

Auto Occupancy Detection Technology and HOV Rewards Program

Surface Transportation Technical Committee

September 28, 2018

Natalie Bettger



Project History

2012 – NCTCOG: Regional Transportation Council instructed staff to replace manual enforcement with more advanced technology verification equipment

2012 – NCTCOG: Technology Approaches to HOV Occupancy Declaration and Verification, Texas A&M Transportation Institute (TTI) Request for Information (RFI) for IH 30 Managed Lane Technology Occupancy detection and verification - Dynamic tracking of vehicles

2013 – NCTCOG: Reissue RFI with demonstration component

2014 – NCTCOG: TTI Update to White Paper and Proof of Concept Testing of In-Vehicle Technology

2014 – TxDOT/P3: Drive on TEXPRESS application

2015 – TxDOT Lead/NCTCOG Partner: Request for Offer - Automated Vehicle Occupancy Detection Solution

2016 – NCTCOG Lead/TxDOT Partner: TxDOT Requested NCTCOG to Take the Lead Request for Proposals - Auto Occupancy Detection and Verification Technology

Activities Implementing New Technology

July 2017

Issued Notice to Proceed with Carma Technology Corporation

August – December 2017

Pilot Test on DFW Connector Corridor

- 98.4% exact match in reported occupancy
- 1.6% indicates an “over count”

January – March 2018

Shared pilot results and worked with partners on back office integration

March – June 2018

Developed draft violation process and continued to work with partners on back office integration

July 2018

Met with TxDOT management on statewide interest

August 2018

Discussed rewards approach with partners

September 2018

RTC Workshop: Approach endorsed by Bill Hale, TxDOT Chief Engineer and several RTC members

HOV Rewards Program

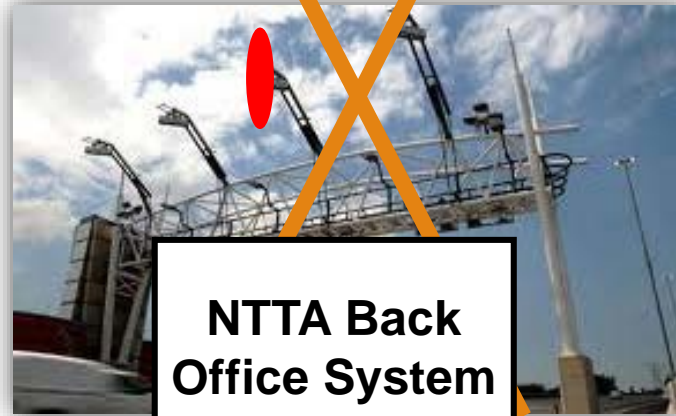
Register



Pre - Declare
Every Trip

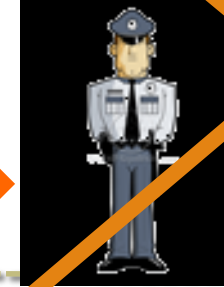


Occupancy Declaration
Sent to Field



NTTA Back
Office System
for Billing

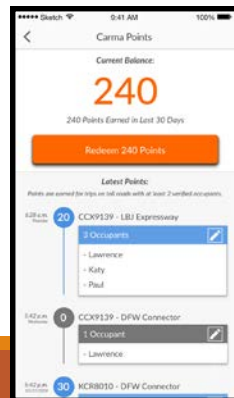
Officers Watch
for Red Light



Violation:
Legal
Process



Toll Collected



HOV
Clearinghouse

- Receive Transaction File(s)
- Carma Active Tags/Plates API
- Select Carma User Transactions
- Carma Occupancy API
- Send Differential File(s)

Rewarding HOV

Implementation Phases

Phase 1 - Managed Lane Rewards

- HOV Points = 50% of actual toll transaction
- Support for all 8 managed lanes in DFW (Cintra & TransCore operated roads)

Phase 2 - US 75 Technology Lane

Phase 3 and Beyond - Corridor & Event Rewards

- HOV Points for HOV travel on specific road segments for any event purpose
- Support for any road segment (including toll roads), any day of week and 24/7/365, any area
- Support for other modes (transit, bicycles, pedestrians)
- Cash-out options and gamified tiers (e.g. Amazon e-credit, Visa cards, check, cash)
- Integrate with other rewards applications (e.g. Try Parking It)

DFW Expected Program Costs (10 Years)

Phase	Year	Technology*	Marketing	Integration	Total
Development/ Pilot Testing	2016- 2018	\$ 3,150,000		\$850,000	\$4,000,000
Implementation (10 Years)	2019- 2028	\$16,000,000	\$3,000,000	\$1,000,000	\$20,000,000
Total		\$19,150,000	\$3,000,000	\$1,850,000	\$24,000,000

*Technology includes system hardware, user beacons, app maintenance, and system operation. The cost might change. Costs do not include HOV rewards.

Direct Cost Comparison

Estimated Direct Costs with Existing System (10 Years)	
Manual Enforcement	\$15,245,452
Enhancement to TEXPress Application	\$5,927,285
Marketing and Education	\$2,000,000
Total	\$23,172,737
Expected Total Cost for New System (10 years)	
New Technology Operating and Marketing Cost	\$20,000,000

*Does not include indirect benefits such as safety, traffic flow, and legal savings.

Indirect Benefits

Automated Vehicle Occupancy Verification



Safety



Privacy Protection



Reliability/Compliance



Expandability



Easy to Use



Return on Investment

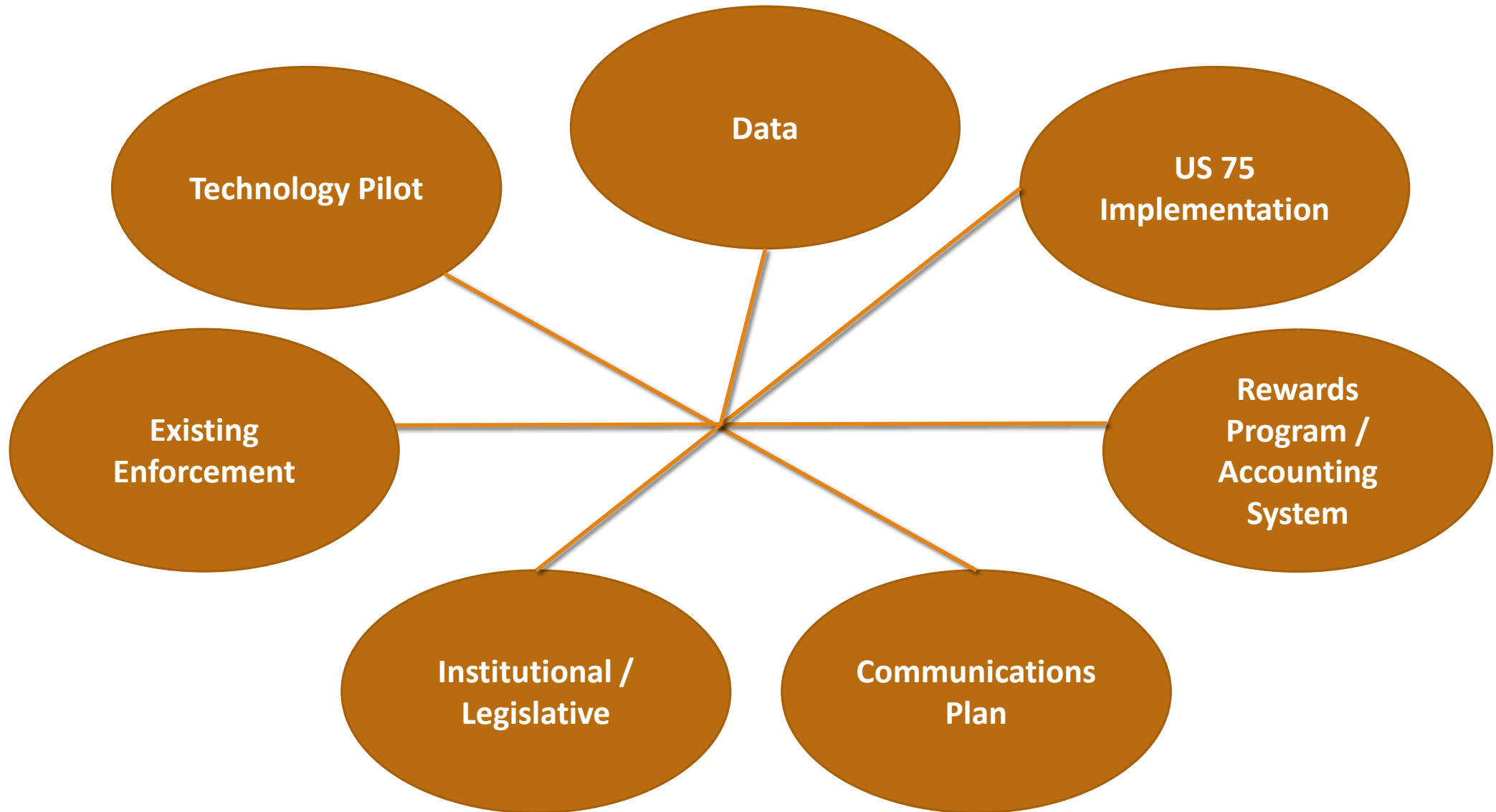


Air Quality/Congestion Benefits



Legal/Court

Continue Monitoring through Implementation Process



HOV Subsidy Reimbursement by Corridor

Corridor	Current Program	Proposed Program
P3 Operated		
LBJ	RTC Funded**	RTC Funded
NTE	RTC Funded**	RTC Funded
TxDOT Operated		
IH 635 East	No Reimburse, Not Collected	TxDOT Passthru*
DFW Connector	No Reimburse, Not Collected	TxDOT Passthru*
IH 30	No Reimburse, Not Collected	TxDOT Passthru*
IH 35E	No Reimburse, Not Collected	TxDOT Passthru*
Midtown Express	No Reimburse, Not Collected	TxDOT Passthru*
Future Facilities	No Reimburse, Not Collected	TxDOT Passthru*

*Additional toll revenue will be collected on these corridors and rewards will be paid from this additional revenue.

