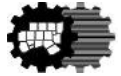


## WYLIE CITY COUNCIL WORK SESSION

November 9, 2017

Wylie City Hall

Wylie, Texas



North Central Texas Council of Governments

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# COLLIN COUNTY

# STRATEGIC ROADWAY PLAN (CCSRP)

CONSIDERATIONS FOR EXPEDITED IMPLEMENTATION

# WELCOME + INTRODUCTIONS

## **NCTCOG STAFF**

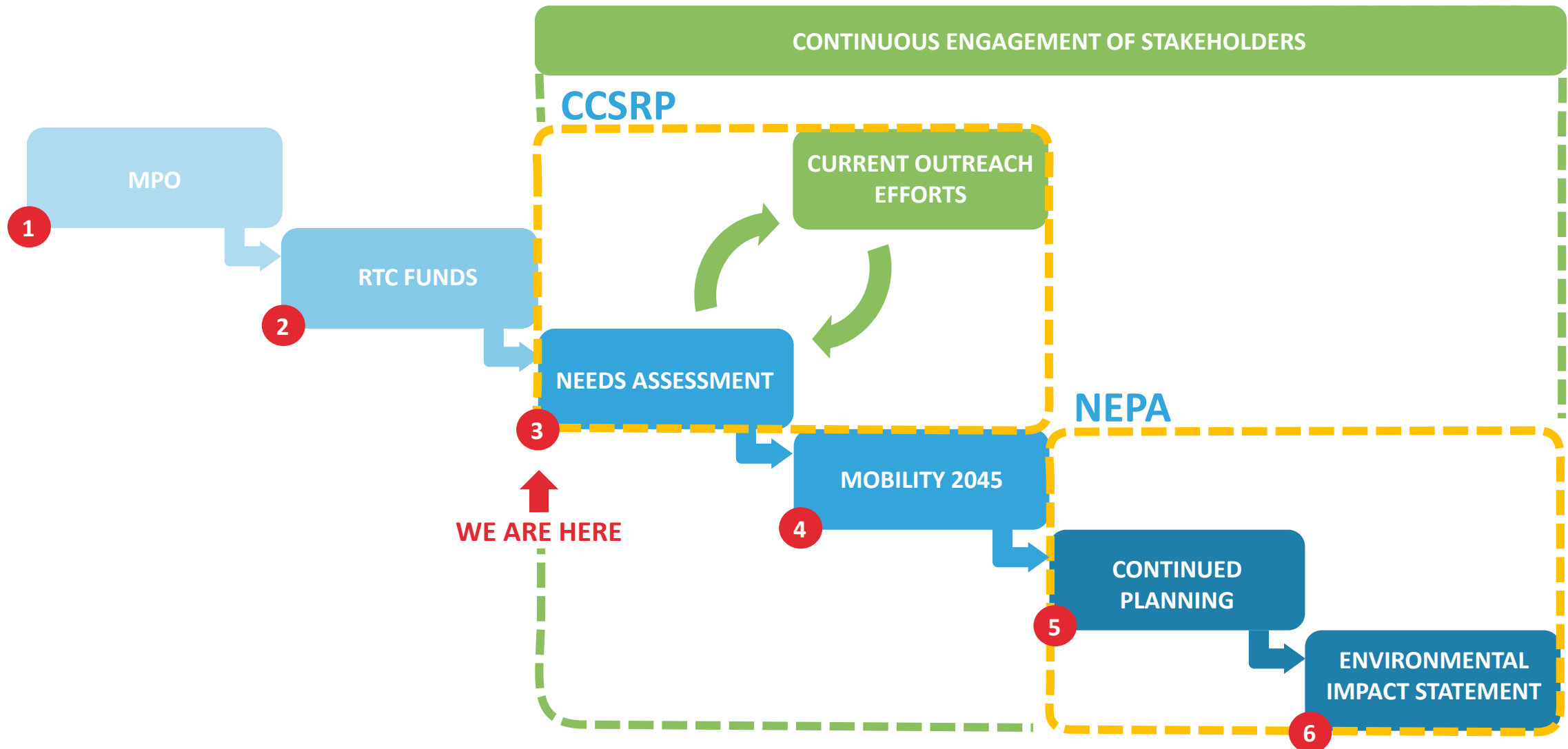
Michael Morris, P.E. – Director of Transportation

Dan Lamers, P.E. – Senior Program Manager

Jeff Neal – Program Manager

Chris Reed – Senior Transportation Planner

## WHERE ARE WE NOW? WHERE ARE WE GOING?





# **COLLIN COUNTY STRATEGIC ROADWAY PLAN**

## Corridor 1 (Near Term):

### US 75

- Widening in Allen
- Ridgeview Drive Interchange
- PGBT Interchange Ramp Improvement
- Technology Lane

## Corridor 2 (Near Term):

### Collin County Outer Loop

- Staged construction of frontage roads

## Corridor 3 (Near Term):

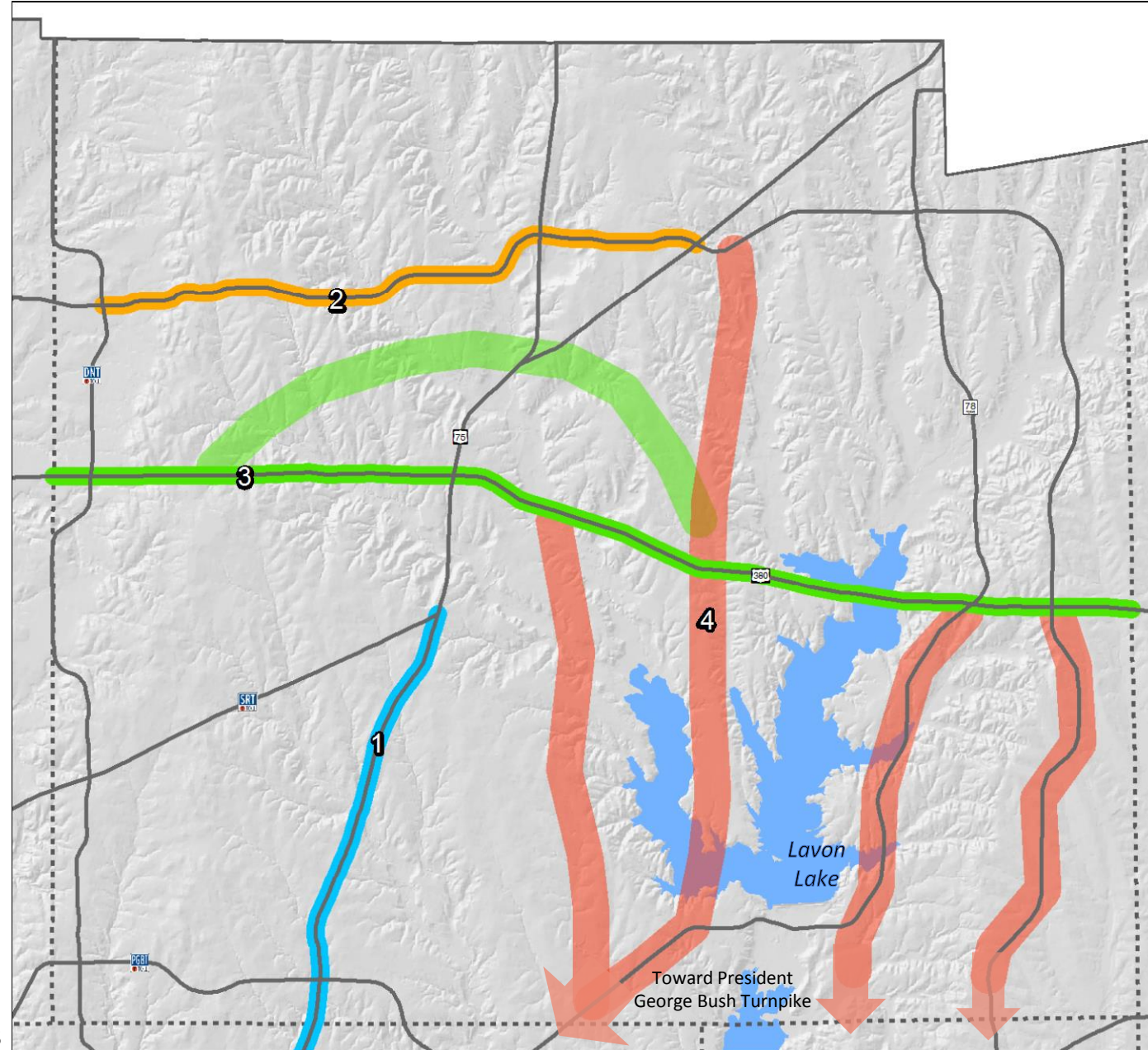
### US 380

- Countywide Study
- McKinney Bypass

## Corridor 4 (Longer Term):

### Collin County Strategic Transportation Initiative

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



## 10-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 Strategic Roadway 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

