classification

— Freeway, Tollway, Express Lane

— Principal Arterial

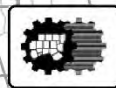
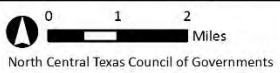
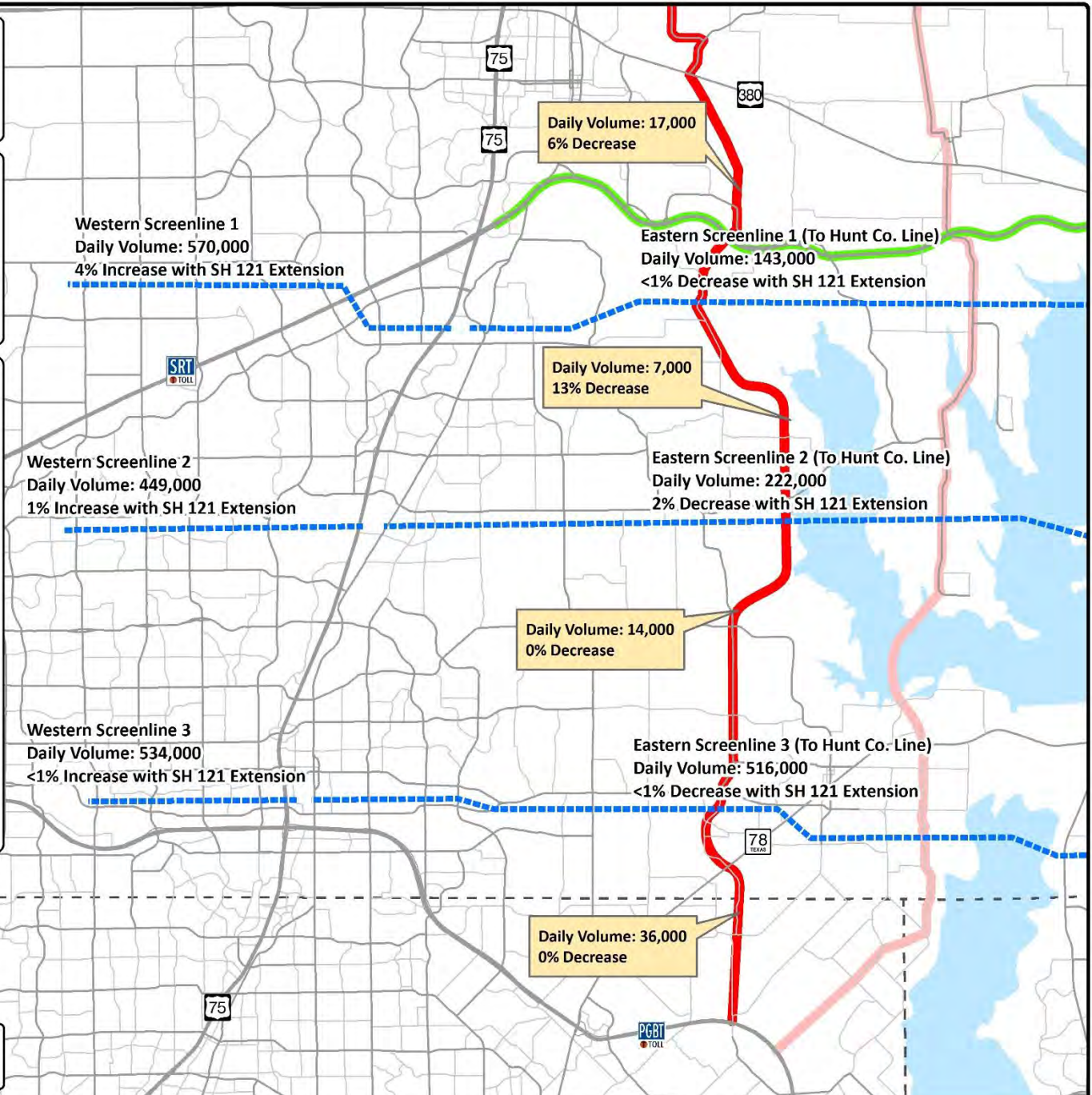
— Minor Arterial

