NCTCOG PRESENTATION

Utilizing Data to Understand Transportation Needs and Identify Solutions

NATALIE BETTGER|NATIONAL OPERATIONS CENTER OF EXCELLENCE|5.5.2022

Transportation System Management & Operations Plans

Texas Department of Transportation (TxDOT) Statewide Transportation System Management & Operations (TSMO) Goals and Objectives

- Safety
- Reliability
- Efficiency
- Customer Service
- Collaboration
- Integration

Dallas-Fort Worth Districts' TSMO Plan

- Traffic Incident Management
- Work Zones Management
- Road Weather Management
- Planned Special Events
- Traffic Signal Management
- General Traffic Management

Linkage between TSMO and Congestion Management Process

Statewide and Districts' TSMO identifies programs

Congestion Management Process (CMP) utilizes the programs and Corridor Evaluation to identify projects

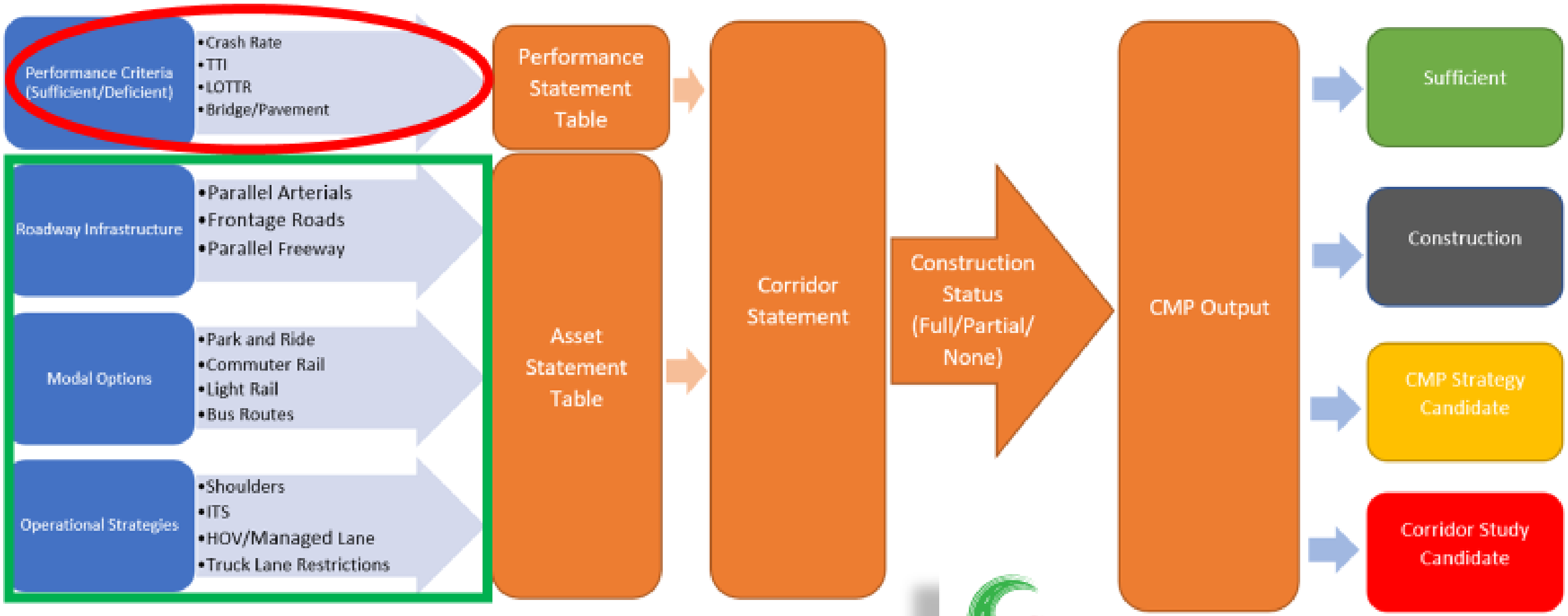
Aims to maximize existing roadway capacity through asset optimization and travel demand management

