



North Central Texas
Council of Governments



Dallas-Fort Worth
CLEAN CITIES



Regional Trends in Air Quality, Electric Vehicles, and Transportation

GSA Regional Sustainability Council Meeting
September 13, 2018



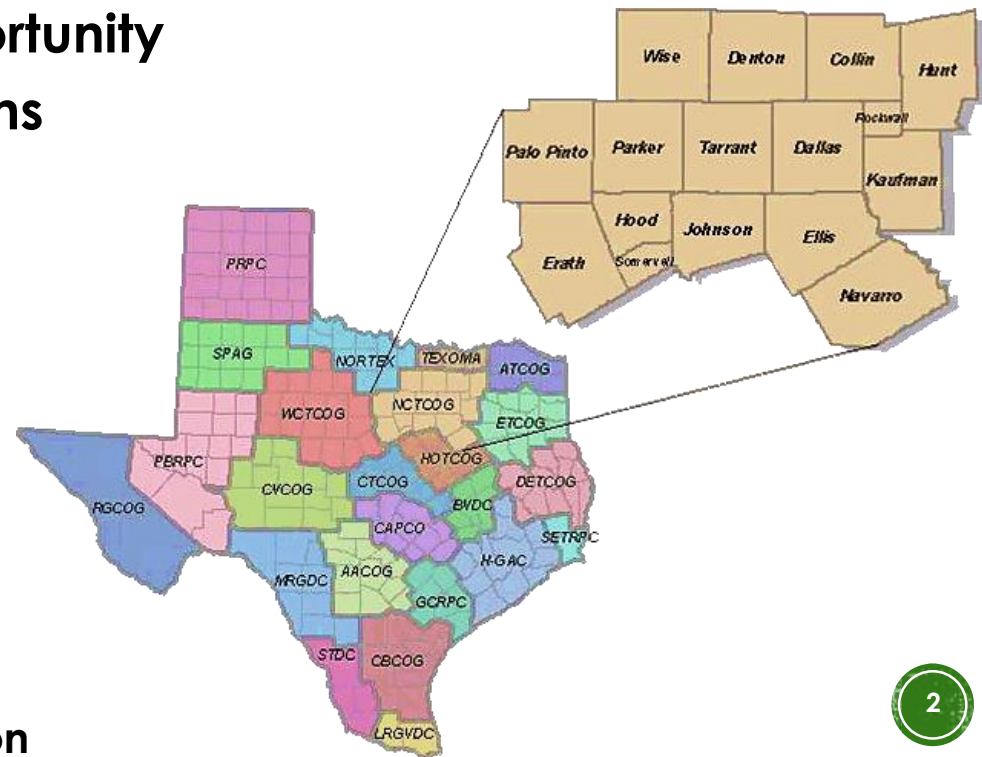
Bailey Muller, Senior Air Quality Planner
North Central Texas Council of Governments

WHO AND WHAT IS NCTCOG?

- Voluntary association of local governments
- Established in 1966
- Assists local governments in:
 - Planning for common needs
 - Cooperating for mutual benefit
 - Recognizing regional opportunity
 - Resolving regional programs
 - Making joint decisions
- 1 of 24 COGs in Texas
- Also Serves as MPO
- Also Houses Clean Cities



**North Central Texas
Council of Governments**



COG = Council of Governments;
MPO = Metropolitan Planning Organization

Air Quality 101

CLEAN AIR ACT

Requires Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for 6 criteria pollutants:

Carbon Monoxide (CO)

Lead (Pb)

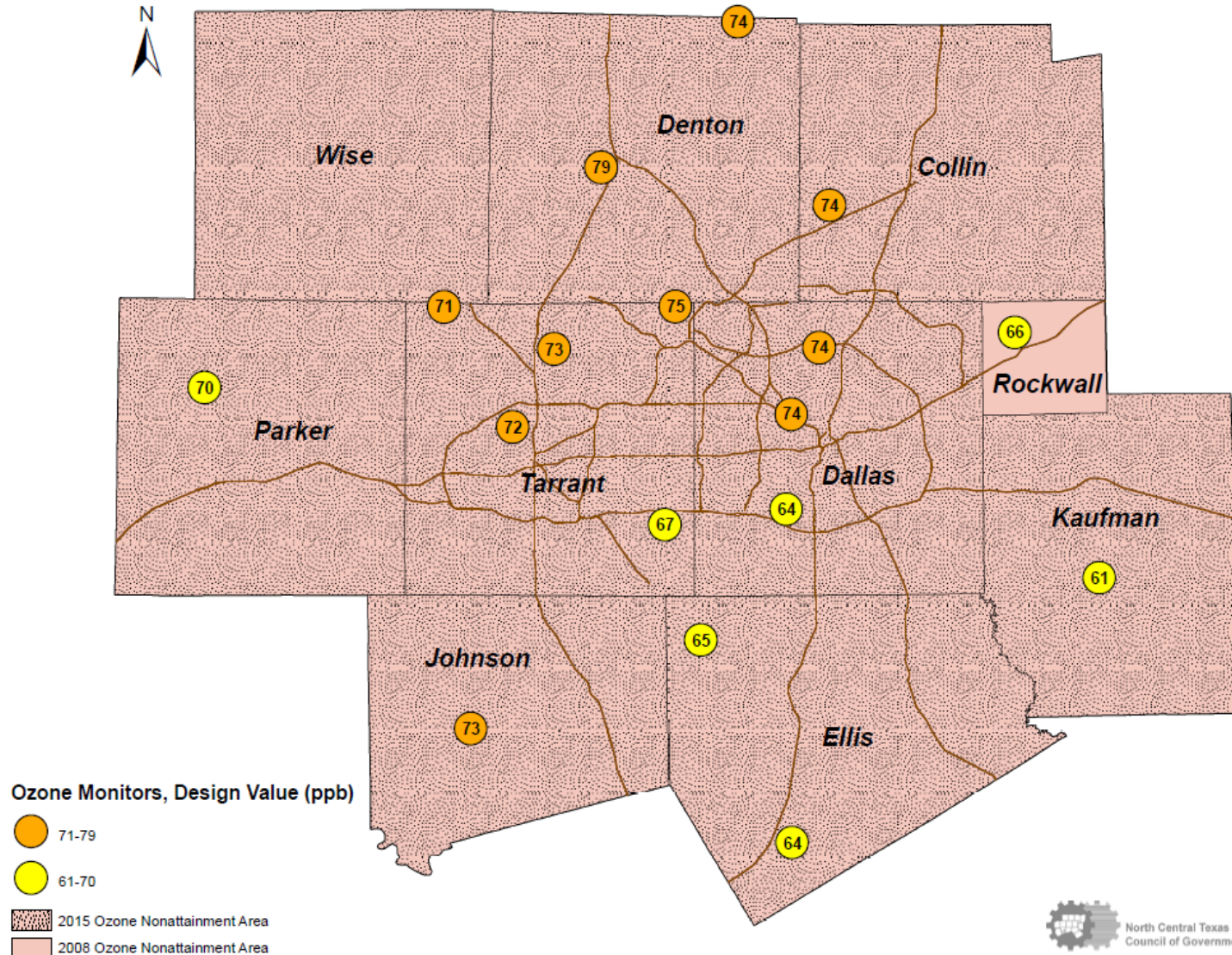
Nitrogen Dioxide (NO₂)