— Collector

— Frontage/Service

— Lakes

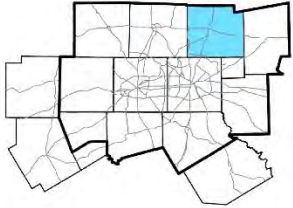
--- County Line



COLLIN COUNTY

Additional Planning Considerations
Lake Corridor with SH 121 Extension

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Screenline

Proposed North/South Roadway Corridors

- West Corridor
- Lake Corridor
- SH 121 Extension

Functional Classification

- Freeway, Tollway, Express Lane
- Principal Arterial
- Minor Arterial
- Collector
- Frontage/Service
- Lakes
- County Line

Western Screenline 1
Daily Volume: 570,000
4% Increase with SH 121 Extension

Daily Volume: 24,000
20% Increase

Eastern Screenline 1 (To Hunt Co. Line)
Daily Volume: 143,000
<1% Decrease with SH 121 Extension

Daily Volume: 28,000
13% Decrease

Western Screenline 2
Daily Volume: 449,000
1% Increase with SH 121 Extension

Eastern Screenline 2 (To Hunt Co. Line)
Daily Volume: 222,000
2% Decrease with SH 121 Extension

Daily Volume: 26,000
8% Increase

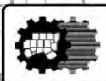
Western Screenline 3
Daily Volume: 534,000
<1% Increase with SH 121 Extension

Eastern Screenline 3 (To Hunt Co. Line)
Daily Volume: 516,000
<1% Decrease with SH 121 Extension

Daily Volume: 44,000
2% Decrease

0 1 2 Miles

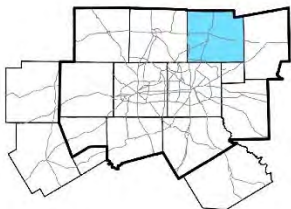
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COLLIN COUNTY

Additional Planning Considerations
SH 78/SH 205 Corridors with SH 121 Ext.

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--- Screenline

Proposed North/South Roadway Corridors

— SH78/SH 205/John King Corridor

— Other North/South Corridors

— SH 121 Extension

Functional Classification

— Freeway, Tollway, Express Lane

— Principal Arterial

— Minor Arterial

— Collector

— Frontage/Service

— Lakes

--- County Line

Eastern Screenline 1 (From SH 5)
Daily Volume: 143,000
<1% Decrease with SH 121 Extension

Eastern Screenline 2 (From SH 5)
Daily Volume: 222,000
2% Decrease with SH 121 Extension

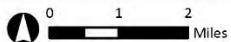
Eastern Screenline 3 (From SH 5)
Daily Volume: 516,000
<1% Decrease with SH 121 Extension

Daily Volume: 34,000
55% Increase

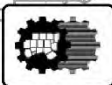
Daily Volume: 38,000
0% Decrease

Daily Volume: 56,000
8% Decrease

Daily Volume: 23,000
0% Decrease



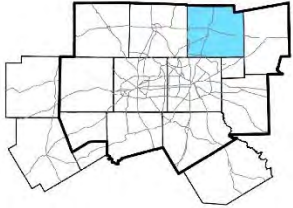
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COLLIN COUNTY

Additional Planning Considerations
Collin County Outer Loop with SH 121 Ext.

DRAFT DOCUMENT



--- Screenline

**Proposed North/South
Roadway Corridors**

— Collin County Outer Loop

— Other North/South Corridors

— SH 121 Extension

Functional Classification

— Freeway, Tollway, Express Lane

— Principal Arterial

— Minor Arterial

— Collector

— Frontage/Service

— Lakes

— County Line

Eastern Screenline 1 (From SH 5)
Daily Volume: 143,000
<1% Decrease with SH 121 Extension

Eastern Screenline 2 (From SH 5)
Daily Volume: 222,000
2% Decrease with SH 121 Extension

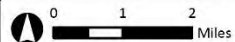
Eastern Screenline 3 (From SH 5)
Daily Volume: 516,000
<1% Decrease with SH 121 Extension

Daily Volume: 9,000
0% Decrease

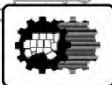
Daily Volume: 9,000
0% Decrease

Daily Volume: 9,000
0% Decrease

Daily Volume: 26,000
0% Decrease



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NEXT STEPS

NEXT STEPS

Meet with elected officials.

Analyze potential refined alternatives.

Proceed with strategic review to identify possible expedited projects.

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