Last CMP Update completed in 2021

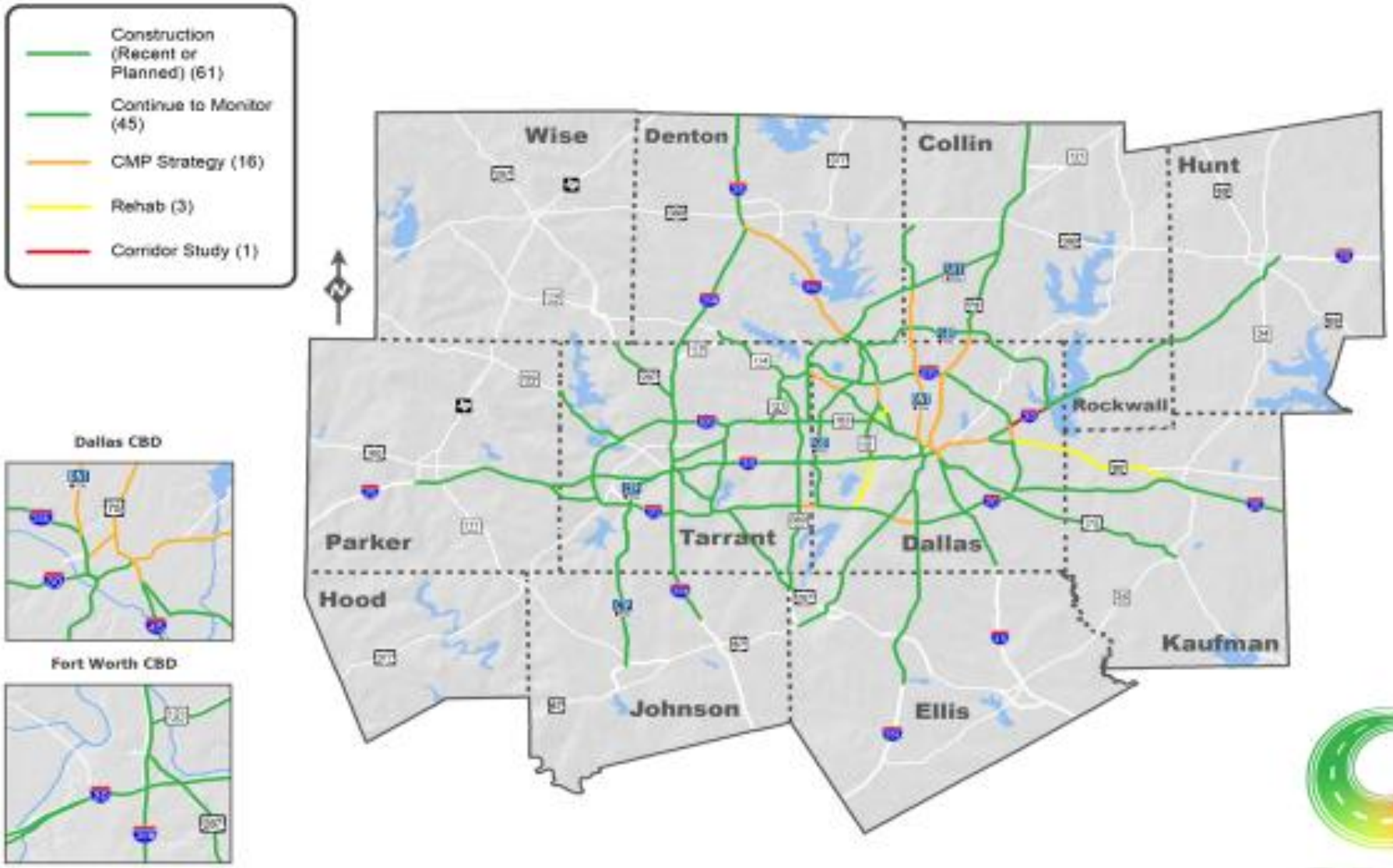
Why Do We Need Such a Process?