Ozone (O₃)

Particulate Matter (PM)

Sulfur Dioxide (SO₂)

DFW OZONE NONATTAINMENT AREA

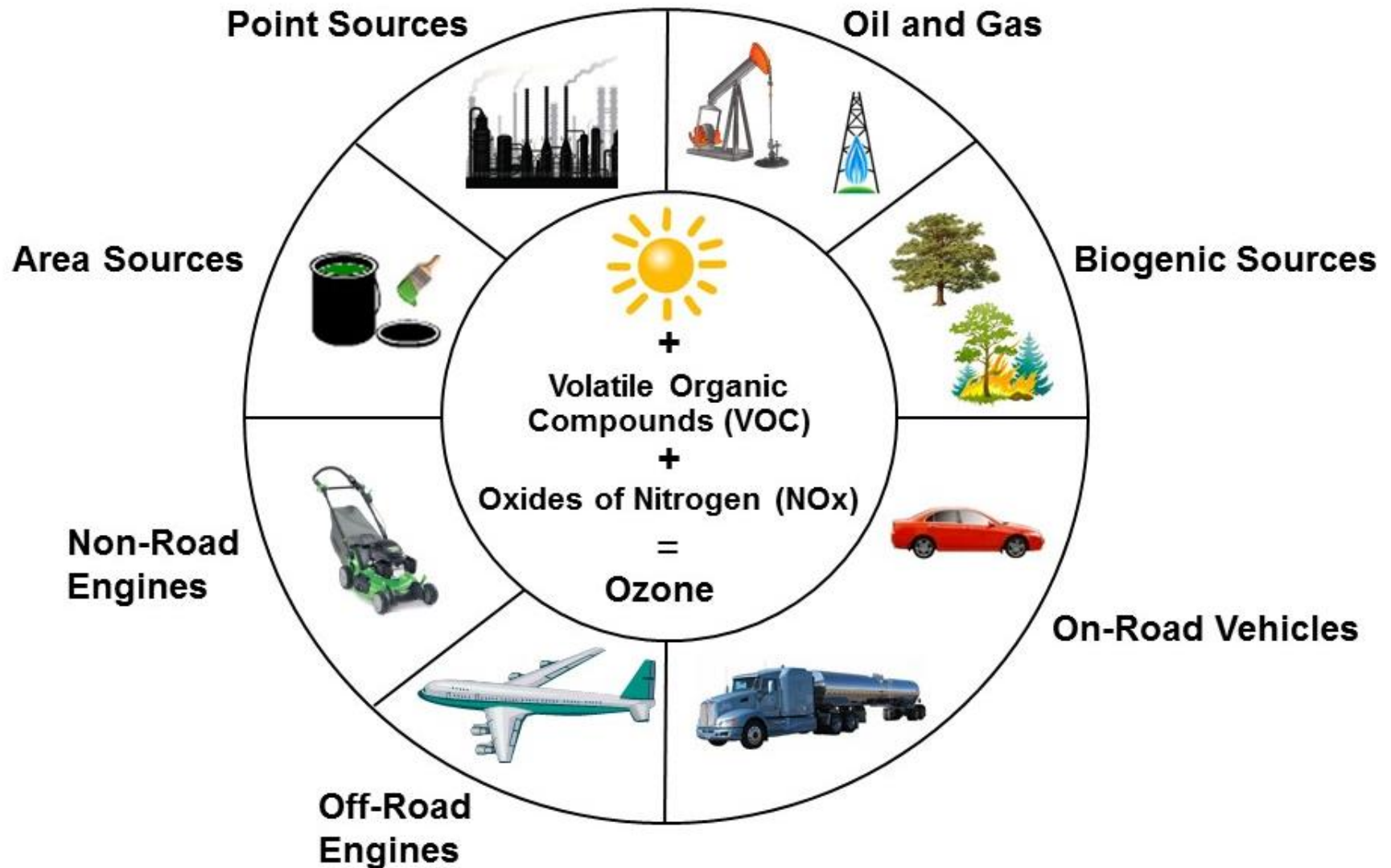


Colors represent Air Quality Index breakpoints

Attainment Goal - According to the US EPA National Ambient Air Quality Standards, attainment is reached when, at each monitor, the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration is less than or equal to 70 parts per billion (ppb).

HOW IS OZONE FORMED?

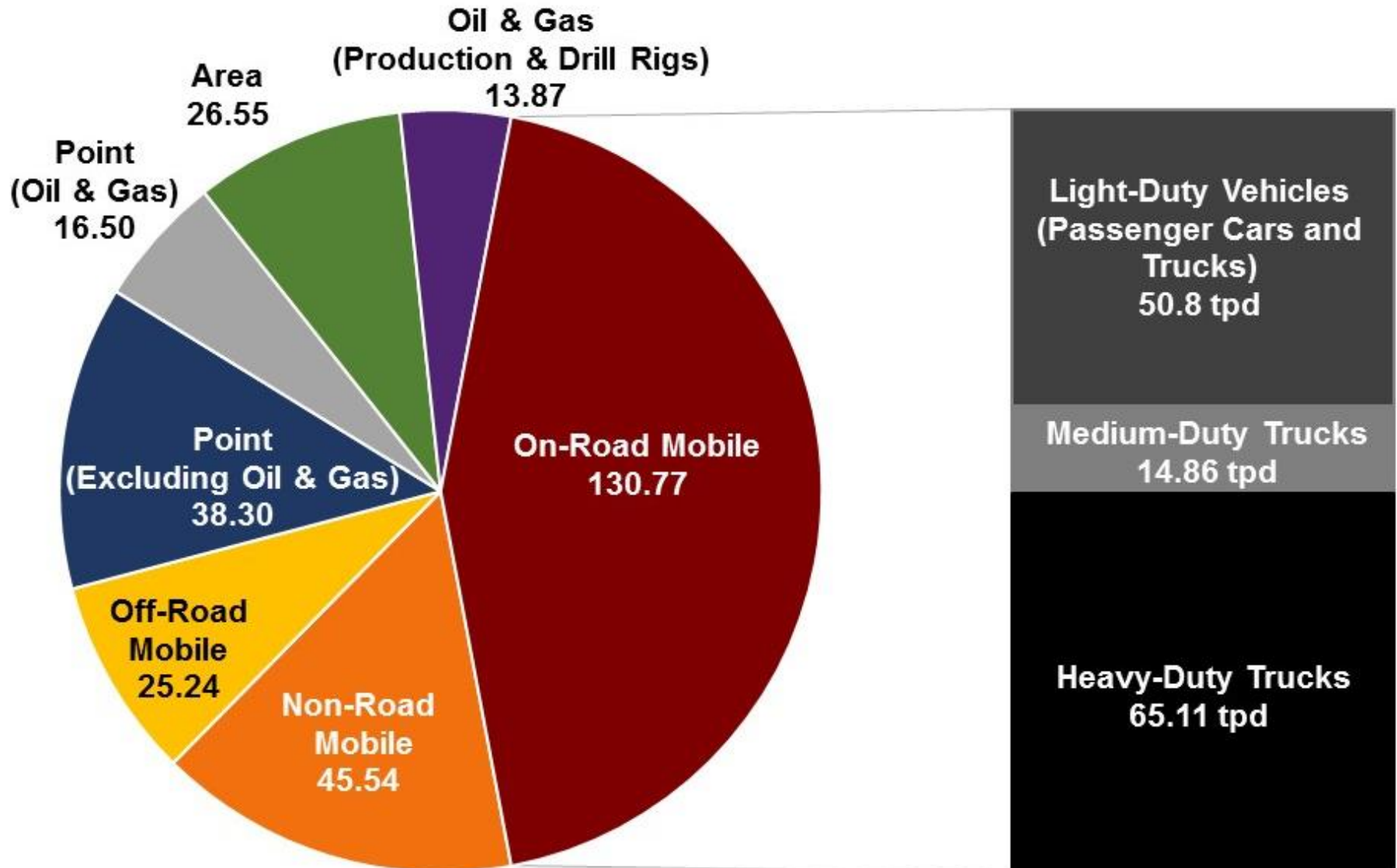
Emission Source Categories



Optimum conditions for the formation of ozone include high temperatures and low winds.
Sections are not to scale and are for illustrative purposes only.