**\$17,590,000 total approved by RTC; ~ \$15,000,000 as of May 2018; Source: Regional Toll Revenue.

Possible Adjustments to Tolled Managed Lane and Express Lane/HOV Policies

Replacing Subsidy with Rewards

Transition from Manual Enforcement to Automated Verification
- Eliminating the Court System

Draft Schedule

August/September 2018 – Surface Transportation Technical Committee

September – Regional Transportation Council Workshop

September/October 2018 – Regional Transportation Council

October 2018 – Begin Implementation of Communication Plan

Fall 2018 – TxDOT Endorsement for Application for DFW and Statewide

Soft Launch; **December 2018**, 10-15 regular users for each managed lane

Full Launch; **February 2019**, all managed lanes in DFW

Action Requested

1. Recommend RTC approval of new HOV Rewards approach.
2. Recommend RTC approval of \$5,000,000 to fill the funding gap for three (3) years of implementation cost (FY19, 20, and 21). Bring back future year requests for FY22 and beyond.
3. Direct staff to administratively amend the TIP and other funding, planning, and administrative documents to reflect this action.

Contacts

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Action Requested

1. Recommend RTC approval to pursue occupancy verification technology and pilot testing.
2. Recommend RTC approval of \$5,000,000 to fill the funding gap for three (3) years of implementation cost (FY19, 20, and 21). Bring back future year requests for FY22 and beyond.
3. Evaluate feasibility and cost savings of another incentive based program that considers:
 - Data Security
 - US 75 Implementation
 - Rewards Program / Accounting System
 - Communications Plan
 - Institutional / Legislative Items
 - Existing Enforcement
 - Technology Pilot
 - TxDOT Funding in Non-Concession Corridors
4. Direct staff to administratively amend the TIP and other funding, planning, and administrative documents to reflect this action.

There are no completion schedules for these activities.

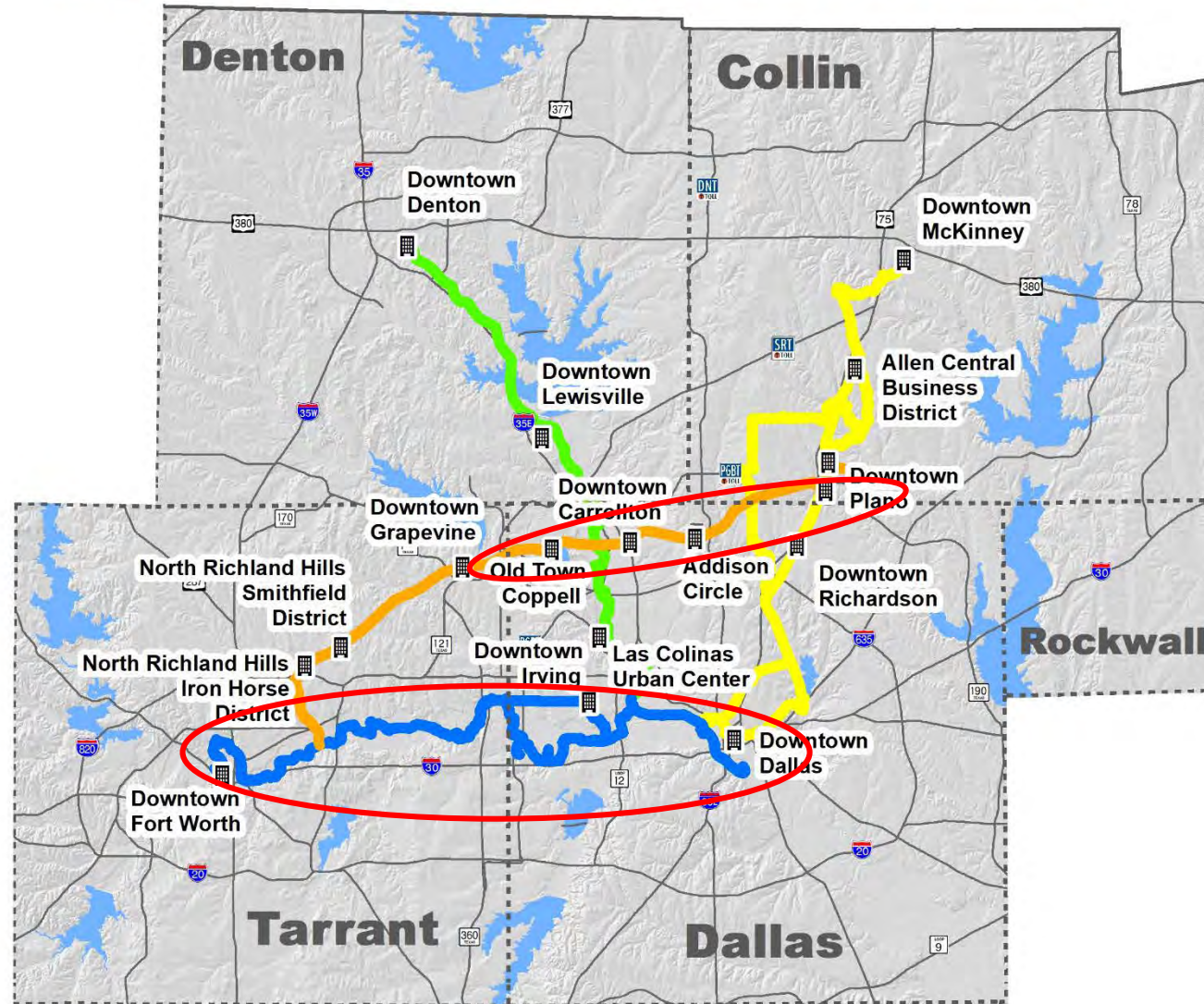
IMPLEMENTATION OF REGIONAL VELOWEB TRAIL CORRIDORS





Last-Mile Connections to Transit

Kevin Kokes, AICP



Highlighted Regional Trail Corridors



-  Fort Worth to Dallas Regional Trail Corridor
-  Cotton Belt Regional Trail Corridor
-  Dallas to McKinney Regional Trail Corridor
-  Denton to Dallas Regional Trail Corridor

Existing/Funded	Planned	Total
52 miles	12 miles	64 miles
16.5 miles	28.5 miles	45 miles
67 miles	15 miles	82 miles
41 miles	13 miles	54 miles



Background

Fort Worth to Dallas Regional Veloweb Trail

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- December 1996** Regional Veloweb alignment included in Mobility 2020
- November 2013** Five Mayors meet and commit to implement the 64-mile Regional Veloweb alignment (24.5 miles need funding)
- 2014 to 2018** 18.5 miles of trail with funding commitments (variety of sources)
- Summer/
Fall 2018** Funding request of RTC for 3.1 miles to complete a continuous 53-mile alignment connecting the five cities
- 1.4 miles from CentrePort TRE Station to Grand Prairie city limits
 - 1.7 miles from Fort Worth city limits to Mike Lewis Trail



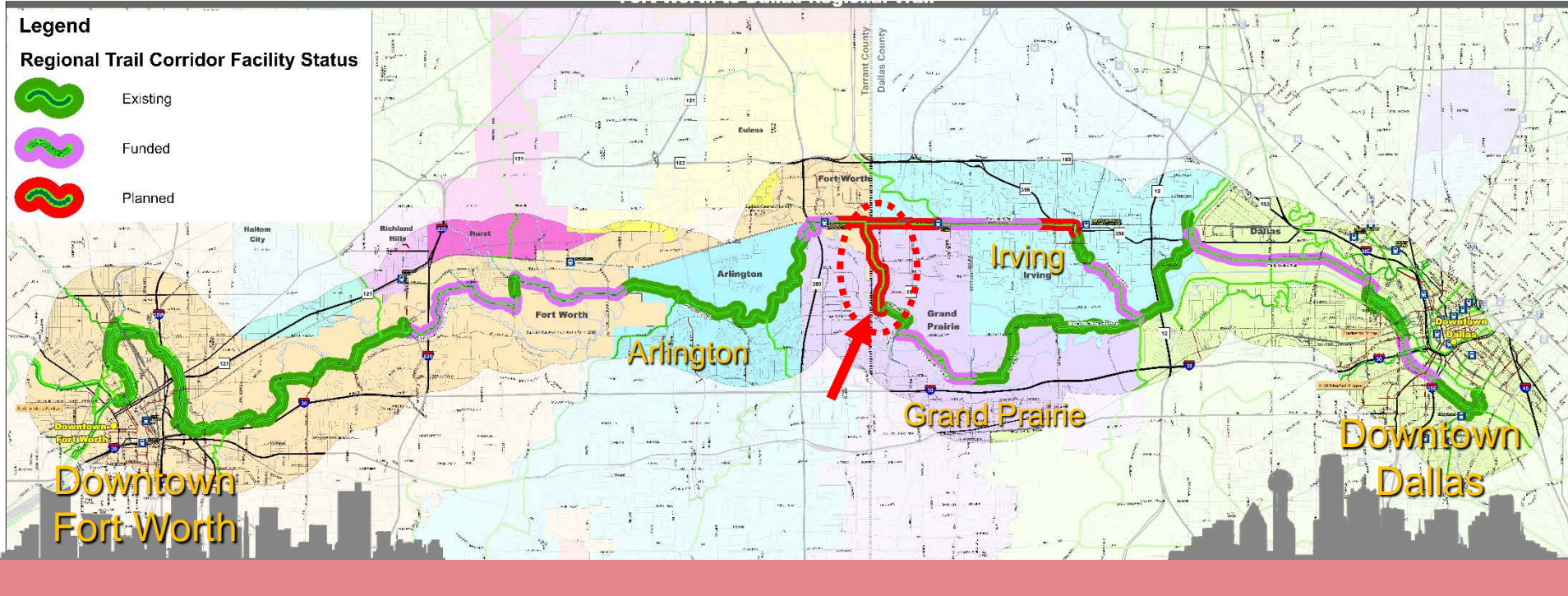
Mayors (from left) Mike Rawlings, Dallas; Robert Cluck, Arlington; Betsy Price, Fort Worth; Ron Jensen, Grand Prairie; and Beth Van Duyne, Irving, met recently to discuss connecting their cities with a regional bicycle-pedestrian trail corridor.