### Complementary Projects for North/South Corridors:

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

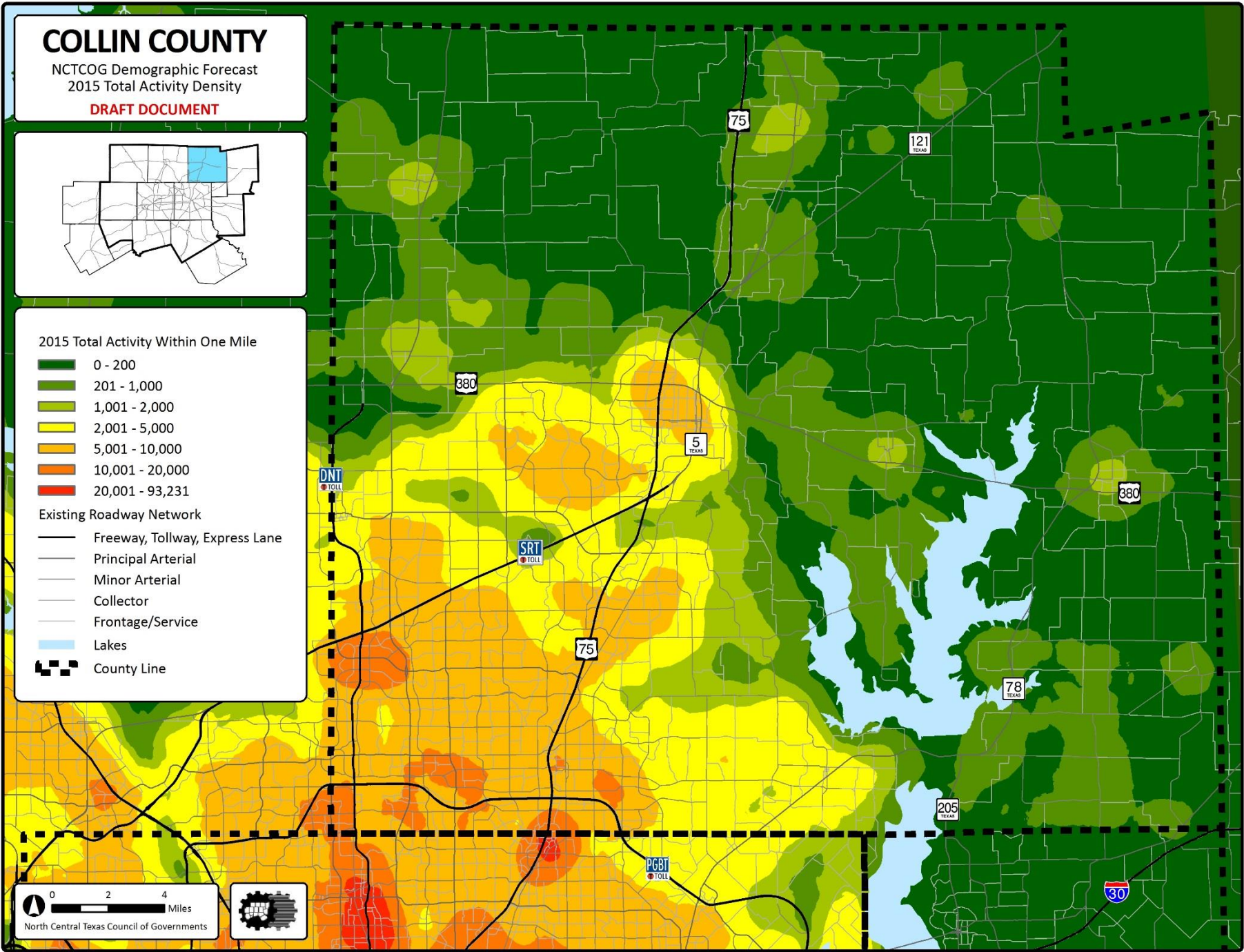
FM 2514 (Lavon Pkwy. – Brown Street) – \$26,796,024

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

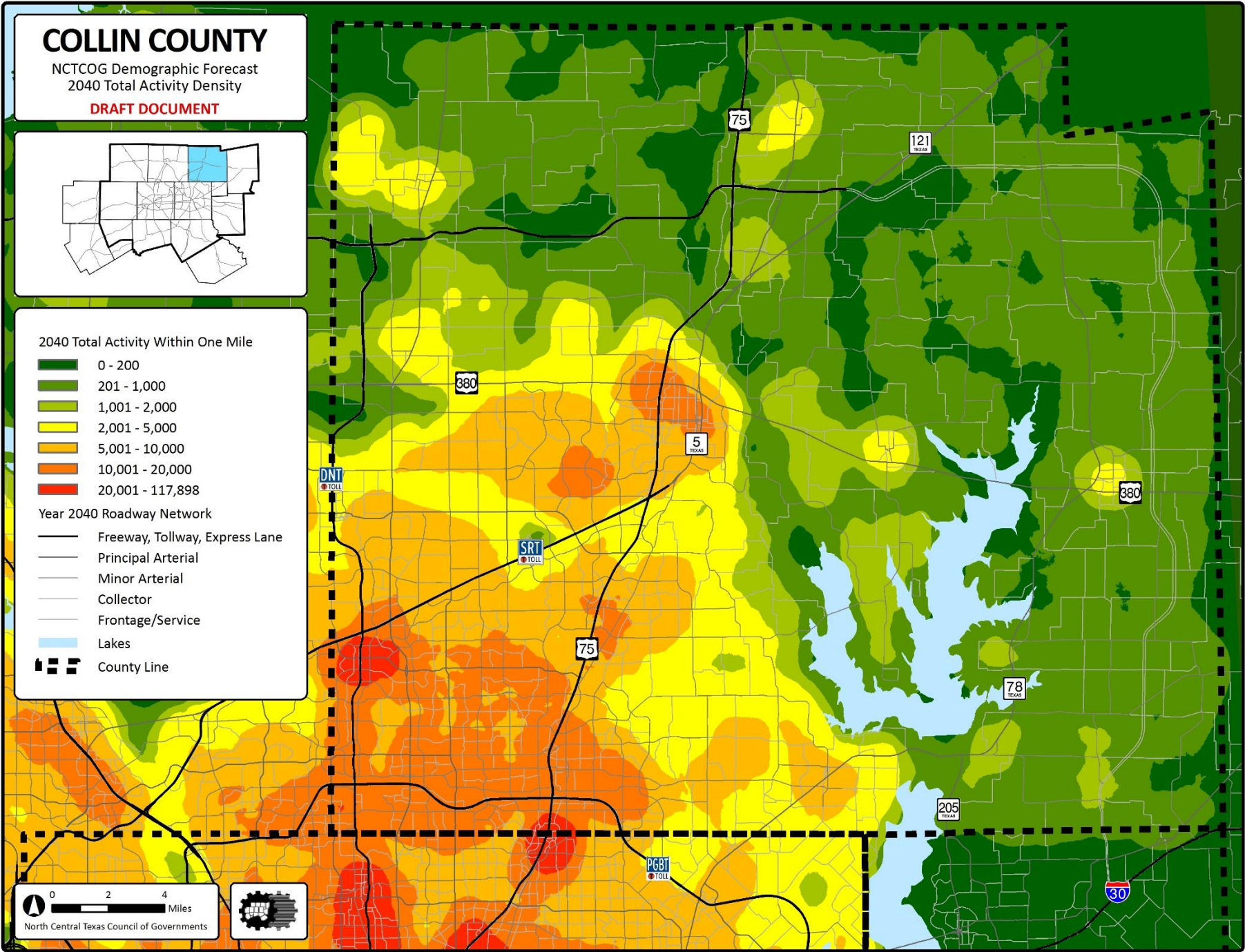
SH 205 (SH 78 – Rockwall C/L) – \$28,654,950