NITROGEN OXIDES (NO_x) EMISSION SOURCES

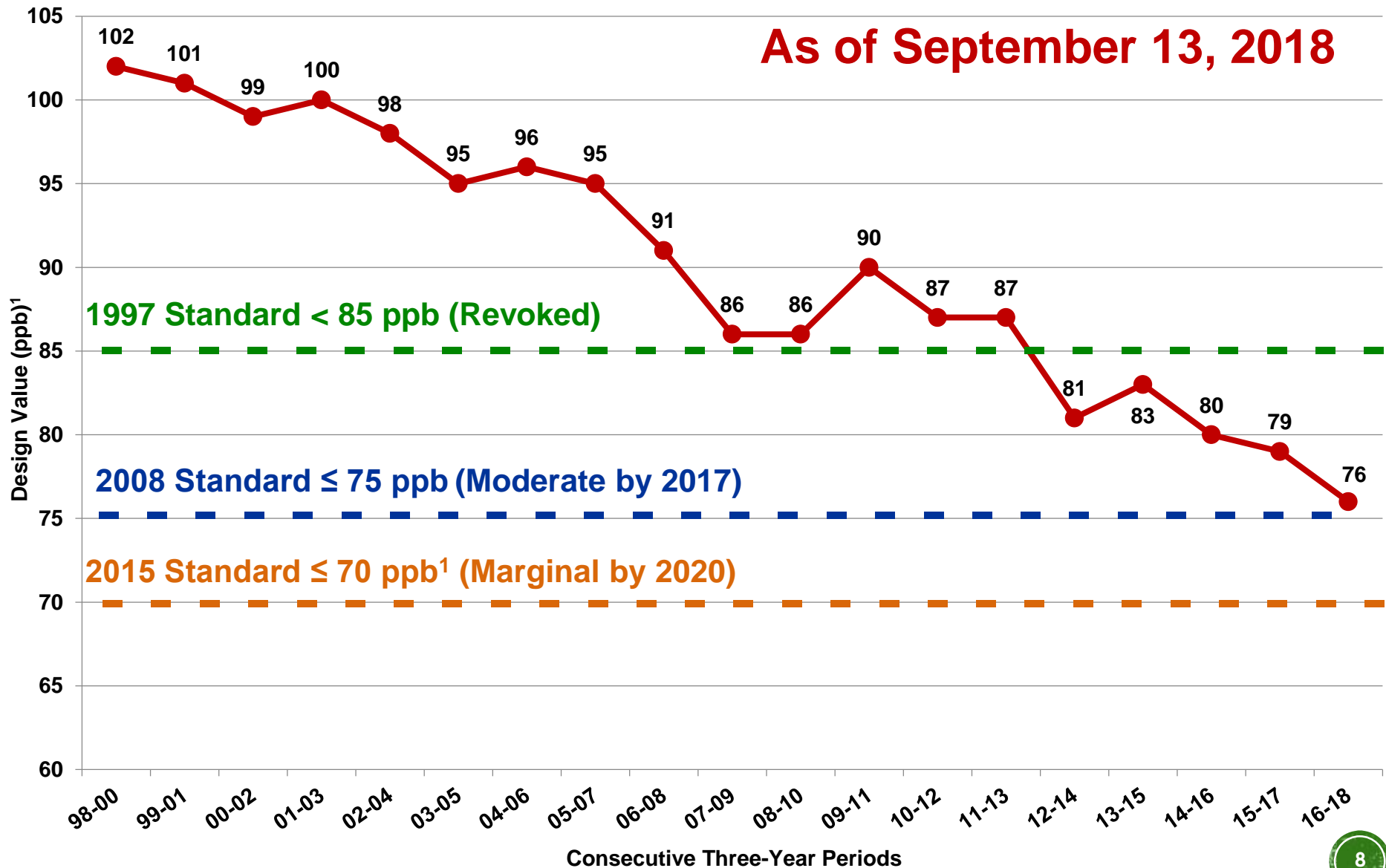
Total NO_x = 296.77 tons per day (tpd)



8-HOUR OZONE HISTORICAL TRENDS






DFW Nonattainment Area

As of September 13, 2018



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 70 parts per billion (ppb).