Fort Worth To Dallas Regional Veloweb Trail



Total

Existing and Funded	21.9 miles	7.4 miles	6.4 miles	11.9 miles	10.4 miles	58 miles
Planned and Unfunded	1.4 miles	0	3.3 miles	1.3	0	6 miles



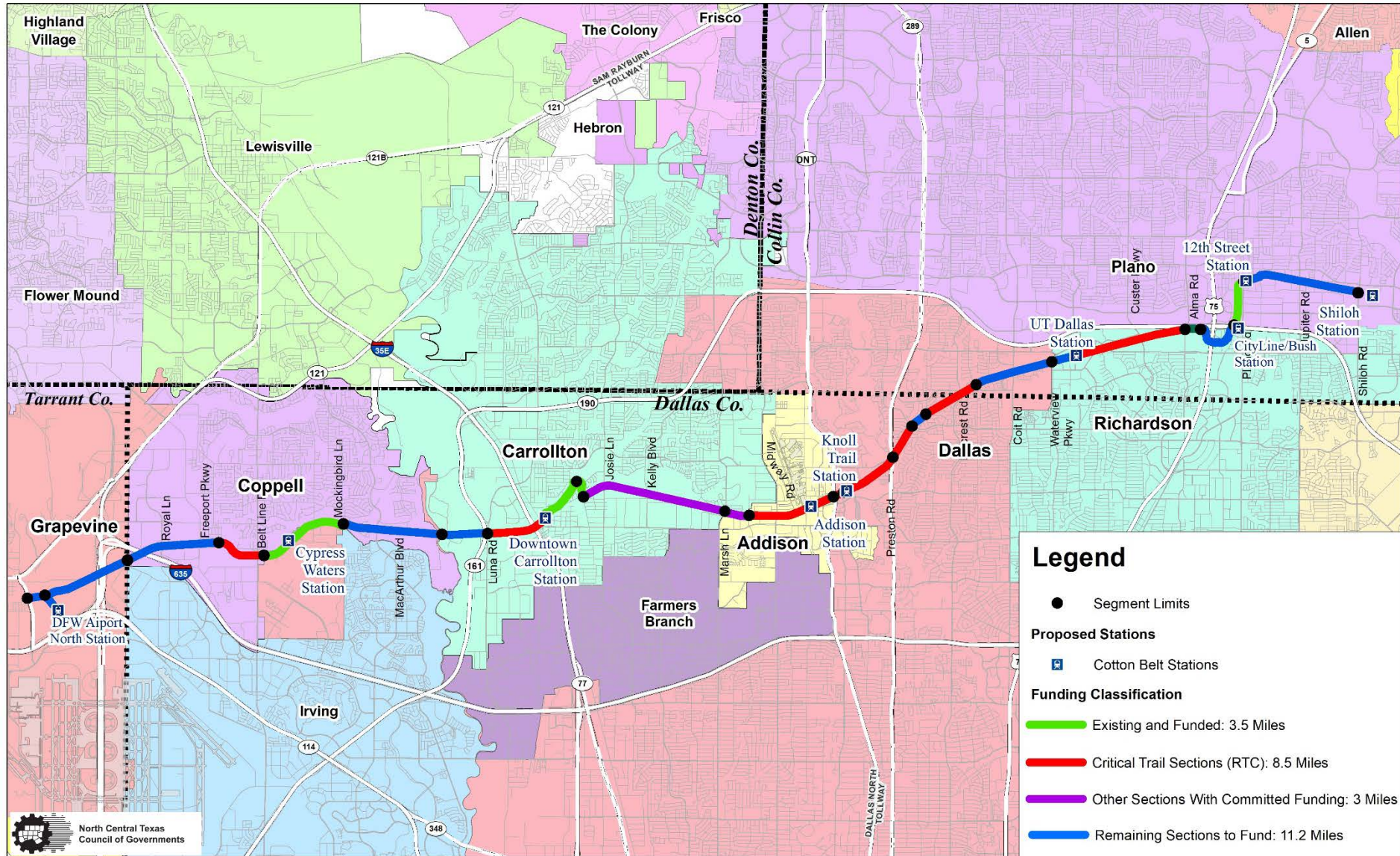
Background

Cotton Belt Regional Veloweb Trail (DFW Airport to Plano)

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- | | |
|------------------------------|---|
| December 1996 | Regional Veloweb alignment included in Mobility 2020 |
| 2017 - 2018 | NCTCOG, DART, and local jurisdictions coordinate opportunities for trail environmental clearance, design, and funding to construct “critical” trail sections |
| Summer/
fall 2018 | Funding requested of RTC for trail: <ul style="list-style-type: none">• Design (26-mile corridor) and• Construction (8.5 miles of “critical” trail sections) |
| Early 2019 | DART design/build contractor begins design and construction phases |

Cotton Belt Regional Veloweb Trail Sections



Summary of Proposed Funding for Regional Trail Implementation

Regional Trail Corridor	Total	Federal	Local	TDCs
Fort Worth To Dallas Regional Trail (Fort Worth and Grand Prairie Sections)	\$10.0M	\$9.08M	0.92M	1.08M
Cotton Belt Regional Trail (design for entire 26 mi. corridor)	\$8.20M	\$8.20M	-	1.64M
Cotton Belt Regional Trail (construction of “critical” sections)	\$21.27M	\$19.46M	\$1.81M	2.44M
Cotton Belt Trail Total	\$29.47M	\$27.66M	\$1.81M	4.08M
Combined Total Both Corridors	\$39.47M	\$36.74M	\$2.73M	5.16M

Schedule for Funding Request

	Date
BPAC Briefing	8/15/18
STTC Information Item	8/24/18
Public Meetings	Early September
RTC Information Item	9/13/18
STTC Action	9/28/18
RTC Action	10/11/18
All Local and State Funding Commitments in Place	December 2018

Requested Action

Action Requested:

- Recommend RTC approval of the \$36.74M and the use of 5.16M TDCs as outlined in slide 7 and Electronic Item 4.1
- Direct staff to administratively amend the TIP and other funding, planning, administrative documents to reflect this action

Contact Information

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Regional Trail Web Pages

Cotton Belt Regional Trail:

nctcog.org/CottonBeltTrail

Fort Worth to Dallas Regional Trail:

nctcog.org/FWtoDALtrail

Automated Vehicle Program 2.0

Surface Transportation Technical Committee



**Thomas Bamonte
September 28, 2018**



1900



1913

5th Avenue, New York City

Project #1: AV Planning

NCTCOG procures planner(s) to assist public entities attracting or facing AV deployments

Planner(s) on retainer

Grant size tied to metric(s)—e.g., city population/deployment scale

Total: **Up to \$1.5M**, plus NCTCOG administration (\$200K approx.)

Funding source: Anticipate federal

Project #2: AV Deployment Cost Coverage

Cover costs associated with public entity hosting an AV deployment

Grants payable upon actual AV deployment

Total: **Up to \$10M**, plus NCTCOG administration (\$600K approx.)

Funding source: TBD

Project #3: Regional Priority AV Planning Deployments

Fund AV deployments for use cases not served by AV developers

Competitive project selection

Total: **Up to \$20M**, plus NCTCOG administration (\$900K approx.)

Funding source: Anticipate federal

Voluntary Program: Process

1. Public entities express interest in hosting AV deployments.
2. Respondents eligible for grants.
3. Advance paperwork done to help ensure greatest possible cost coverage.
4. Public entities can join AV 2.0 Program at any time.

Associated Policies: P18-01

1. North Texas will build on its history of transportation innovation to be a leader in the deployment of automated vehicles (AVs) to help achieve the region's mobility goals.
2. All North Texas communities should have the resources necessary to plan for AV deployments and to build effective partnerships with AV developers when they deploy AVs in a community.
3. The region will make strategic investments in AV services to explore use cases and AV deployments in communities overlooked by AV developers.
4. The AV 2.0 Program will be administered to advance these policies.

Schedule

STTC Briefing

August 2018

Public Meetings

September 2018

RTC Briefing

September 2018

STTC Action

September 2018

RTC Action

October 2018

TIP Process Complete

April 2019

Funding Available

Late 2019

Action Requested

STTC recommendation that RTC approve Automated Vehicle Program 2.0 and associated policies (P18-10).

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Status Report on Positive Train Control Implementation

Surface Transportation Technical Committee

September 28, 2018

Shannon Stevenson, Program Manager, NCTCOG

Reed Lanham, Vice President of Strategy and Technology, Trinity Metro



North Central Texas
Council of Governments



Background

- ▶ Positive Train Control (PTC): complex communications technology designed to make rail safer by preventing collisions and other incidents by automatically detecting and controlling the movement of trains.
- ▶ October 16, 2008: Congress passed the Rail Safety Improvement Act of 2008 requiring the installation of PTC technology on a majority of the US Railroad network, including all commuter rail, by December 31, 2018, or apply for an Alternative Schedule by that date.
- ▶ Fiscal Year 2014: Regional Transportation Council Provided \$25 Million for PTC
 - ▶ \$12.5 Million to Dallas Area Rapid Transit (DART) for the Trinity Railway Express (TRE)
 - ▶ \$12.5 to Denton County Transportation Authority (DCTA) for the A-Train
- ▶ Limited Contractors: Delays in installation resulting from a limited number of contractors with the expertise to install PTC.