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



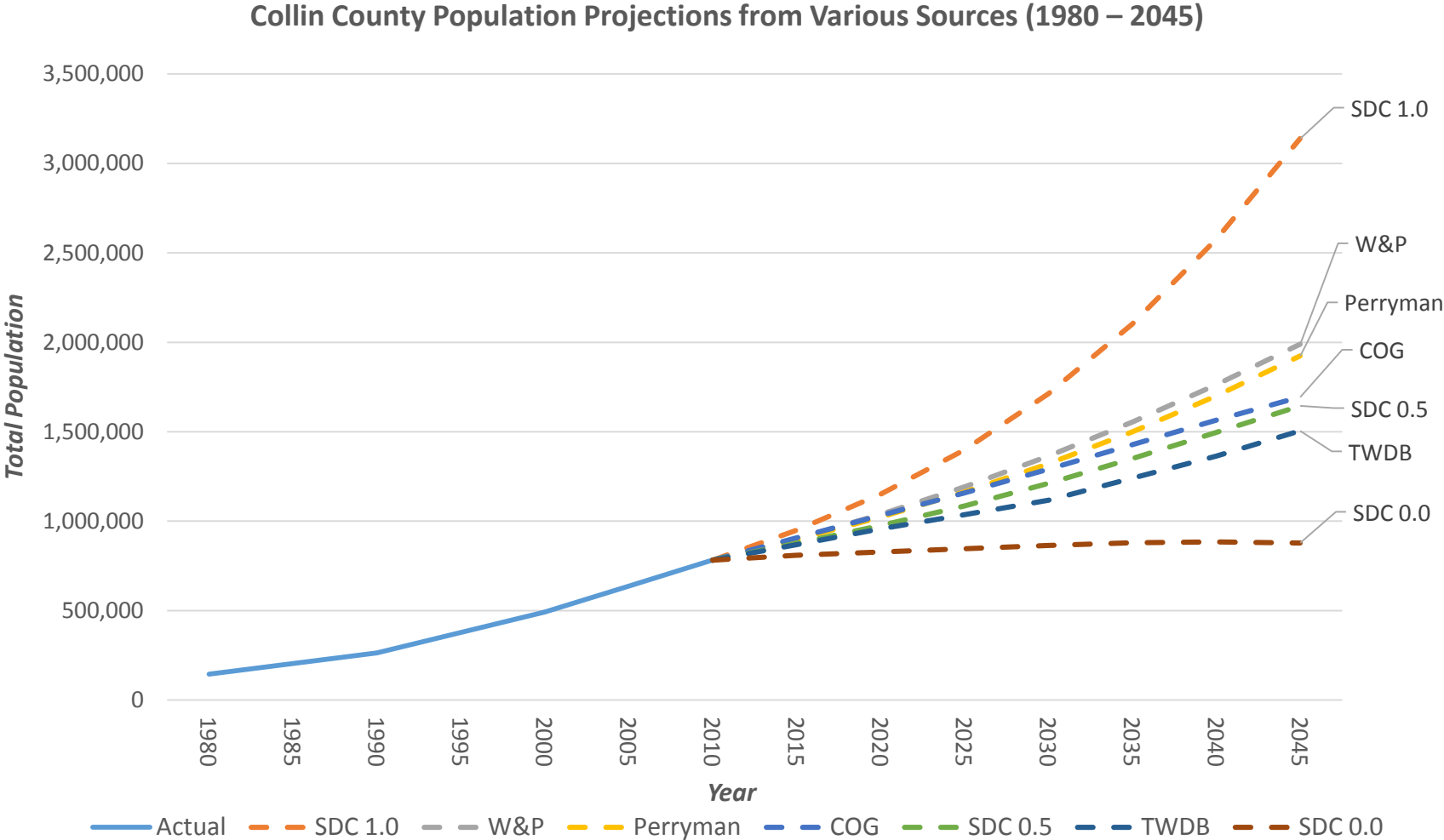








# COLLIN COUNTY DEMOGRAPHIC PROJECTION COMPARISON



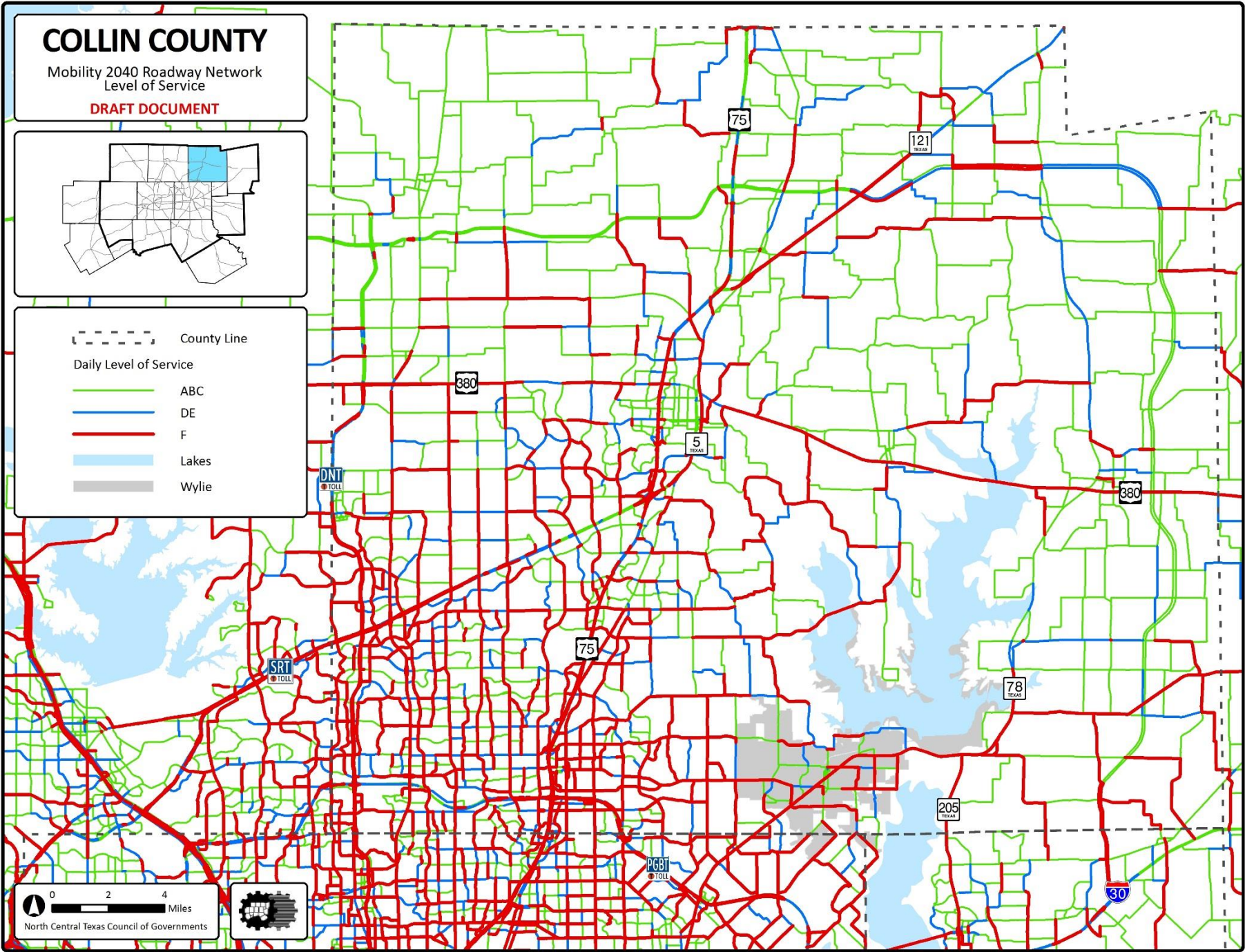
SDC – Texas State Data Center 0.0, 0.5, & 1.0 migration forecasts; released in 2014  
W&P – Woods & Poole Economics, Inc.; released in 2015  
Perryman – The Perryman Group (Ray Perryman); released in 2013

COG – NCTCOG 2040 forecast; released in 2015 (year 2045 is from 2017)  
TWDB – Texas Water Development Board; released in 2016