- Manage travel demand
- Reduce single-occupancy vehicle travel
- Improve efficiency of transportation system
- Improve safety for all users
- Maximize transportation funds
- Justify additional capacity is needed
- Coordinate with regional partners

Congestion Management Process Flow



Process Outputs



North Central Texas Council of Governments

January 2021

CMP
CONGESTION MANAGEMENT PROCESS

Corridor Metrics and Performance Measures

Performance Measure	Segment 1	Rank (of 126 corridors)	Segment 2	Rank (of 126 corridors)	Segment 3	Rank (of 126 corridors)
Crash Rate (102)	66.66	66	114.99	109	129.12	115
Travel Time Index (1.5)	1.42	92	1.72	112	1.21	66
Travel Time Reliability (1.38)	1.65	123	1.58	120	1.76	126
Pavement in Poor Condition (10%)	0	1*	0	1*	0	1*
Bridge in Poor Condition (10%)	0	1*	0	1*	0	1*

Roadway Infrastructure

Performance Measure	Segment 1	Rank (of 126 corridors)	Segment 2	Rank (of 126 corridors)	Segment 3	Rank (of 126 corridors)
Parallel Arterials	71.4	25	38.2	70	52.6	42
Frontage Roads	9.6	120	100	1*	100	1*
Parallel Freeway	125.9	4	55.4	25	0	61*

Category Cutoffs
High- 80+
Medium- 50-80
Low- <50

Modal Options

Performance Measure	Segment 1	Rank (of 126 corridors)	Segment 2	Rank (of 126 corridors)	Segment 3	Rank (of 126 corridors)
Park and Ride Facilities	2	47*	1	62*	1	62*
Light Rail	37.5	21	0	30*	0	30*
Commuter Rail	0	19*	0	19*	0	19*
Bus Route	100	1*	100	1*	89	47
Bus Density	279.5	12	129.6	31	48.9	60

Category Cutoffs
High- 80+
Medium- 50-80
Low- <50

Operational Assets

Performance Measure	Segment 1	Rank (of 126 corridors)	Segment 2	Rank (of 126 corridors)	Segment 3	Rank (of 126 corridors)
Shoulder	Low	92*	Low	92*	Low	92*
ITS	100	1*	100	1*	100	1*
Truck Lane Restriction	N/A		N/A		N/A	

Category Cutoffs
High- 80+
Medium- 50-80
Low- <50

Corridor Summary

Performance Measure/Category	Segment 1	Segment 2	Segment 3
Crash Rate	Sufficient	Insufficient	Insufficient
Travel Time Index	Sufficient	Insufficient	Sufficient
Level of Travel Time Reliability	Insufficient	Insufficient	Insufficient
Bridge/Pavement Condition	Sufficient	Sufficient	Sufficient
Roadway Infrastructure	High	Medium	Low
Modal Options	Medium	Medium	Low
Operations	Medium	Medium	Medium