Criteria for Alternative Schedule

- ▶ Two-year Extension May be Granted if Certain Criteria Met by December 31, 2018
 - ▶ Hardware Installation Completed
 - ▶ All Spectrum Acquired, if Applicable
 - ▶ Sufficient Training Completed
 - ▶ Revenue Service Demonstration (RSD)
 - ▶ RSD Initiated
 - ▶ Met Any Other Criteria Established by FRA (i.e., Substitute Criteria)
 - ▶ Submit Alternative Schedule Demonstrating PTC Implementation by December 31, 2020
 - ▶ Certified in Writing to be Compliant by December 31, 2020

Implementation Status of Commuter Rail in North Central Texas*

Commuter Line	Total Hardware Installed	Onboard (Trains) Hardware Installed	Wayside (Signals) Hardware Installed	All Spectrum Acquired?	Sufficient RSD Initiated?	Employees Trained	On Track to Meet Deadline**?	Status
DCTA's A-train	100%	11/11	121/121	N/A	No	20/50	RSD Request Submitted	✓
TRE	52%	6/34	30/35	Yes	No	0/80	No Request Submitted Yet	?
<i>Coming Soon</i>								
TEXRail	Expected to be Operational 2019 Will Meet Criteria for Alternative Schedule							✓
Cotton Belt	Expected to be Operational 2022 All Required Technology to be included in RFP							✓

*Source: Federal Railroad Administration as of June 30, 2018

**Deadline to Meet Criteria for Alternative Schedule

Trinity Metro Regional PTC Update

► Development of Revised Regional Strategy

Trinity Metro Lead	DART Lead
Wabtec System Integration Contract	Spectrum - PTC220 LLC
<ul style="list-style-type: none">• Dispatch (TRE/TEXRail)	Radios - Meteorcomm LLC
<ul style="list-style-type: none">• Back Office System (TRE/TEXRail)	Insurance
<ul style="list-style-type: none">• On Board - Rolling Stock	TRE Wayside Fiber Upgrade
<ul style="list-style-type: none">• Systems Integration/Testing	
<ul style="list-style-type: none">• TEXRail Only Items	
<ul style="list-style-type: none">• Wabtec PTC Hosting Contract	

Trinity Metro Regional PTC Contract - Wabtec, Inc.

- ▶ Total proposed contract value: \$39,180,231

Total	TRE	TEXRail
\$39,180,231	\$24,170,173	\$15,010,050

- ▶ Signed December 18, 2017

TRE Status



TEXRail Status

- ▶ Implementation deadline for new passenger rail service beginning after December 31, 2018 is December 31, 2020.
- ▶ PTC Progress
 - All wayside interface units (WIUs) have been installed
 - 1st ever onboard kit for the Stadler FLIRT DMU has been produced and will be installed in 2 weeks
 - PTC Wayside design is at 90%
 - Dispatch and PTC Back Office System (BOS) are being implemented with TRE
 - With the alignment nearing completion, the survey for all critical features is scheduled for December 2018.

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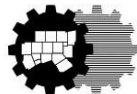
North Central Texas
Council of Governments



Performance Measures Target Setting

**Surface Transportation Technical
Committee**

September 28, 2018



Regional Strategy

Implement Required Federal Measures

National Performance

Support TxDOT Targets as Much as Possible

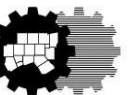
State Performance

Set Additional Goals to Support Mobility 2045

Regional Performance – Tell Our Story

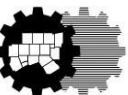
Include in Mobility Plan

Include in Transportation Improvement Program (TIP)



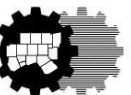
Federal Measures Target Status

Complete	Rulemaking	Number of Measures	MPO Target Setting Deadline	Reporting Period	Reporting Schedule
✓	Transit Asset Management	4	12/27/2017	Annually	Annually
✓	Safety (PM1)	5	2/27/2018	Annually	Annually
	Pavement and Bridge (PM2)	6	11/15/2018	Four-Year Performance Periods (starting 2018-2022)	Biennially (beginning, middle, and end of performance periods)
	System Performance (PM3)	6	11/15/2018	Four-Year Performance Periods (starting 2018-2022)	Biennially (beginning, middle, and end of performance periods)

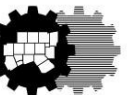
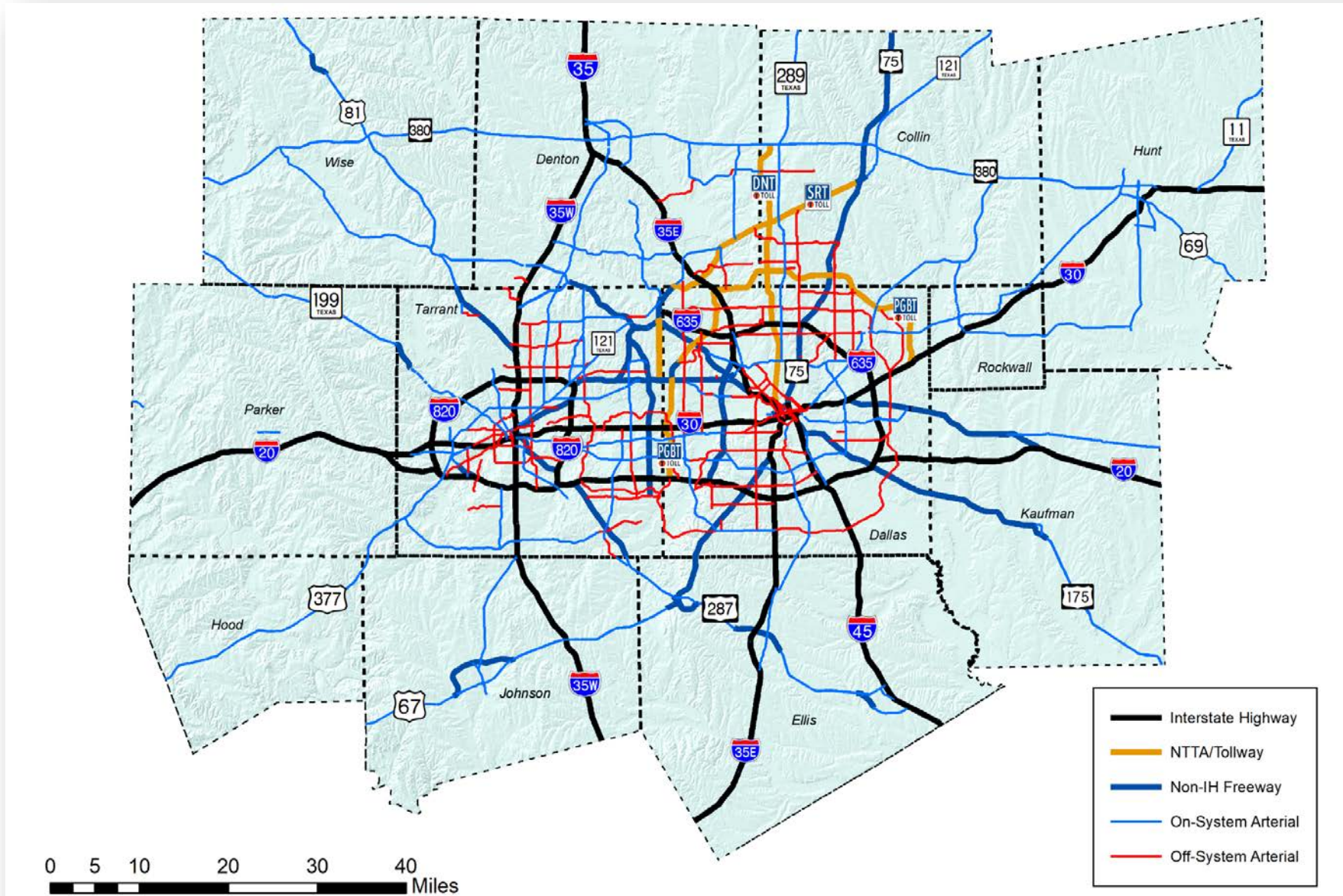


Regional Roadway System Components

Roadway Categories	Lane Miles		VMT*	
National Highway System (NHS)				
Interstates (on-system)**	3,215	25.9%	56,949	41.7%
Non-Interstate Freeway (on-system)**	1,669	13.4%	32,233	23.6%
Toll Roads (off-system)	827	6.7%	10,704	7.8%
Arterials (on-system)**	3,767	30.3%	22,963	16.8%
Arterials (off-system)	2,959	23.8%	13,619	10.0%
*VMT presented in thousands				
**On-system refers to the TxDOT System				



National Highway System Within MPA



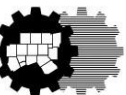
Pavement – Good Condition

DRAFT

State of Texas: Roadway Categories	Total NHS Network (%)	2018 Baseline Good Condition (%)	2022 Target Good Condition (%)
Interstate NHS	19.19%	66.80%	66.40%
Non-Interstate NHS	80.81%	54.40%	52.30%

NCTCOG supports TxDOT statewide 2022 “Good Condition” targets for NHS pavements

Analysis of data for NCTCOG region indicates compatibility across all NHS roadway categories



Pavement – Poor Condition

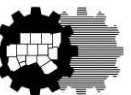
State of Texas: Roadway Categories	Total NHS Network (%)	2018 Baseline Poor Condition (%)	2022 Target Poor Condition (%)
Interstate NHS	19.19%	0.30%	0.30%
Non-Interstate NHS	80.81%	13.80%	14.30%

NCTCOG Region: NHS Roadway Categories	Total NHS Network (%)**	2018 Baseline Poor Condition (%)***	2022 Target Poor Condition (%)***
Interstates (on-system)*	25.90%	5.81%	7.99%
Non-Interstate Freeway (on-system)*	13.40%	6.76%	8.93%
Toll Roads (off-system)	6.70%	8.43%	9.32%
Arterials (on-system)*	30.30%	18.52%	18.39%
Arterials (off-system)	23.80%	73.66%	69.82%