## STATEMENT ON DEMOGRAPHICS COMPARISON

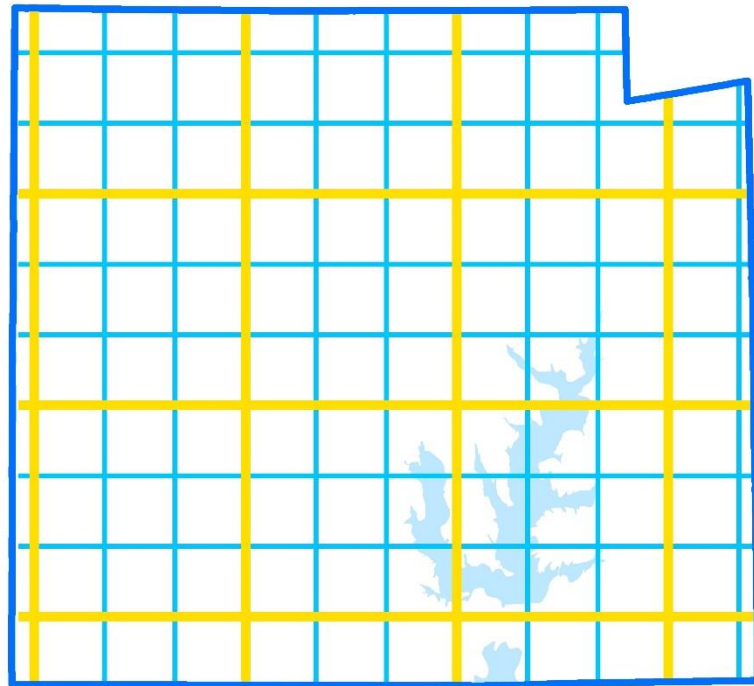
“Recent estimates of Texas population for July 1, 2012 show Texas to be continuing to grow at rates very similar to those from 2000 to 2010 but also showing a continuation of regional patterns of variation in rates of growth in Texas. **Despite this we believe that the 0.5 scenario continues to be the most appropriate scenario for most counties for use in long-term planning. For planning for the next 5-10 years the 1.0 scenario may be more appropriate.**” *(Emphasis added)*

The Office of the State Demographer. (2014). *Projections of the Population of Texas and Counties in Texas by Age, Sex and Race/Ethnicity for 2010-2050*. Austin, TX: The Texas State Data Center. (2014).



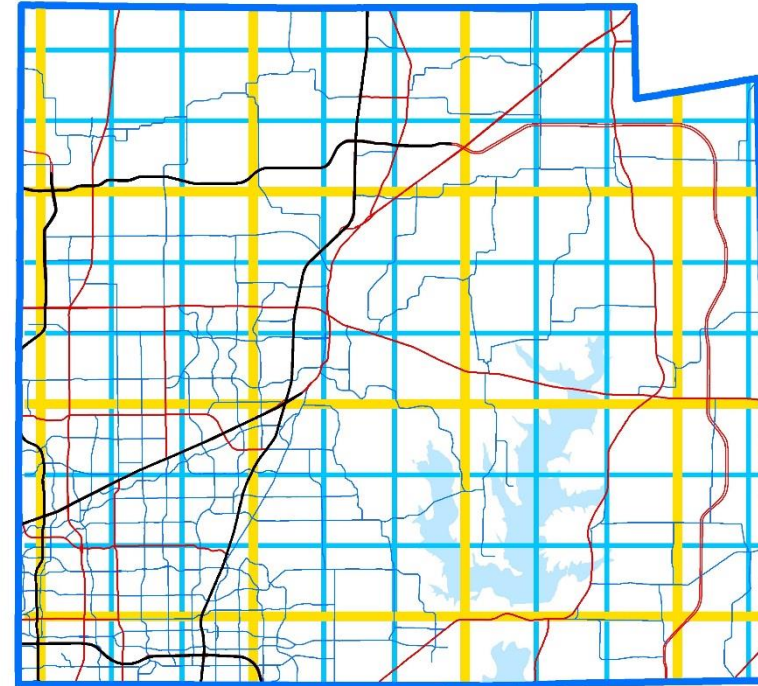
## FACILITY SPACING IN COLLIN COUNTY

Theoretical Facility Spacing  
(Freeways  $\approx$  10 mi., Principal Arterials  $\approx$  2-5 mi.)



Freeway Principal Arterial

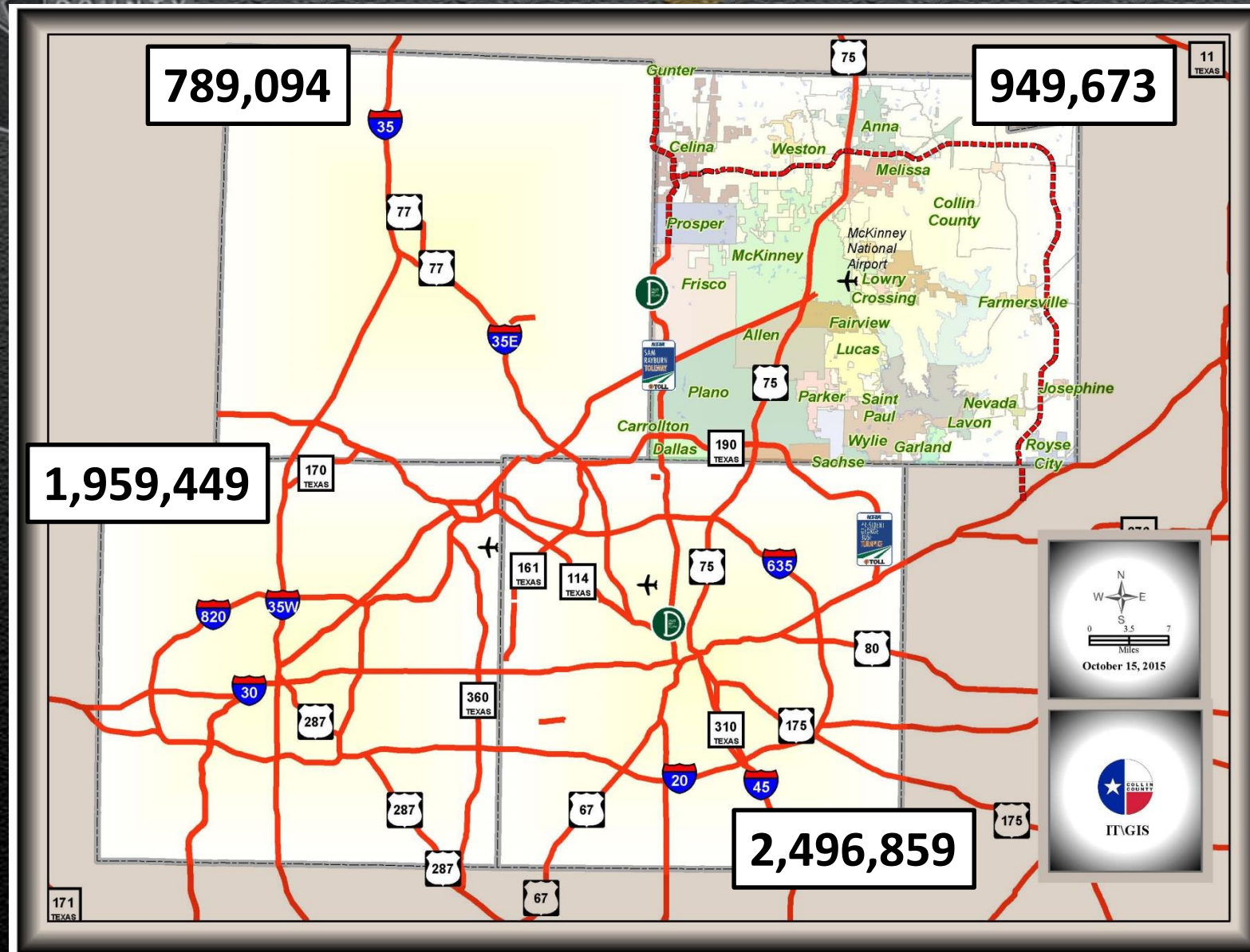
Theoretical Facility Spacing overlaid  
on Year 2040 Roadway Network