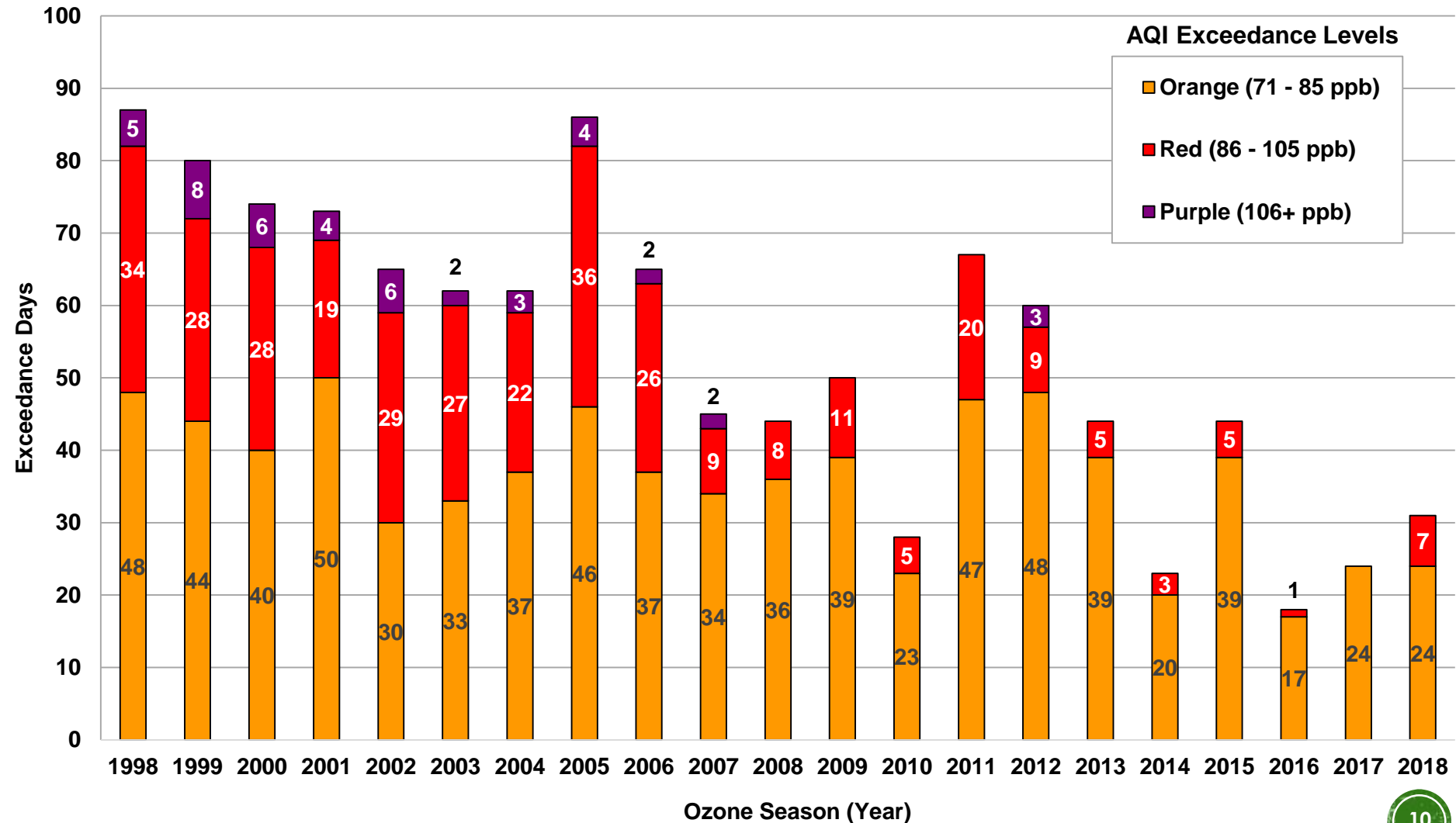
EPA AIR QUALITY INDEX

Color	Air Quality	Actions to Protect Your Health
	good	None necessary
	moderate	Unusually sensitive people should consider limiting prolonged outdoor exertion
	unhealthy for sensitive groups	Active children and adults and people with respiratory disease, such as asthma, should <i>limit</i> prolonged outdoor exertion
	unhealthy	Active children and adults and people with respiratory disease, such as asthma, should <i>avoid</i> prolonged outdoor exertion; everyone else, especially children, should <i>limit</i> prolonged outdoor exertion
	very unhealthy	Active children and adults and people with respiratory disease, such as asthma, should <i>avoid all</i> prolonged outdoor exertion; everyone else, especially children, should <i>limit</i> prolonged outdoor exertion

8-HOUR OZONE HISTORICAL TRENDS

DFW Nonattainment Area

Based on ≤ 70 ppb (As of September 13, 2018)



Exceedance Level indicates daily maximum eight-hour average ozone concentration.
Exceedance Levels are based on Air Quality Index (AQI) thresholds established by the EPA for the revised ozone standard of 70 ppb.

Source: TCEQ, http://www.tceq.state.tx.us/cgi-bin/compliance/monops/8hr_monthly.pl
ppb = parts per billion

Regional Electric Vehicle (EV) Efforts

Dallas-Fort Worth Clean Cities

Clean Transportation, Made Easy



**Dallas-Fort Worth
CLEAN CITIES**



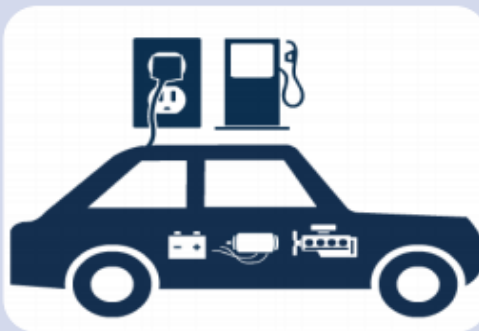
Website: www.dfwcleancities.org/evnt

EV BASICS & AVAILABILITY

Market Availability as of July 2018:
26 PHEVs
19 EV/PEVs



Hybrid
Electric
Vehicle (HEV)



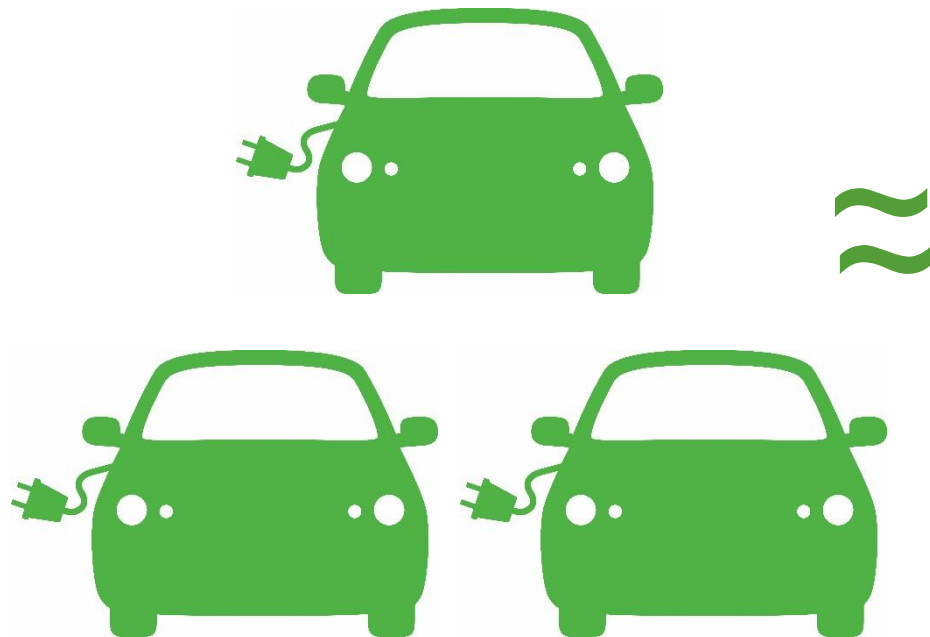
Plug-In
Hybrid
Electric
Vehicle
(PHEV)



All-Electric
Vehicle (EV)
or Plug-In
Electric
Vehicle (PEV)