CMP Strategy Selection

Mainstreaming TSMO In the Process

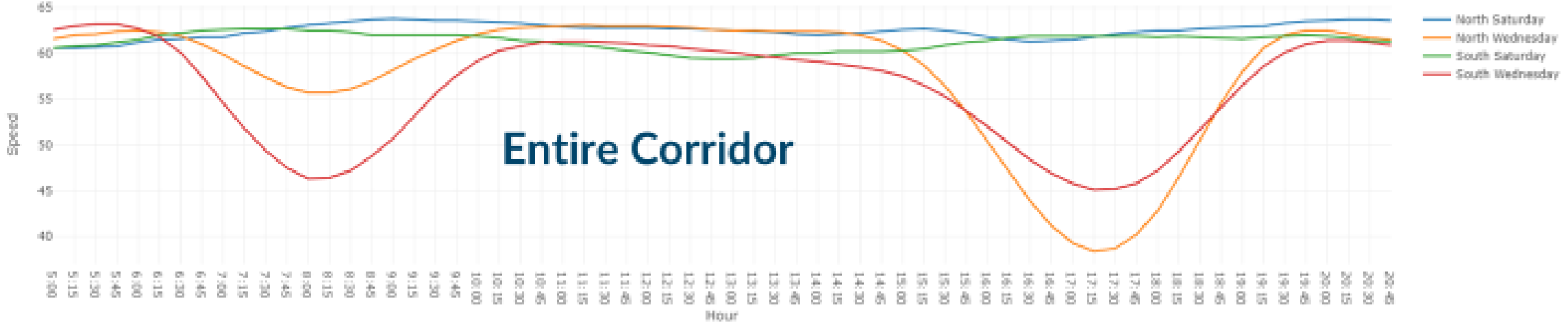
Engagement of Internal Teams

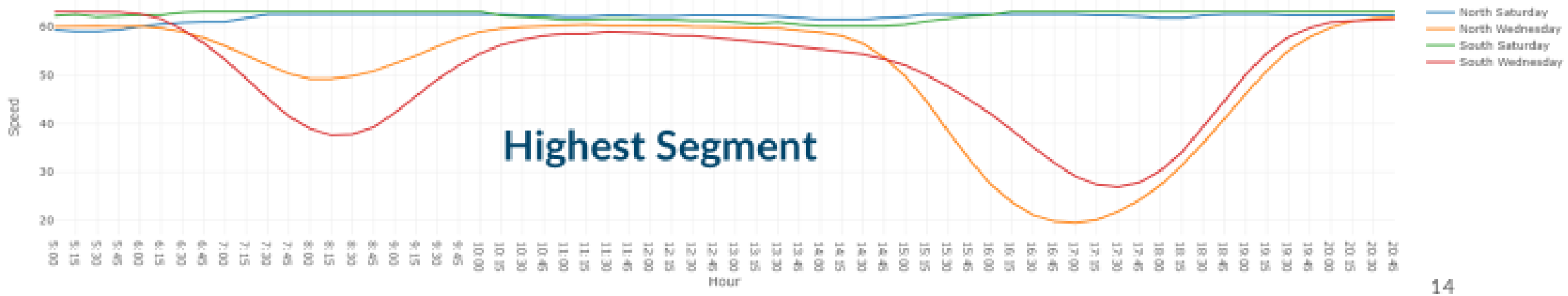
Operations, Transit, Bike/Pedestrian, Travel Demand Management, Safety, Roadway and Asset Management