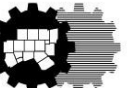
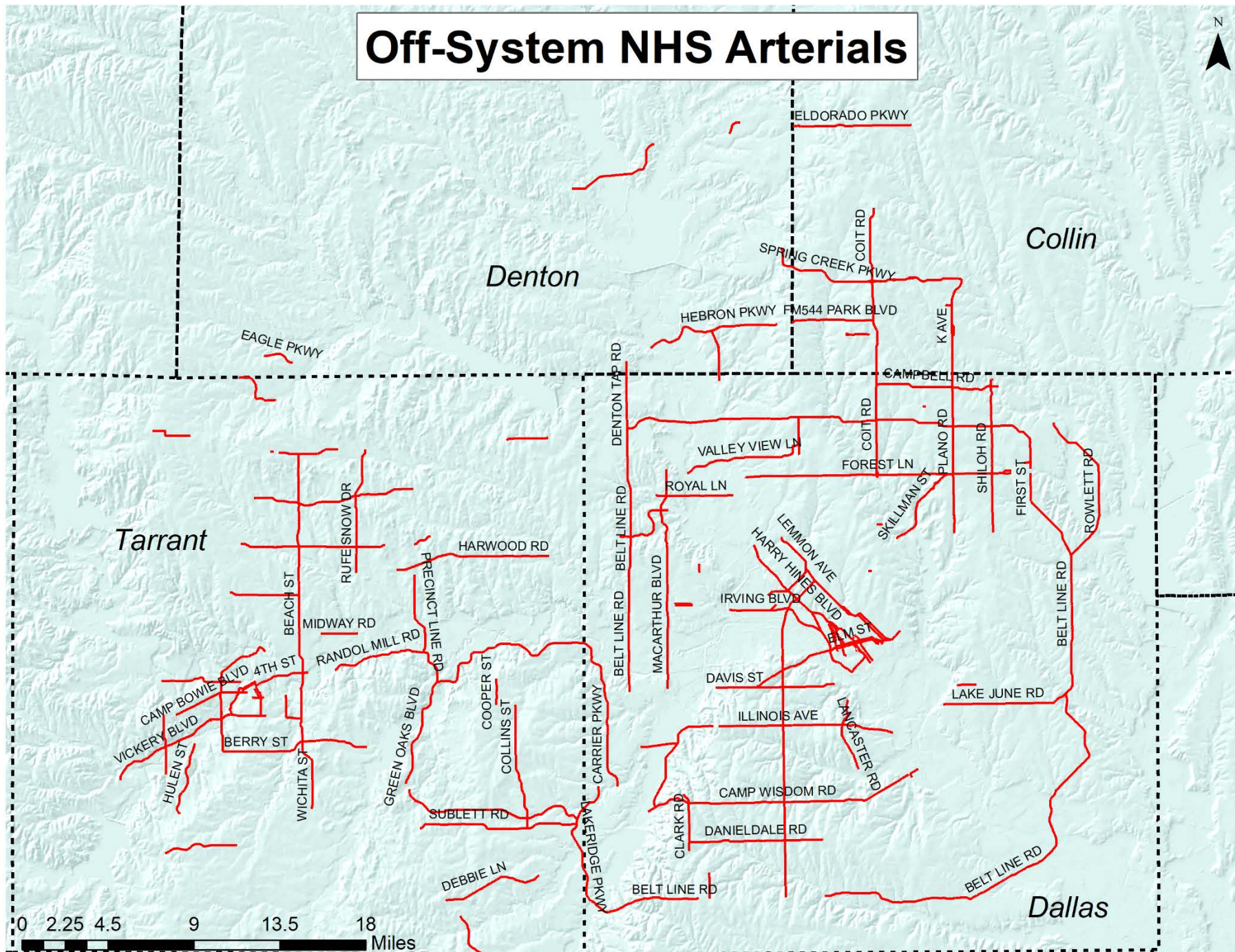
*On-system refers to the TxDOT System

**Mobility 2045 Plan – 2018 Baseline Network Lane-Miles

***Based on 5-year moving average



Off-System NHS Arterials



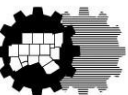
Pavement – Poor Condition

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NCTCOG supports TxDOT statewide 2022 “Poor Condition” targets for NHS pavements

Collaboration with TxDOT to plan & program projects contributing toward accomplishment of pavement goals will also include the following action:

NCTCOG will work with local governments to focus on improvement of NHS Off-System Arterials in poor condition



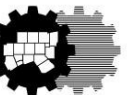
Bridges – Good/Poor Condition

State of Texas	2018 Baseline Good Condition (%)	2022 Target Good Condition (%)
All NHS Facilities*	50.63%	50.42%

State of Texas	2018 Baseline Poor Condition (%)	2022 Target Poor Condition (%)
All NHS Facilities*	0.88%	0.80%

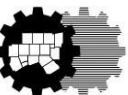
*Based on total deck area

Analysis of data for NCTCOG region indicates compatibility across all NHS roadway categories



Bridges – Poor Condition Location/Status

Facility Carried	Feature(s) Crossed	County	NHS Category	Under Construction?	TIP?	UTP?	MTP?
IH 345 SB	IH 30, US 75, & DART Rail	Dallas	Interstate	Yes	Yes	Yes	Yes
IH 345 NB	IH 30, US 75, & DART Rail	Dallas	Interstate	Yes	Yes	Yes	Yes
SH 310	S. Lamar Street, Budd Street, & UP R/R	Dallas	On-System Arterial	No	Yes	Yes (CAT 6)	Yes
Belt Line Rd	Goff Branch	Dallas	Off-System Arterial	No	No	Yes (CAT 6)	Yes
Loop 12 NB to IH 35E NB	IH 35E SB	Dallas	Non-IH Freeway	No	No	No	Yes
IH 30 EB	FM 2642	Hunt	Interstate	Yes	Yes	Yes	Yes
IH 30 WB	FM 1903	Hunt	Interstate	No	No	Yes	Yes
IH 30 EB	FM 1903	Hunt	Interstate	No	No	Yes	Yes
IH 30	FM 1565 O-P	Hunt	Interstate	No	No	Yes	Yes
IH 35W SB	IH 35W SB Alvarado Exit	Johnson	Interstate	No	No	Yes (CAT 6)	Yes
US 80 EB	E FK TRIN REL 1 & SRV RD	Kaufman	Non-IH Freeway	No	Yes	Yes	Yes
US 80 EB	East Fork Trinity River	Kaufman	Non-IH Freeway	No	Yes	Yes	Yes
US 80 WB	Buffalo Creek Relief	Kaufman	Non-IH Freeway	No	No	Yes (CAT 6)	Yes
US 287 NB	Carey Street	Tarrant	Non-IH Freeway	No	Yes	Yes	Yes



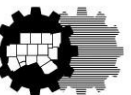
Bridges – Good/Poor Condition

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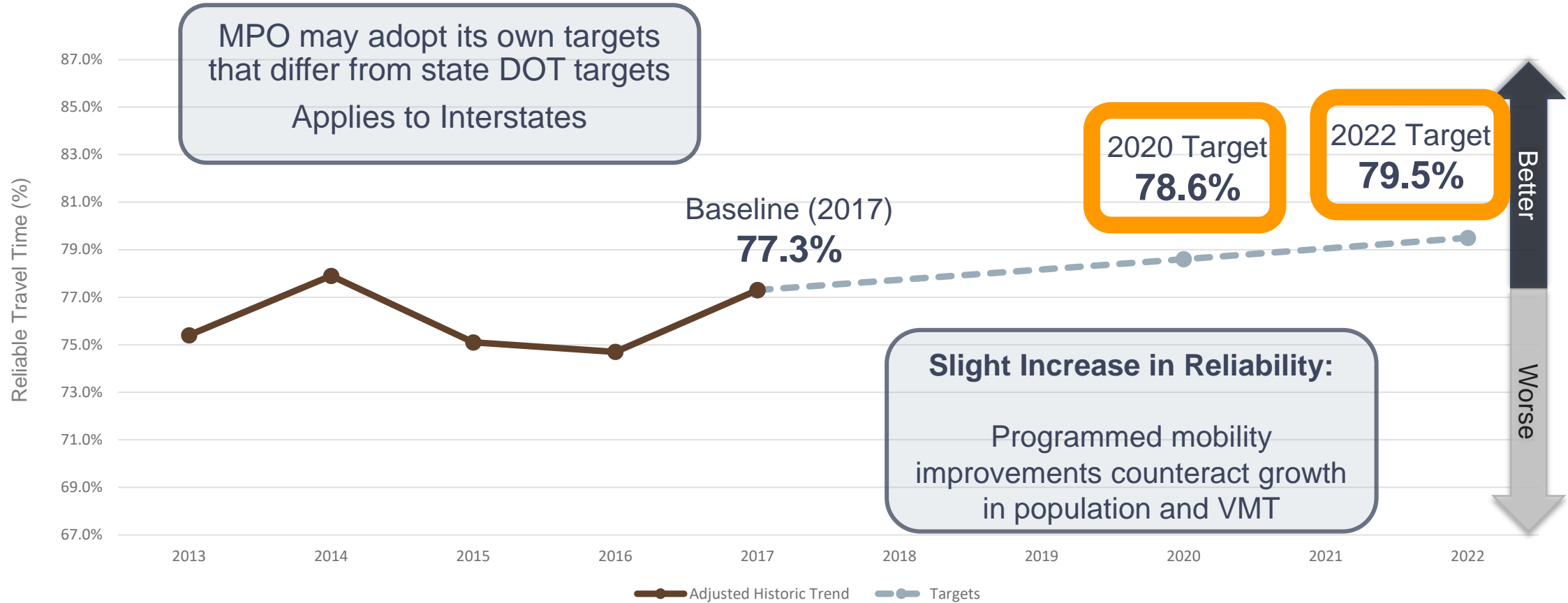
NCTCOG supports TxDOT statewide 2022
“Good/Poor Condition” targets for NHS bridges

Collaboration with TxDOT to plan & program
projects contributing toward accomplishment of
pavement goals will also include the following
action:

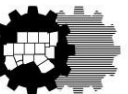
NCTCOG will focus on expedited programming to improve
NHS bridges in poor condition