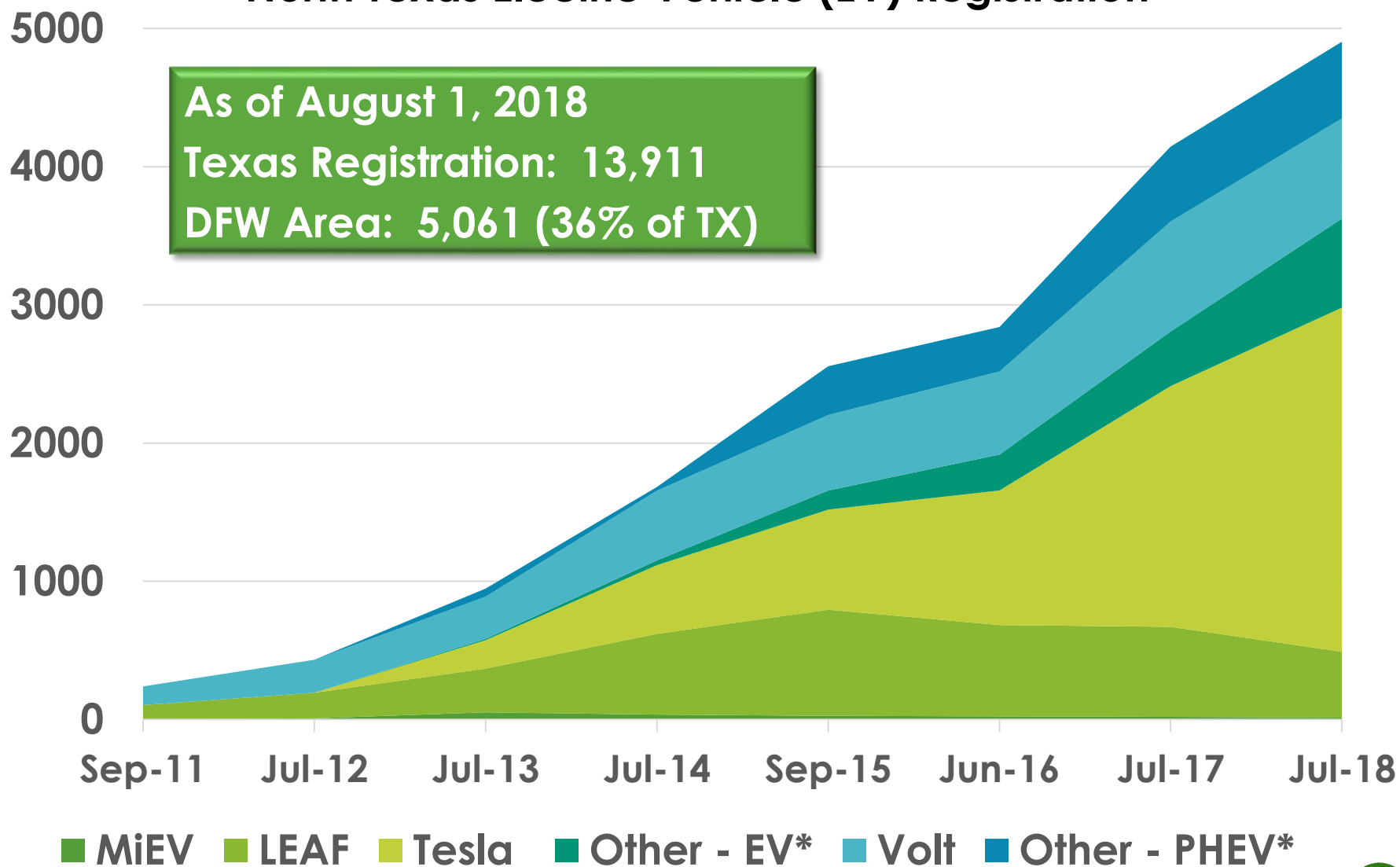
HOW DO EVs AFFECT THE GRID?

The Electrical Load of 3 EVs Is Approximately Equal to That of 1 Average House








REGIONAL EV TRENDS

North Texas Electric Vehicle (EV) Registration

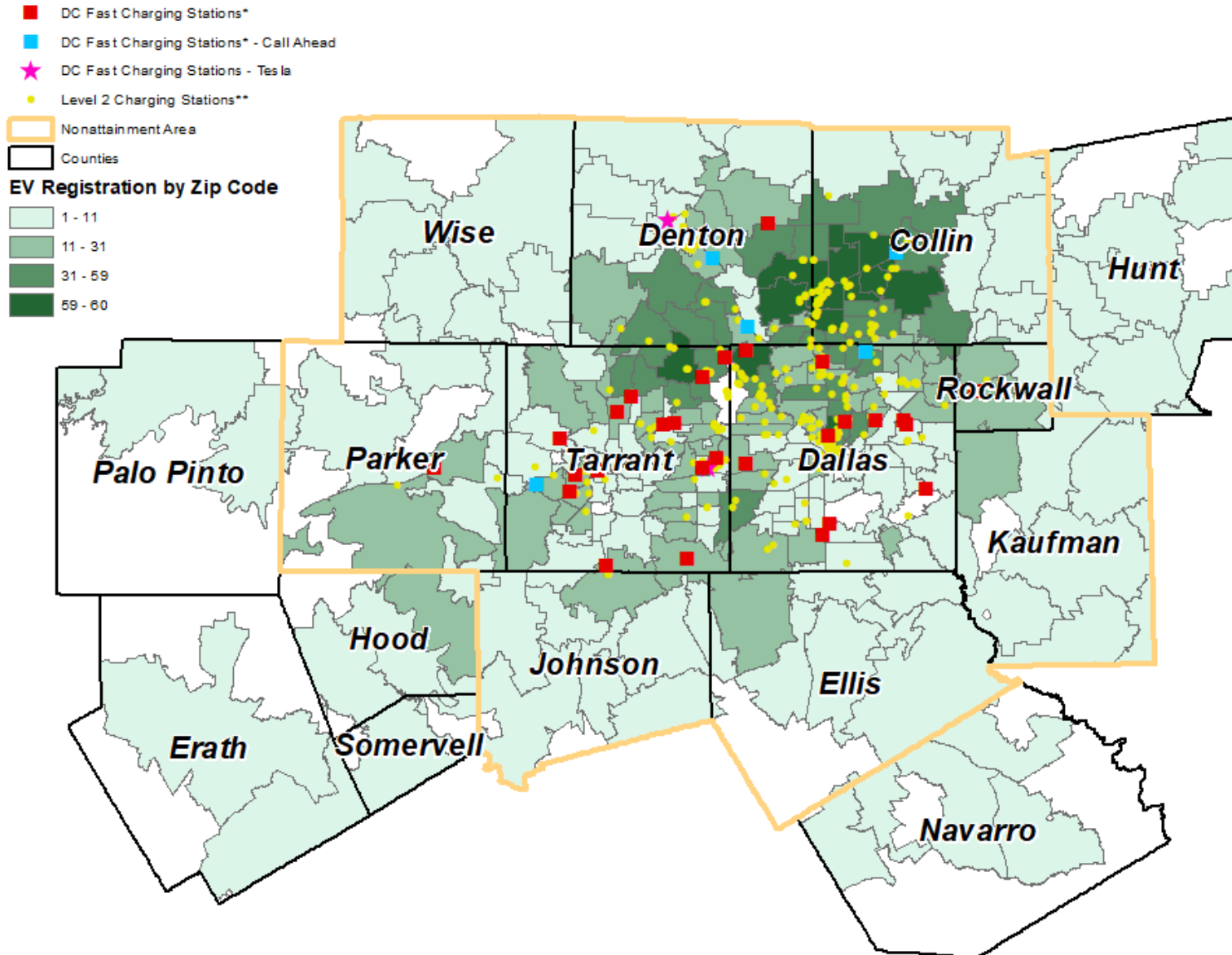


*Other EV includes the BMW i3, Chevrolet Bolt, Fisker Karma, Ford Focus Electric; Other PHEV includes the BMW i8, Ford C-Max Energi, Ford Fusion Electric, Chevrolet Bolt, Chevrolet Spark EV, Fiat 500e, and Mercedes B250e

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE)

Type		Specs	Range
Level 1	 <p>J1772 charge port</p>	AC 100-120 V 12 or 16 amps 1.44, 1.92 kWh	2 to 5 miles per 1 hour of charge
Level 2	 <p>J1772 charge port</p>	AC 208-240 V 16-80 amps 3.3-19.2 kWh	10 to 20 miles per 1 hour of charge
Level 3/DC Fast Charge	   <p>J1772 combo CHAdeMO Tesla combo</p>	DC 200-450 V ≤ 200 amps ≤ 90 kWh	60 to 80 miles per 20 minutes of charge