# Limited Access Roadways (LARs) Comparison

13

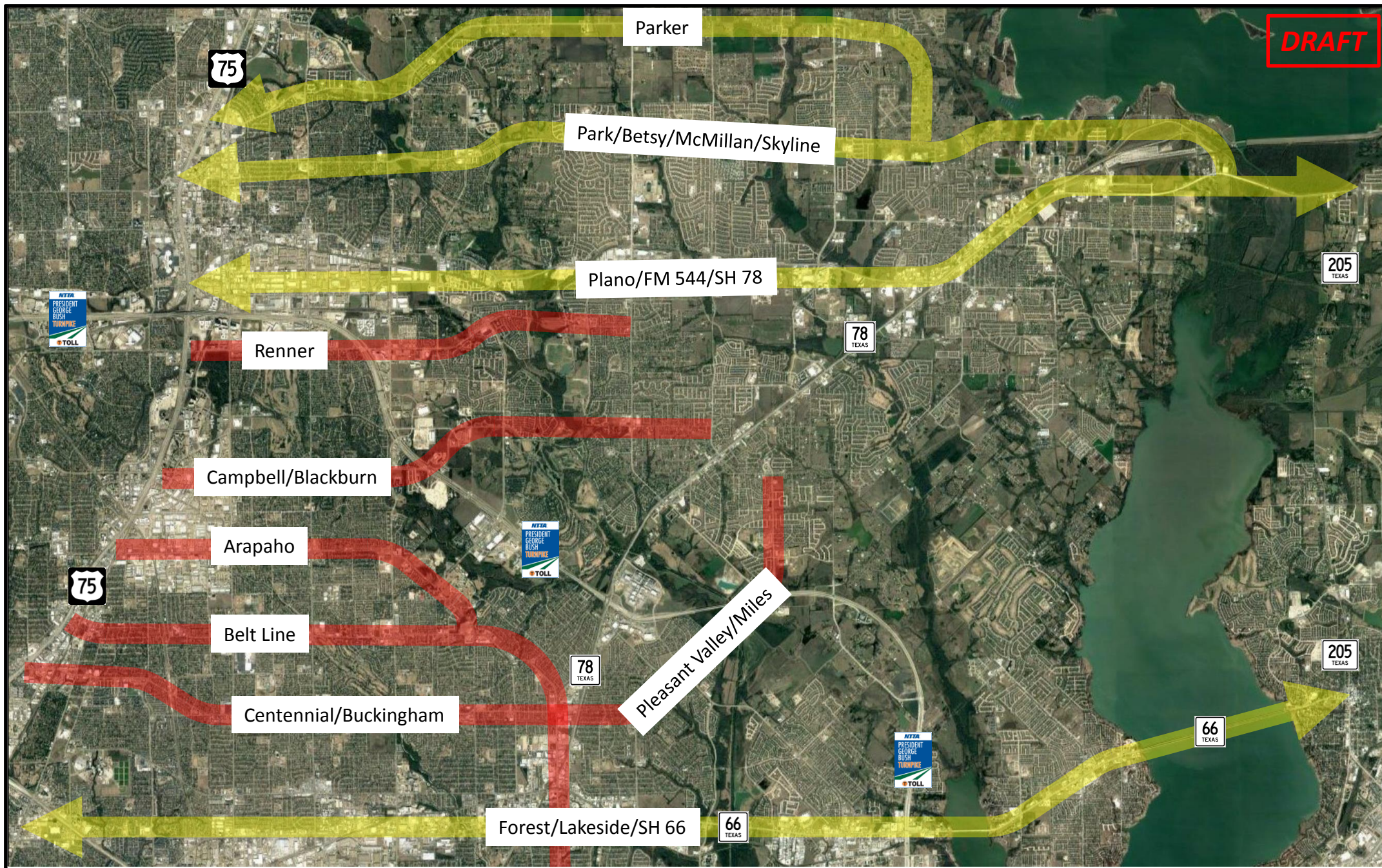




# CCSRP: Addressing Network Gaps

US 75 – SH 205

Lack of East – West  
Thoroughfare  
Continuity



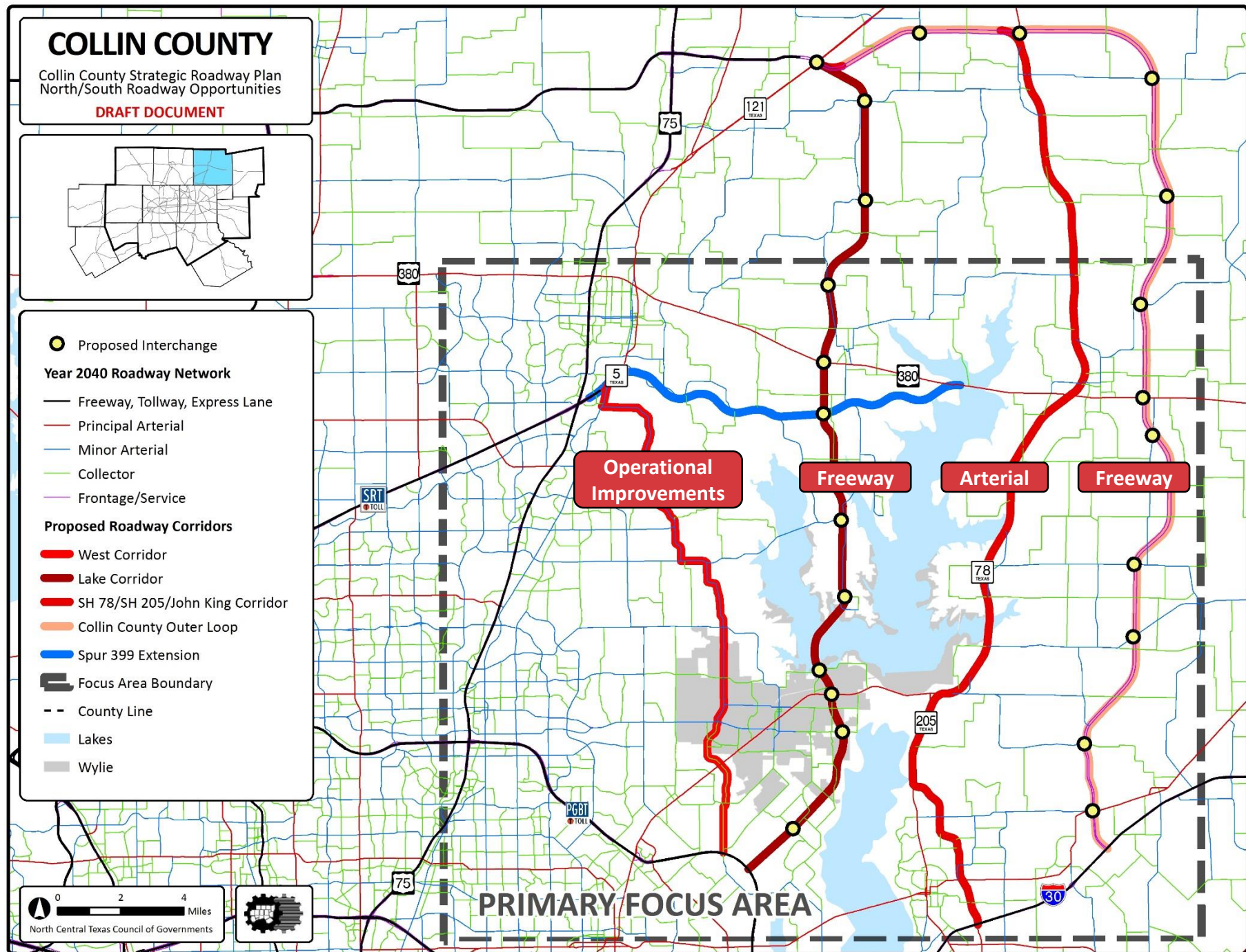
Continuous Thoroughfares

Discontinuous Thoroughfares

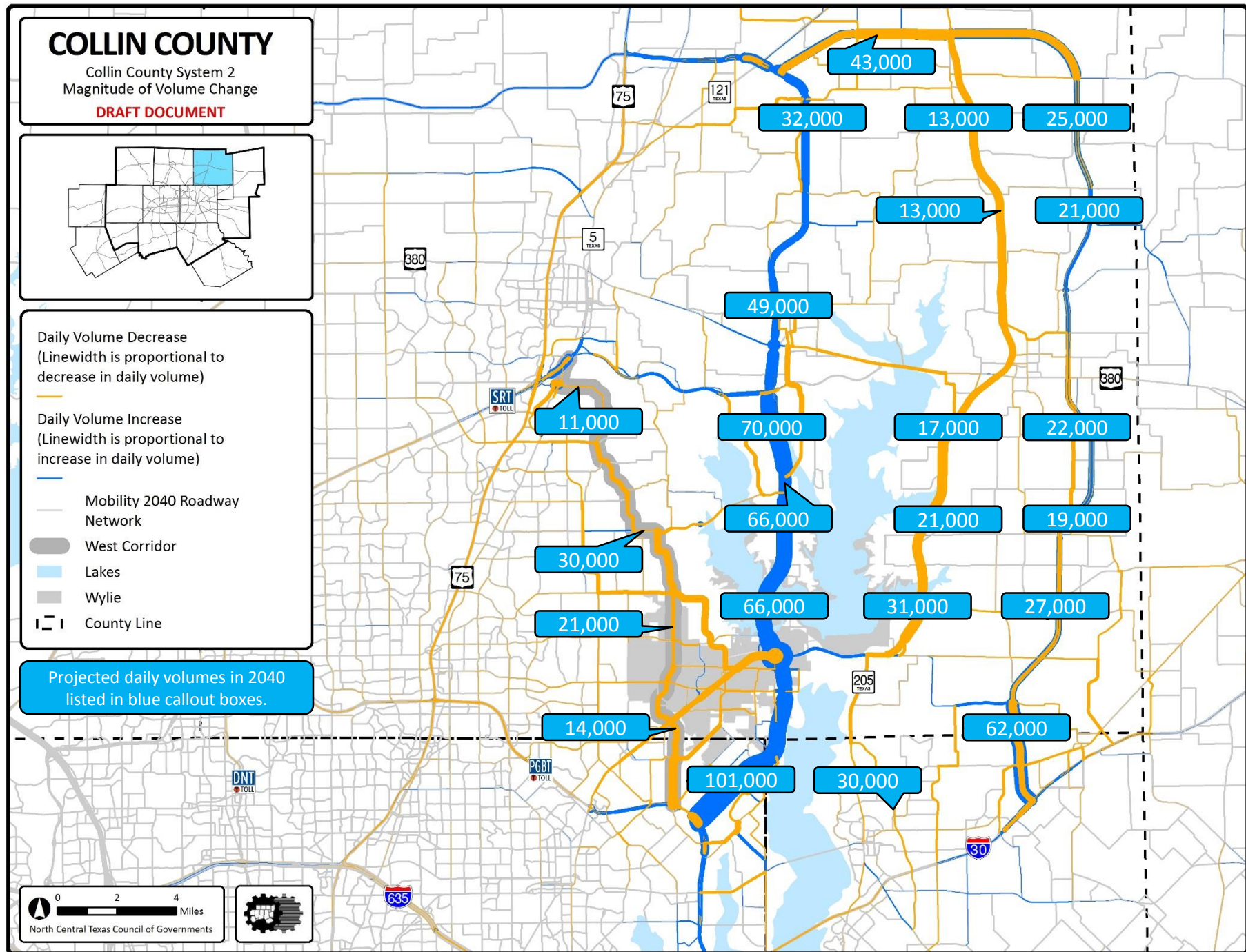




# **SUMMARY OF NORTH/SOUTH SCENARIOS**







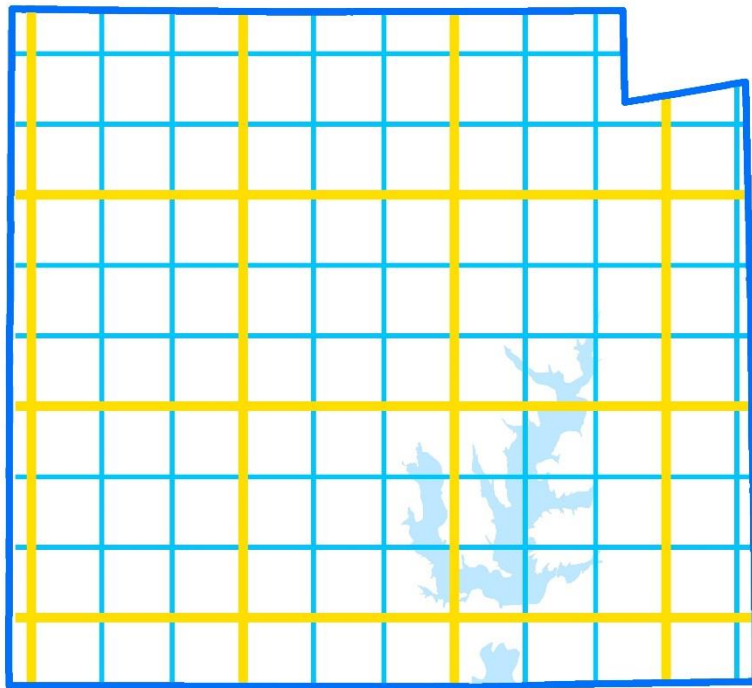
## SUMMARY OF FINDINGS (UPDATED FROM JUNE 1<sup>ST</sup> MEETING)

1. US 75 must be solved independently.
2. Computer simulation supports theoretical spacing of facilities.
3. Spur 399 extension should get significant consideration. Focus on expediting engineering services for TxDOT.