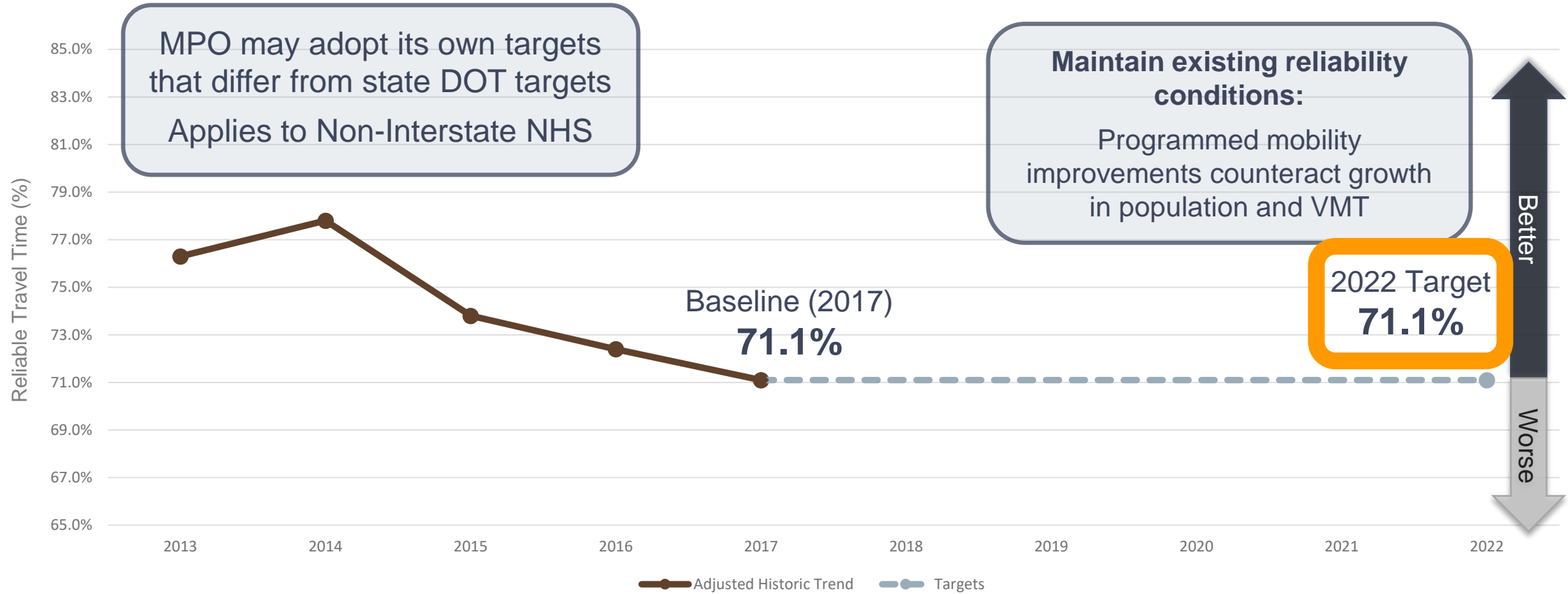
Interstate Reliability



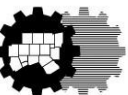
	2013	2014	2015	2016	2017	2020	2022
Statewide Baseline and Targets					79.6%	61.2%	56.6%
TTI Suggested Baseline and Targets (NCTCOG MPA)					77.3%	65.0%	60.0%
Adjusted Historic Trend (NCTCOG MPA)	75.4%	77.9%	75.1%	74.7%	77.3%		
Baseline and Proposed MPO Targets					77.3%	78.6%	79.5%



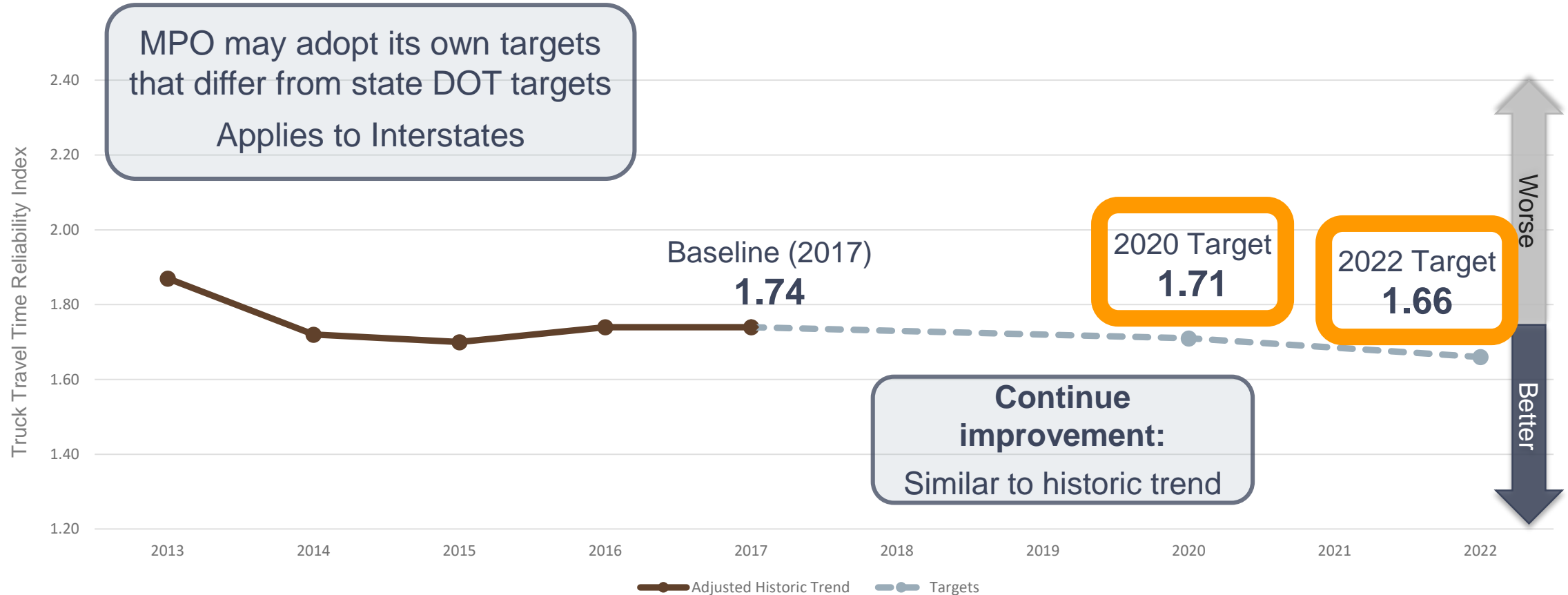
Non-Interstate NHS Reliability



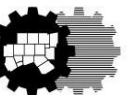
	2013	2014	2015	2016	2017	2020	2022
Statewide Baseline and Target					80.4%	N/A	55.4%
TTI/TxDOT Suggested Baseline and Target (NCTCOG MPA)					71.1%	N/A	43.0%
Adjusted Historic Trend (NCTCOG MPA)	76.3%	77.8%	73.8%	72.4%	71.1%		
Baseline and Proposed MPO Targets					71.1%	N/A	71.1%



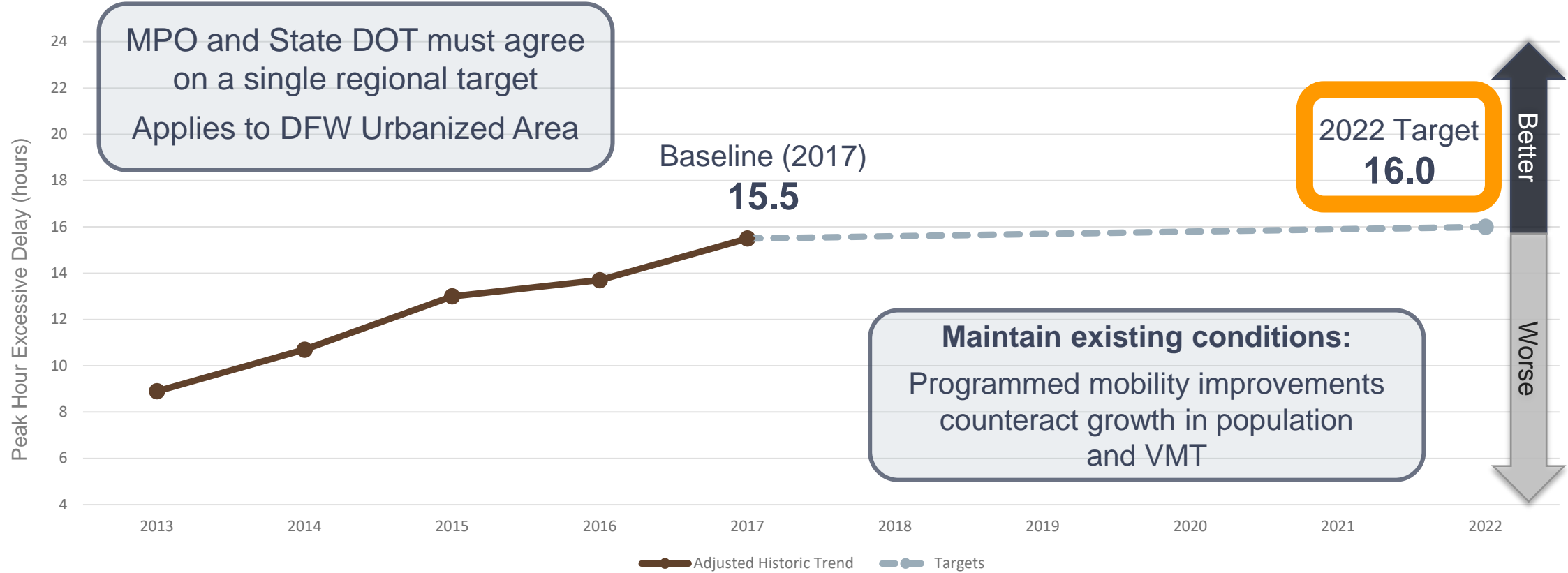
Truck Travel Time Reliability Index



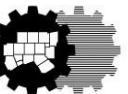
	2013	2014	2015	2016	2017	2020	2022
Statewide Baseline and Target					1.50	1.70	1.79
TTI/TxDOT Suggested Baseline and Target (NCTCOG MPA)					1.74	2.40	2.50
Adjusted Historic Trend (NCTCOG MPA)	1.87	1.72	1.70	1.74	1.74		
Baseline and Proposed MPO Targets					1.74	1.71	1.66