REGIONAL EV TRENDS AND STATIONS



*Note: DC Fast Charging Stations may include Level 2 Charging Stations

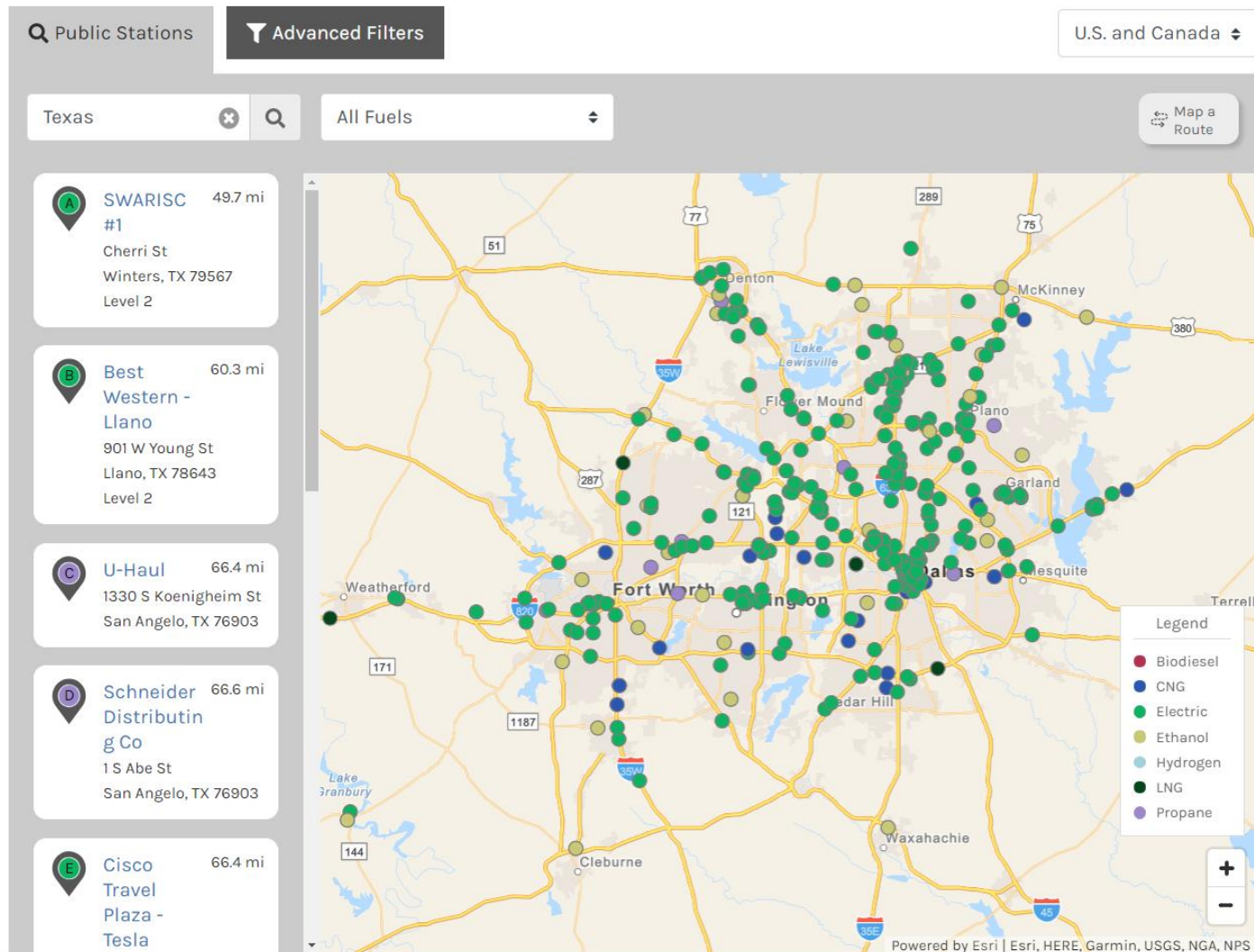
**Note: Level 2 Charging Stations may include Level 1 Charging Stations



North Central Texas
Council of Governments

July 2018

ALTERNATIVE FUELS DATA CENTER TOOLS: Station Locator and Route Planner



EV CHARGING LOCATIONS

Day in the life of an average car



An individual who has access to EV charging at work is

20X

More likely to buy a plug-in
- U.S. DOE

Funding Opportunities

CURRENT EV INCENTIVES

Vehicle Incentives	Amount	Agency
<u>Plug-In Electric Drive Motor Vehicle Credit</u>	Up to \$7,500	Federal
<u>Light-Duty Motor Vehicle Purchase or Lease Incentive Program (LDLIP)</u>	Up to \$2,500	State of Texas
<u>AirCheckTexas Drive a Clean Machine Program</u>	Up to \$3,500	Participating Counties
Total Possible Savings Per Vehicle**:		Up to \$13,500

****An Additional \$3,000 Rebate on a Nissan LEAF Available to Oncor Customers; Must Present Incentive Flyer**

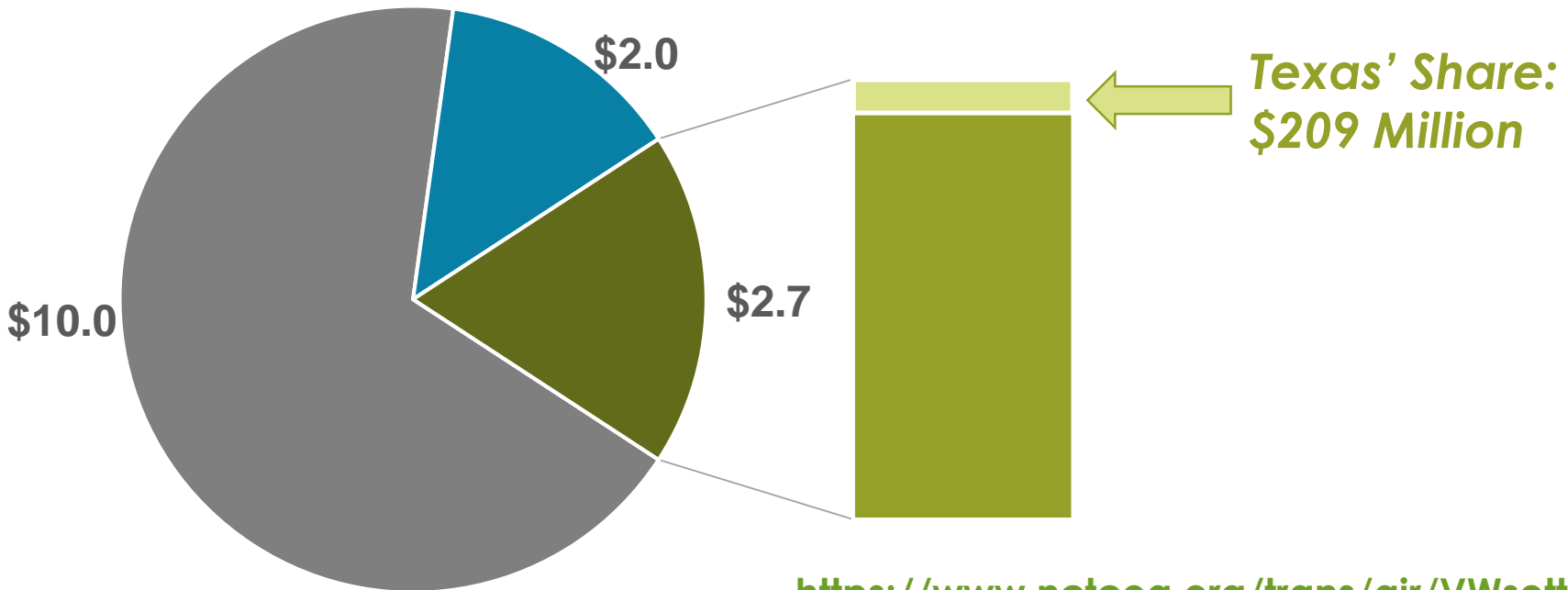
VOLKSWAGEN SETTLEMENT

Total Settlement to Date: \$14.7 Billion

Zero Emission Vehicle (ZEV) Investment - Managed by Electrify America

Environmental Mitigation Trust (EMT) - Distributed to States

Settlement Breakdown (\$ in Billions)