4. West Corridor to be advanced through operational improvements and targeted capacity enhancement per local thoroughfare plans.
5. Lake Corridor alignment should be considered as a staged freeway (with parkway design). Evaluate reversible facility.
6. SH 78/SH 205/John King Boulevard should continue to be advanced as a thoroughfare (US 380 to IH 30) and proceed through environmental process.
7. Collin County Outer Loop should continue to advance as a staged freeway.
8. N/S corridor roadway system should be west to east starting at US 75: **freeway/operational improvements/freeway/thoroughfare/freeway.**

# **SUMMARY OF EAST/WEST SCENARIOS**

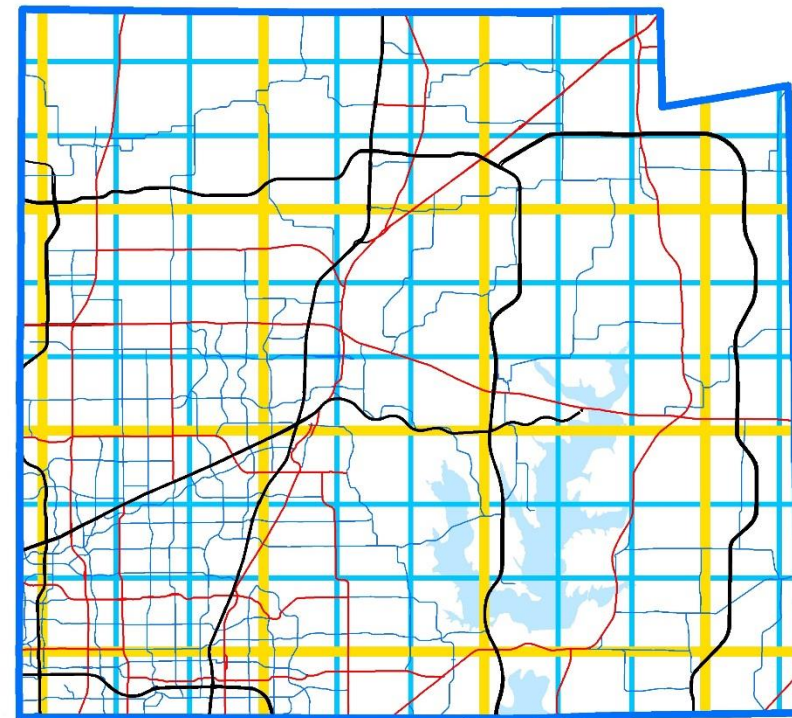
## FACILITY SPACING IN COLLIN COUNTY

Theoretical Facility Spacing  
(Freeways  $\approx$  10 mi.,  
Principal Arterials  $\approx$  2-5 mi.)