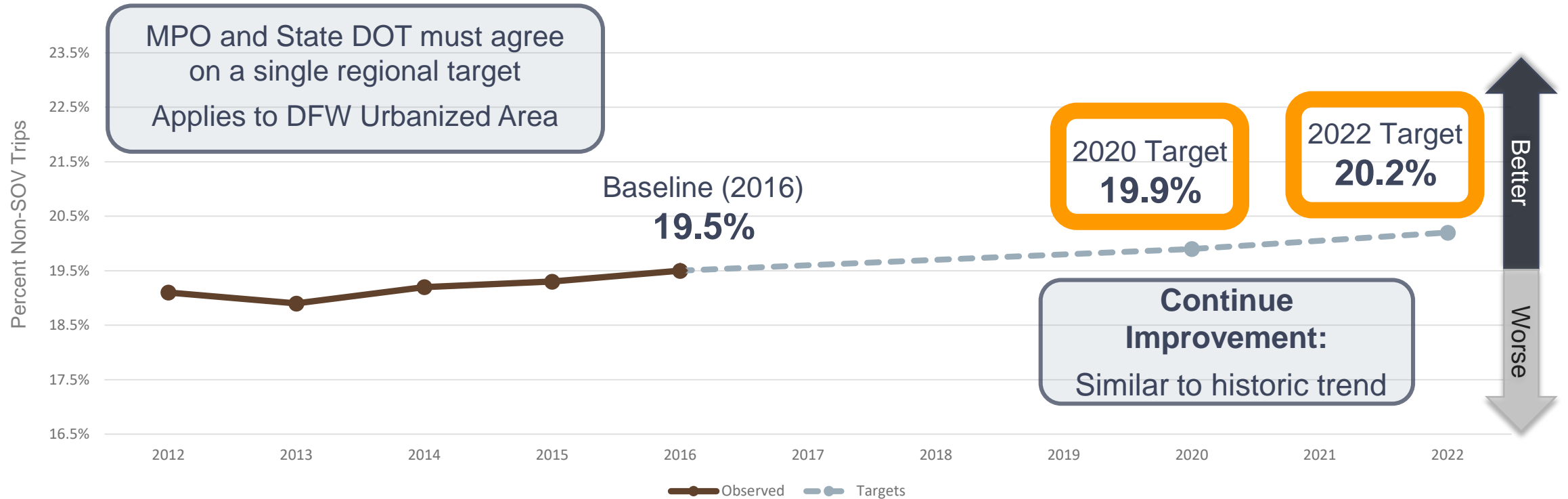
Peak Hour Excessive Delay



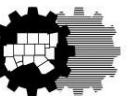
	2013	2014	2015	2016	2017	2020	2022
Statewide Baseline and Target	N/A						
TxDOT Baseline and Adopted Target (DFW UA)					15.5	N/A	16.0
Adjusted Historic Trend (DFW UA)	8.9	10.7	13	13.7	15.5		
Baseline and Proposed MPO Target					15.5	N/A	16.0



Percent of Trips that are Non-Single Occupant Vehicle (% Non-SOV)

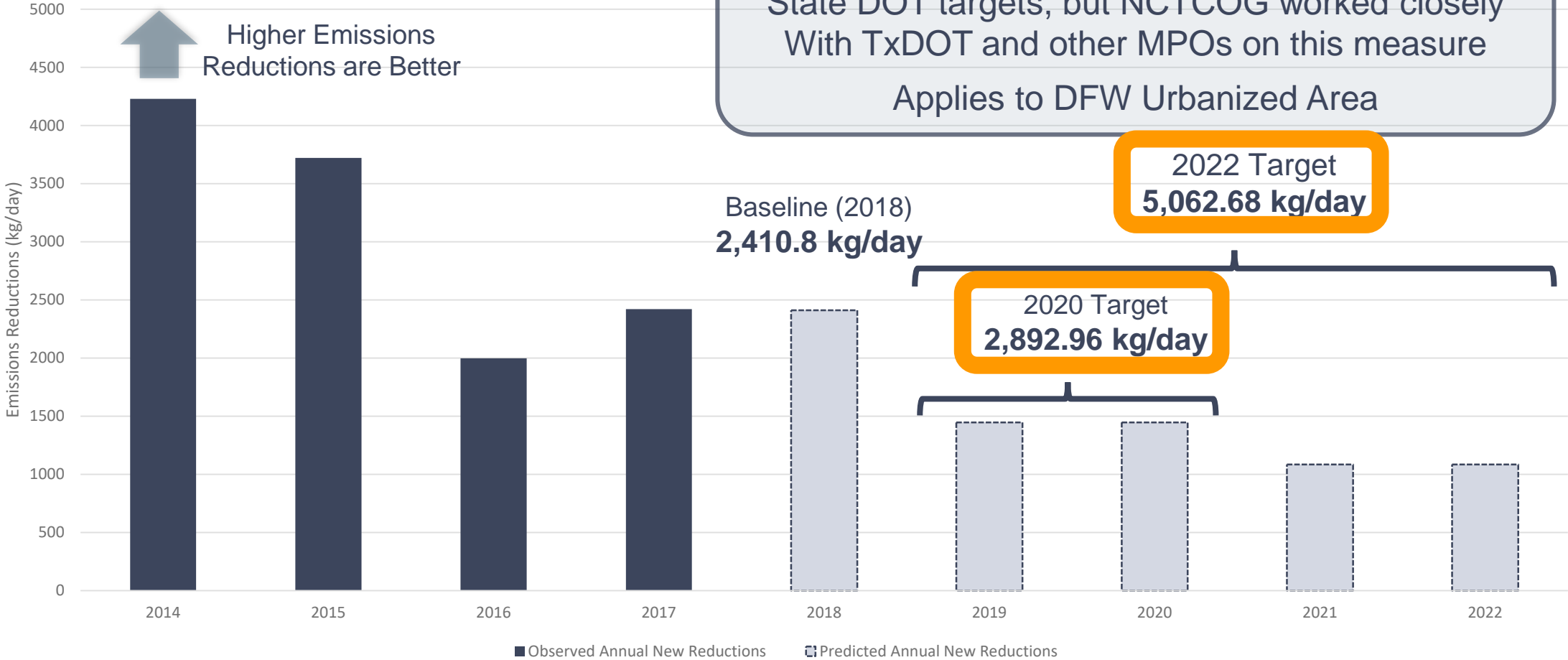


	2012	2013	2014	2015	2016	2020	2022
Statewide Baseline and Target	N/A						
TxDOT Baseline and Adopted Target (DFW UA)					19.5%	19.9%	20.2%
Adjusted Historic Trend (DFW UA)	19.1%	18.9%	19.2%	19.3%	19.5%		
Baseline and Proposed MPO Target					19.5%	19.9%	20.2%



On-Road Mobile Source Emissions Reductions (NO_x)

MPO may adopt its own targets that differ from State DOT targets, but NCTCOG worked closely With TxDOT and other MPOs on this measure
Applies to DFW Urbanized Area

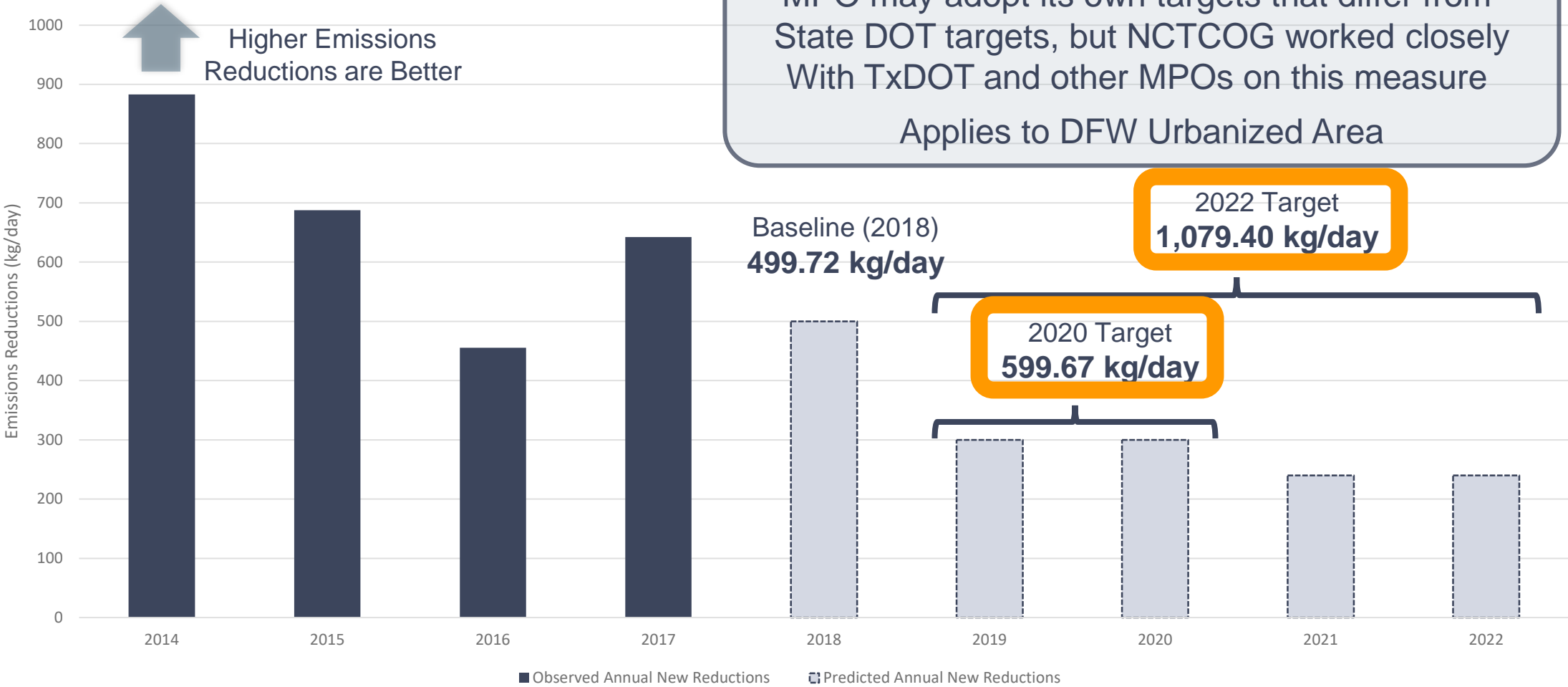


	2014	2015	2016	2017	2018	2019	2020	2021	2022
Observed Annual New Reductions	4,230.22	3,720.74	1,998.06	2,420.93					
Predicted Annual New Reductions					2,410.8	1,446.48	1,446.48	1,084.86	1,084.86