- Vehicle Buyback and Modification
- ZEV Investment
- Environmental Mitigation Trust

<https://www.nctcog.org/trans/air/VWsettlement/>
www.TexasVWFund.org

Regional Transportation Updates

WATCH FOR THESE TRANSPORTATION DEVELOPMENTS!!!

TEXRail – Anticipated Opening January 2019

Electric Transit Buses for DART and Trinity Metro

Autonomous Vehicle Projects – Arlington and Frisco

New Trail Segments Along Cotton Belt Rail Corridor

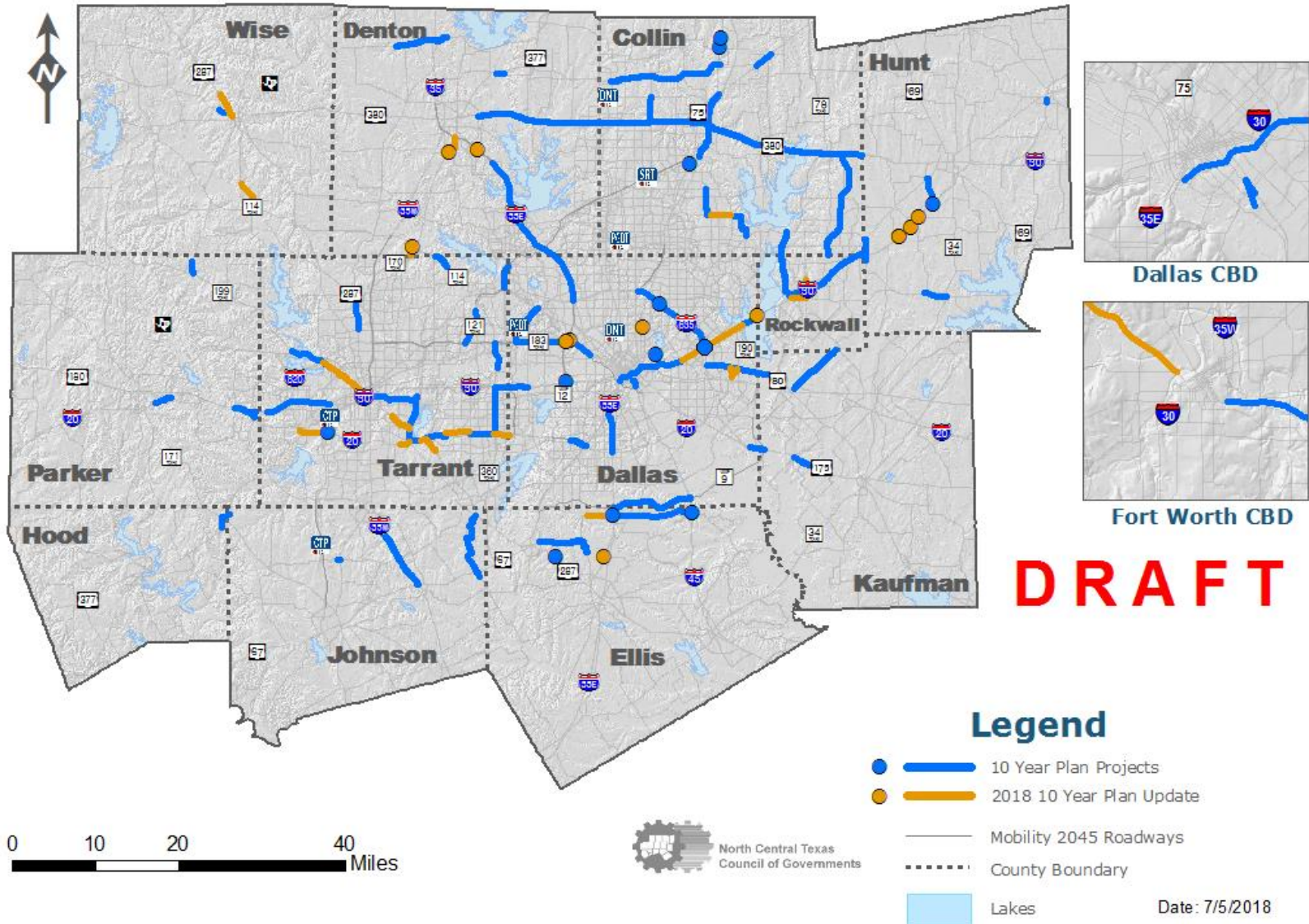
Reconstruction of I-635 East

**Find Major Transportation Plans at
<https://www.nctcog.org/trans/study>**

MEDIUM-RANGE PLANNING

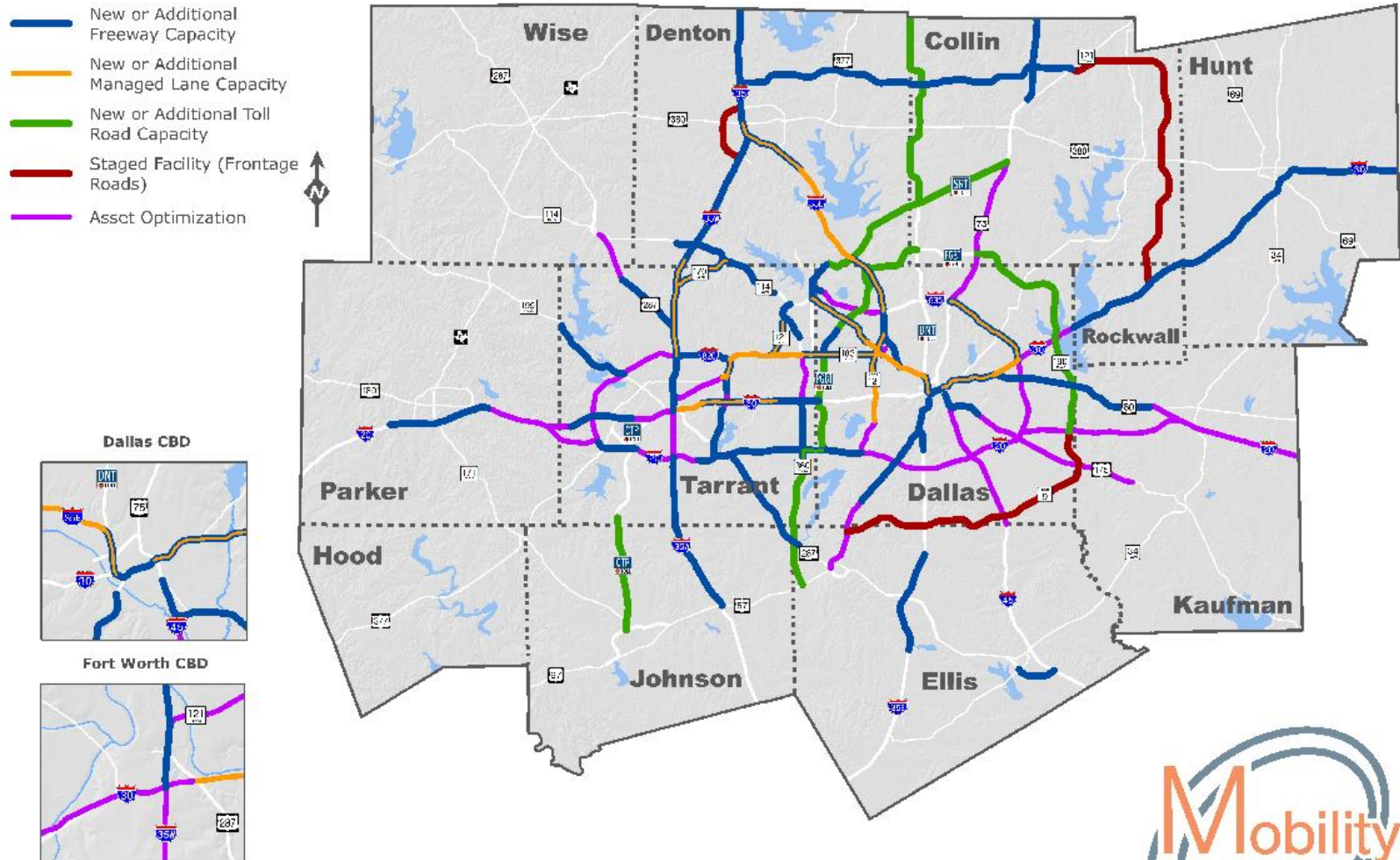
Dallas-Fort Worth Regional 10 Year Plan Projects

FY 2017 - FY 2028



LONG-RANGE PLANNING

Major Roadway Recommendations



LONG-RANGE PLANNING

Transit Corridor Projects

Rail

- 1 - Cotton Belt