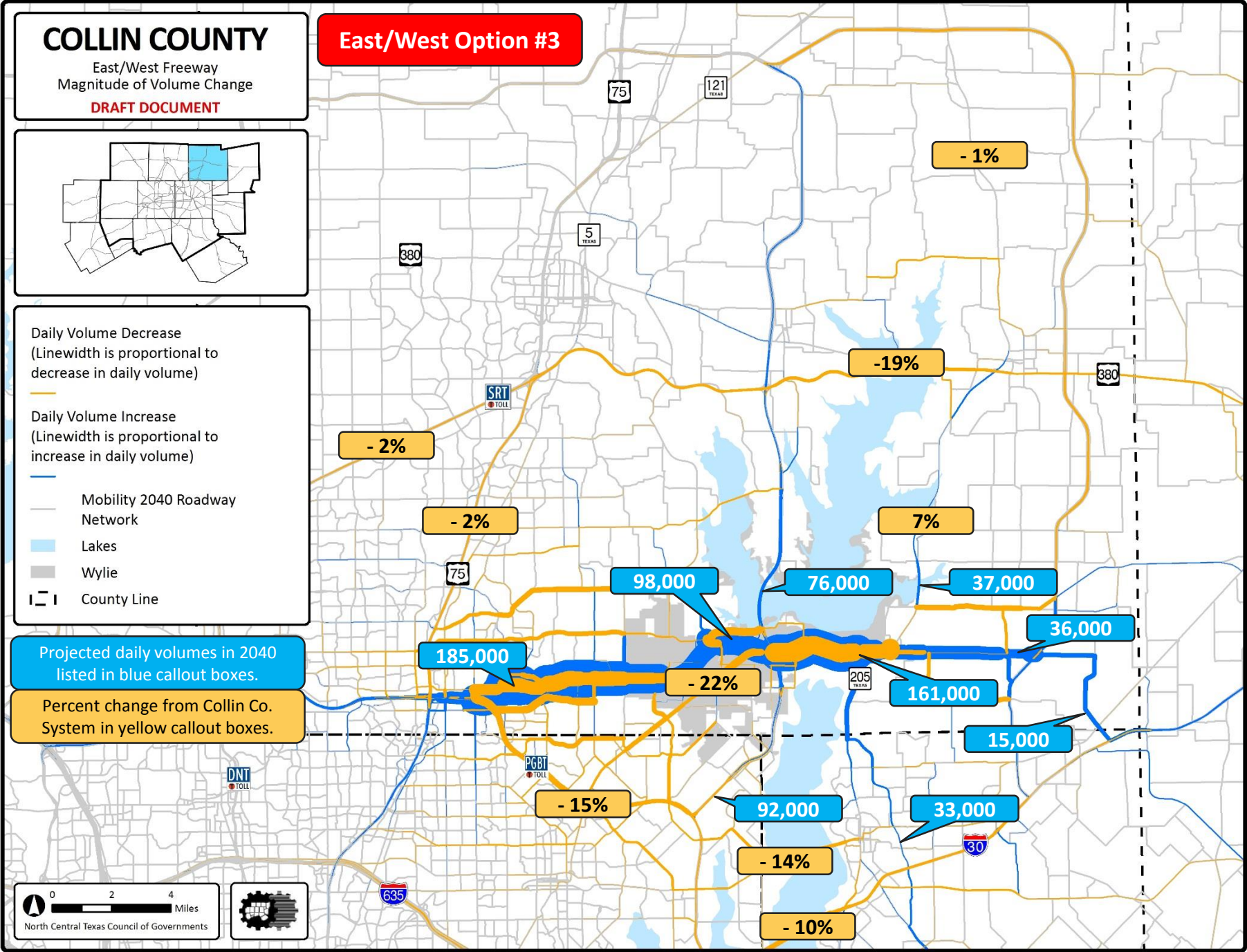


Freeway Principal Arterial

Theoretical Facility Spacing  
overlaid on Year 2040  
Collin County System Roadway Network







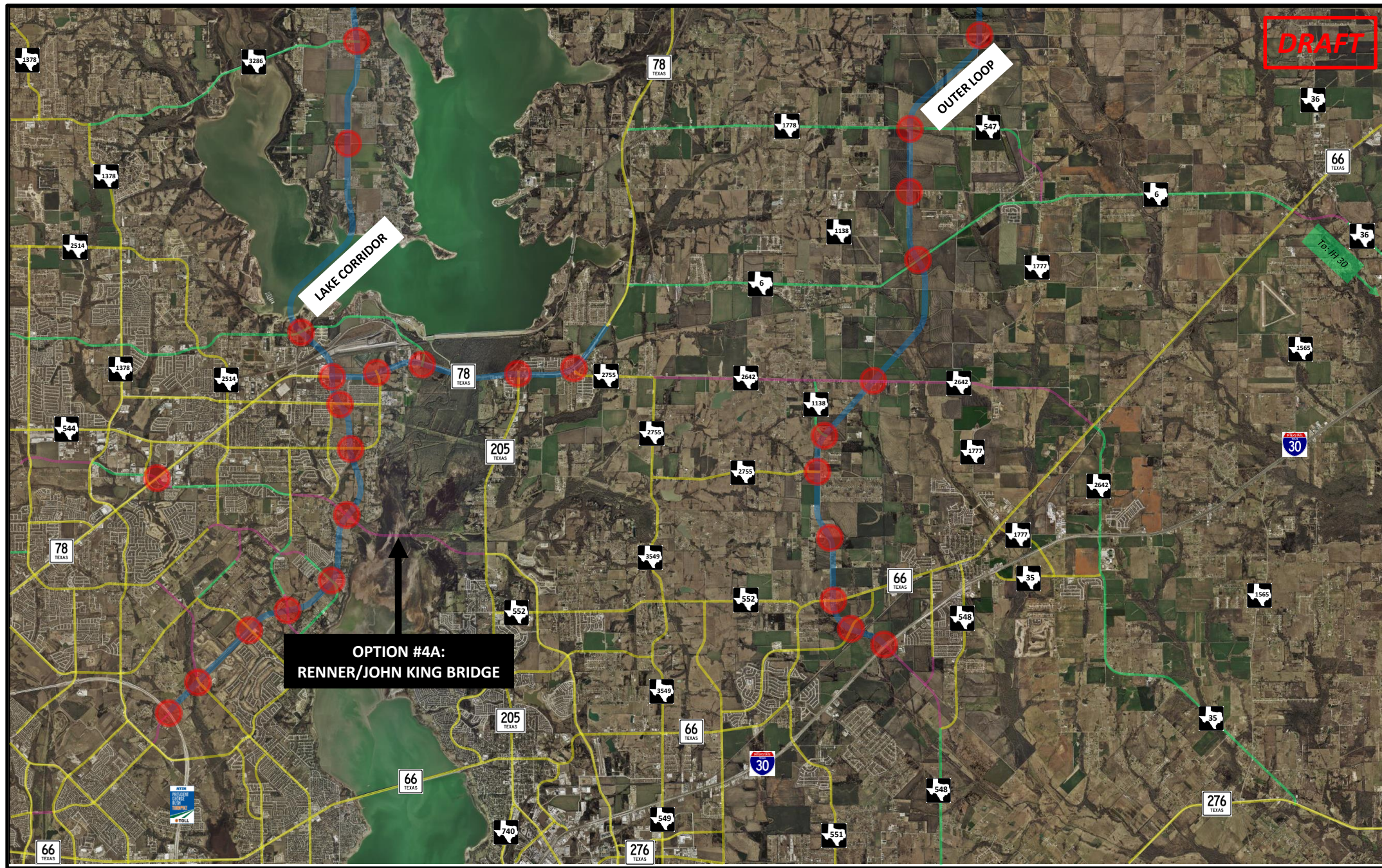


**CCSRP:  
“E – W Max  
Thoroughfare”  
Alternative  
Concept**

**Option #4A:  
Renner/John King  
Bridge**

4/6-Lane  
Thoroughfare  
Recommendations

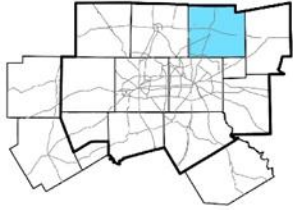
(SE Collin/NE Dallas/  
SW Hunt/N Rockwall  
Counties)