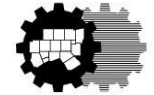


On-Road Mobile Source Emissions Reductions (VOC)

MPO may adopt its own targets that differ from State DOT targets, but NCTCOG worked closely With TxDOT and other MPOs on this measure
Applies to DFW Urbanized Area



	2014	2015	2016	2017	2018	2019	2020	2021	2022
Observed Annual New Reductions	883.10	687.64	455.44	642.22					
Predicted Annual New Reductions					499.72	299.83	299.83	239.87	239.87



Proposed Future Action

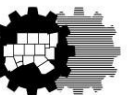
DRAFT

Agree to support the TxDOT statewide targets for NHS pavement and bridge conditions

Focus on the improvement of regional NHS Off-System Arterial pavements and NHS bridges in poor condition

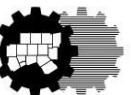
Adopt regional targets for Interstate Reliability, Non-Interstate Reliability, and Truck Reliability

Adopt regional targets identical to TxDOT's regional targets for Peak Hour Excessive Delay, Non-SOV Travel, and Emissions Reductions



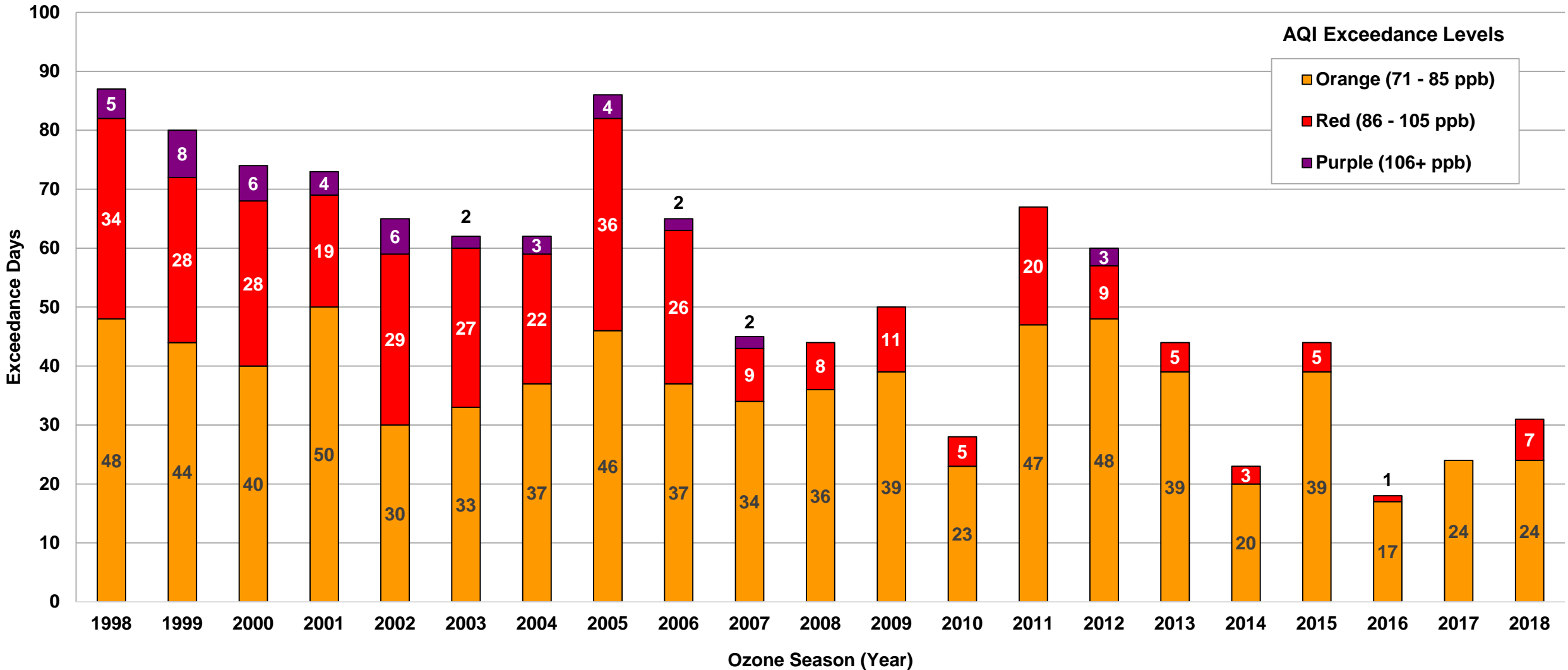
Schedule

July 27	STTC Information Item – Performance Measures and Targets
August 9	RTC Information Item – Performance Measures and Targets
August 24	STTC Workshop – Performance Measures and Targets
September 13	RTC Information Item
September 28	STTC Information Item – Draft Targets
October 8, 15, 18	Public Meetings
October 11	RTC Information Item – Draft Targets
October 26	STTC Action Item - Recommend Approval of Final Targets
November 8	RTC Action Item – Approval of Final Targets
November 15	Target Adoption Deadline



8-HOUR OZONE NAAQS HISTORICAL TRENDS

Based on ≤ 70 ppb (As of September 28, 2018)

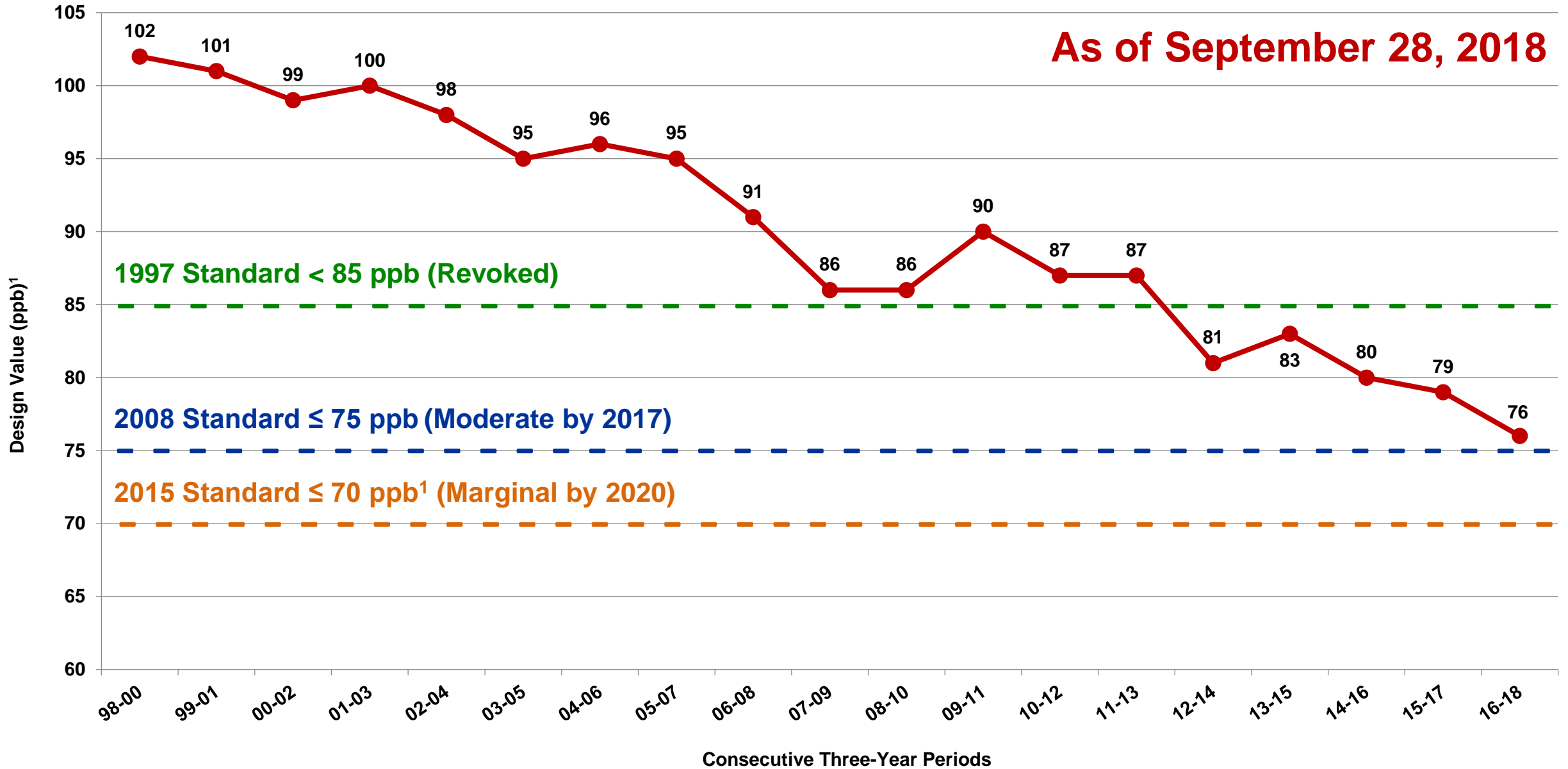


Exceedance Level indicates daily maximum eight-hour average ozone concentration.
Exceedance Levels are based on Air Quality Index (AQI) thresholds established by the EPA for the revised ozone standard of 70 ppb.

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

8-HOUR OZONE NAAQS HISTORICAL TRENDS

As of September 28, 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).

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<http://www.nctcog.org/trans/air/ozone/index.asp>

<https://www.airnorthtexas.org/>