- 2 - Cotton Belt East Extension
- 3 - Downtown Dallas Second Alignment (D2)
- 4 - Dallas Streetcar (Central Link)
- 5 - A-train South Extension
- 6 - Frisco Line
- 7 - Mansfield Line
- 8 - McKinney Line
- 9 - Midlothian Line
- 10 - Green Line Southeast Extension
- 11 - Cleburne Line
- 12 - Southwest TEX Rail
- 13 - Scyene Line
- 14 - Waxahachie Line

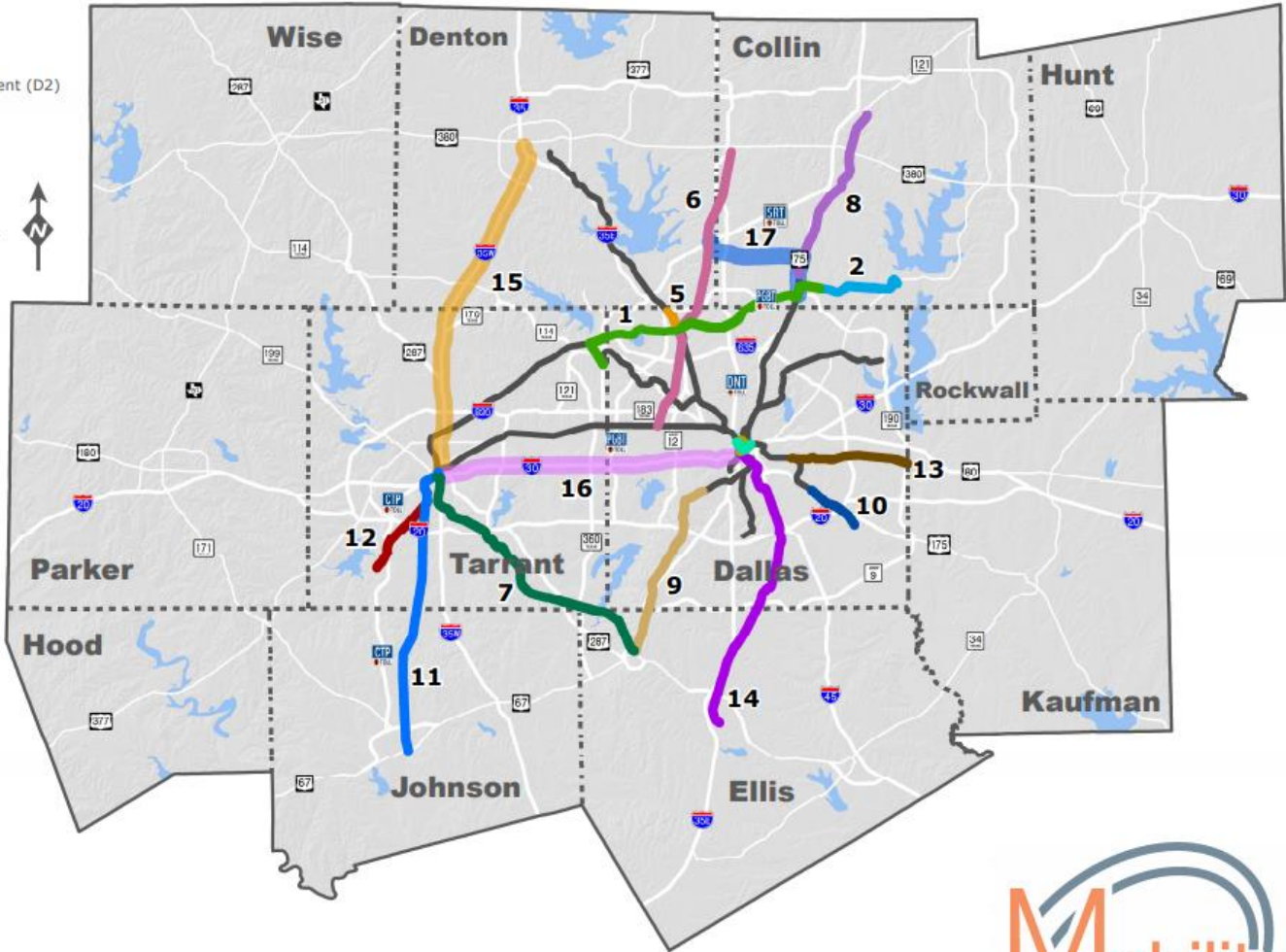
High-Intensity Bus

- 15 - IH 35W Express
- 16 - IH 30 Express
- 17 - Spring Creek Parkway
- Existing Rail

Dallas CBD



Fort Worth CBD



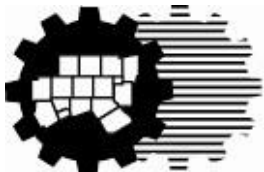
FOR MORE INFORMATION

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DFW Clean Cities and Electric Vehicles
www.dfwcleancities.org/evnt

Major Transportation Plans
<https://www.nctcog.org/trans/study>



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