# COLLIN COUNTY

East/West Option 4A  
Magnitude of Volume Change  
**DRAFT DOCUMENT**



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

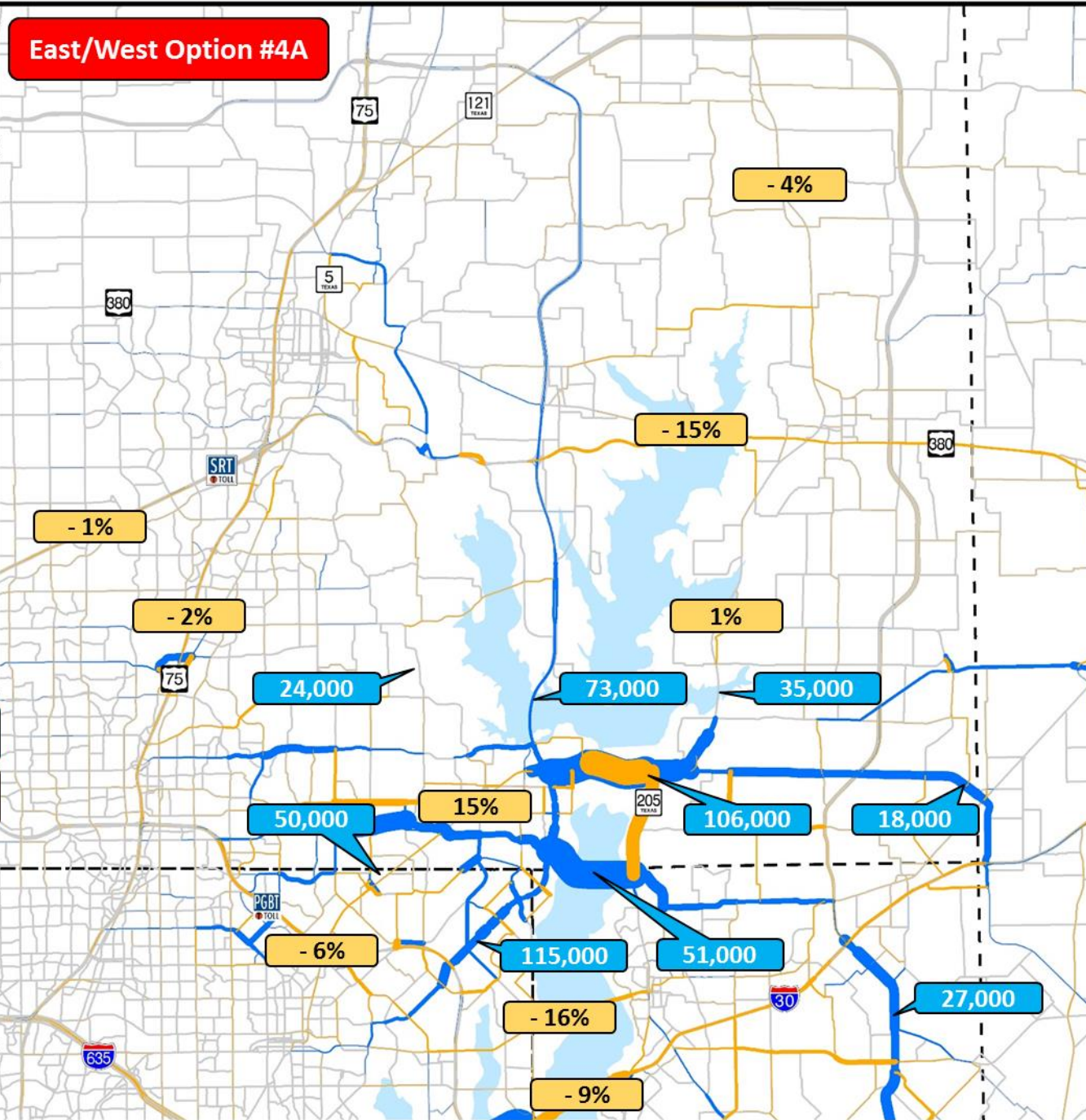
Daily Volume Increase  
(Linewidth is proportional to increase in daily volume)

Mobility 2040 Roadway Network  
Lakes  
County Line

Projected daily volumes in 2040  
listed in blue callout boxes.

Percent change from Collin Co.  
System in yellow callout boxes.

## East/West Option #4A



Computer Simulation Performance Comparison*	N/S System	N/S System + E/W Option #3	N/S System + E/W Option #4
COUNTY			
VMT = Vehicle Miles or Travel			
VHT = Vehicle Hours of Travel			
Avg. Speed = Average Speed			
Control Delay = Traffic Control Delay			
Cong. Delay = Congestion Delay			
COLLIN COUNTY			
VMT	0%	3%	1%
VHT	-6%	-8%	-8%
Avg. Speed	7%	11%	10%
Control Delay	-4%	-7%	-5%
Cong. Delay	-16%	-22%	-23%
DALLAS COUNTY			
VMT	0%	-1%	0%
VHT	0%	-2%	-1%
Avg. Speed	1%	1%	1%
Control Delay	-1%	-2%	-1%
Cong. Delay	-1%	-4%	-4%
ROCKWALL COUNTY			
VMT	3%	0%	-3%
VHT	-6%	-15%	-18%
Avg. Speed	9%	18%	19%
Control Delay	-9%	-13%	-12%
Cong. Delay	-19%	-46%	-51%
HUNT COUNTY			
VMT	-2%	-2%	-2%
VHT	-3%	-3%	-4%
Avg. Speed	1%	2%	2%
Control Delay	-2%	-4%	-1%
Cong. Delay	-8%	-12%	-16%
12-COUNTY REGION			
VMT	0%	0%	0%
VHT	-1%	-2%	-2%
Avg. Speed	1%	2%	2%
Control Delay	-1%	-2%	-1%
Cong. Delay	-3%	-6%	-5%

\*compared to CCSRP baseline

## SUMMARY OF EAST-WEST CORRIDOR FINDINGS

1. Computer simulation continues to support theoretical spacing of facilities.
2. New east-west facilities do not change north-south corridor recommendations.
3. Though Option #3 (full east-west freeway) carried significant volumes, ROW needs, constructability issues, and lack of a supportive east-west thoroughfare network limit overall effectiveness at a regional level.
4. Travel model results suggest an expanded east-west thoroughfare network can generate more broad regional performance benefits beyond Collin County.
5. New alternatives indicate that a new thoroughfare crossing of Lake Ray Hubbard is warranted despite improvements to IH 30, SH 78, and/or US 380.
6. Proposed Option #4A does not cause volumes to exceed 4-lane capacity limits on Rockwall County Thoroughfare Plan facilities such as SH 66, SH 205, FM 3549, and FM 552.
7. New/expanded east-west thoroughfares can extend effectiveness of recent capacity improvements on SH 78 and FM 544/Plano Parkway.
8. Through utilization of some existing facilities/alignments, it is likely Option #4A could be implemented at a fraction of the cost for Option #3.



# NEXT STEPS

## SUMMARY OF RECOMMENDATIONS FOR MOBILITY 2045:

(ALL RECOMMENDATIONS ARE NON-TOLLED)

1. **Spur 399 Extension Freeway** – US 75/SRT to US 380 east of Princeton (awaiting TxDOT authorization)
2. **West Corridor Operational Improvements** (FM 1378/Woodbridge Parkway/Merritt Road)
3. **Lake Corridor Freeway** – SH 121/Outer Loop to PGBT
4. **SH 78/SH 205/John King Blvd.:**
  - a. SH 78 – same as Mobility 2040 plus “Spur Freeway” (Lake Corridor to south of FM 6)
  - b. SH 205/John King Boulevard – consistency w/ SH 205 Feasibility Study recommendations
5. **Regional Outer Loop** (continued staged development – SH 121 to IH 30)
6. **East-West Thoroughfare Option #4A** (corridor placement awaiting final design results):
  - a. Maximize capacity per local thoroughfare plans (SE Collin/NE Dallas/Rockwall County)
  - b. New/expanded thoroughfare facilities:
    - i. West of SH 205 – Chase Oaks Drive/Chaparral Road connector; Sachse Road extension to Lake Corridor; Renner Road/John King Boulevard connector (w/ Lake Ray Hubbard bridge)
    - ii. East of SH 205 – FM 547/FM 1778 corridor; FM 6/FM 36 corridor; FM 2755/FM 2642/FM 35 corridor; Outer Loop/FM 548 connector

## PUBLIC OUTREACH FOR CCSRP

NCTCOG recommends conducting public meetings with potential partners in several locations this fall for the following purposes:

- Explain the Collin County Strategic Roadway Plan study process and the current context of draft recommendations.
- Determine general consensus and discuss potential outcomes related to integrating recommendations into Mobility 2045 and local thoroughfare plans. Mobility 2045 will have an independent public involvement process.
- Obtain input/feedback in advance of potential environmental studies by TxDOT and/or other partners, particularly with major corridors such as the Lake Corridor and Spur 399.
- Discuss possible construction staging opportunities based on available UTP (10-Year Plan) funds and implications for planned Collin County Bond Program. (maximize additional 10% design and 10% right-of-way funds)

## COMMITMENT TO ENVIRONMENTAL/ENGINEERING/CONSTRUCTION EFFORTS

1. Advance West corridor operational improvement components into the next Transportation Improvement Program (TIP).
2. Present Lake Corridor recommendations to indicate need to expedite environmental process in order to capture public feedback/sentiment.
3. Continue construction of SH 78/SH 205/John King Boulevard corridor sections and investigate where funding gaps exist.
4. Advance environmental procedures to secure Regional Outer Loop right-of-way.
5. Begin environmental procedures for both SH 78 Freeway Spur (east of Lake Corridor) and thoroughfare crossing of Lake Ray Hubbard.
6. Develop master cost/revenue matrix to leverage RTC funds with Collin County, TxDOT, and local governments that incorporates potential staged construction elements.
7. US 75 technology lanes are fully funded and should be implemented as soon as possible.
8. Continue environmental clearance efforts to advance frontage road construction on the Regional Outer Loop in northern Collin County (DNT to SH 121).
9. Continue to support TxDOT recommendations for US 380 corridor improvements.



## CONTACT INFORMATION

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