Coordination with External Partners

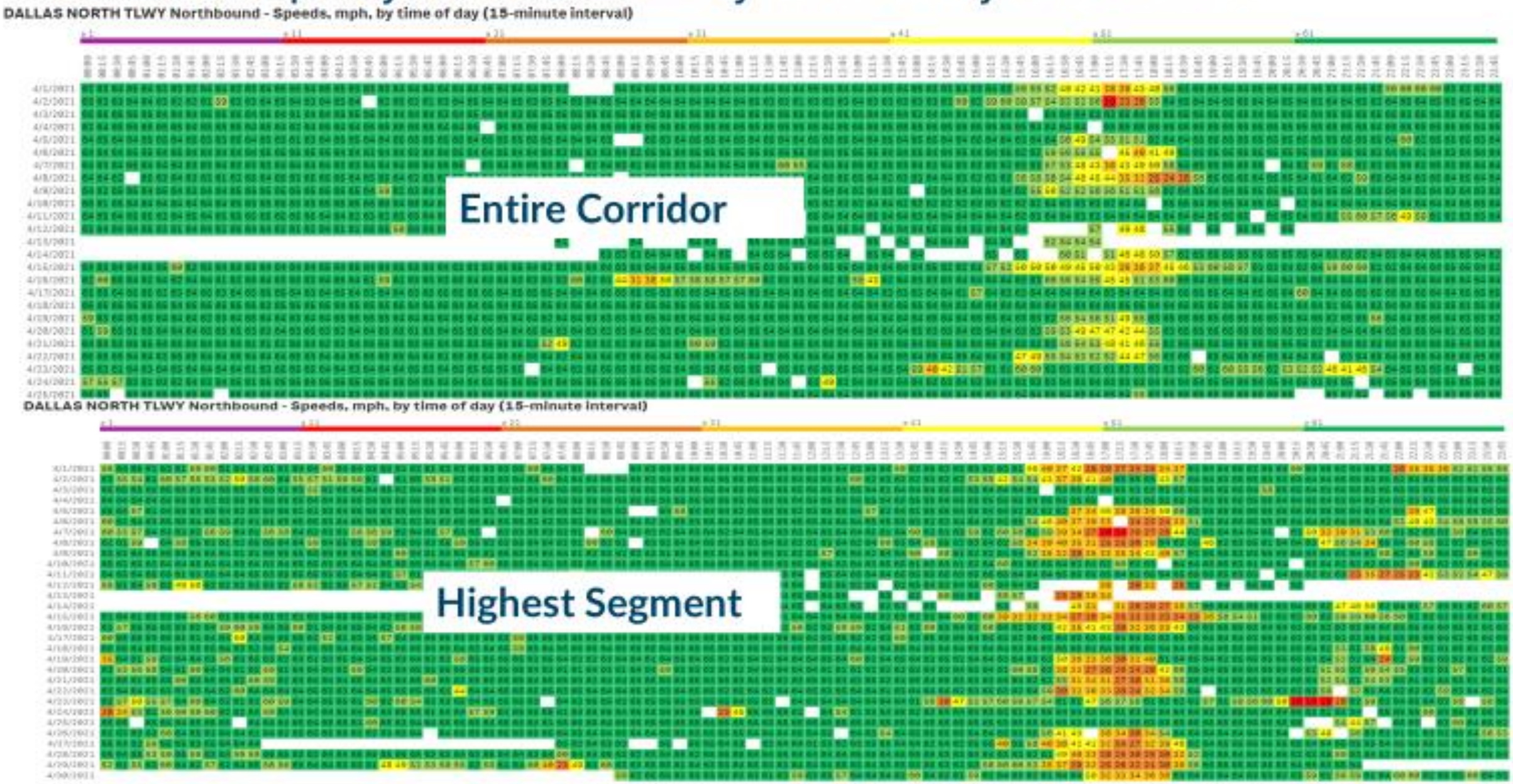
Cities, Roadway Operating Agency, Transit Agencies, Counties

INRIX Speed Graph by Time of Day





Heat Map by Time of Day and Day of Week



Identification of Strategies

Strategy	Performance Measures That Need Improvement	Primary Available Assets	Secondary Available Assets
Adaptive/Demand Responsive Signal Systems/ Traffic Signal Improvements	Travel Time Index Travel Time Reliability	Bus Routes Frontage Roads Parallel Arterials	
Bike/Ped Improvements	Travel Time Index Travel Time Reliability	Parallel Arterials	Light Rail Commuter Rail Bus
SOV Trip Reduction Programming / Commuter Financial Incentives	Travel Time Index Travel Time Reliability		
Transit Fixed-Route Operations	Travel Time Index	Bus Routes HOV/Managed Lanes Frontage Roads Parallel Arterials	
Bottleneck Removal	Travel Time Index Travel Time Reliability Crash Rate		*Lane Drop must be identified on corridor
Freight Railroad Grade Crossing	Travel Time Index Travel Time Reliability	Parallel Arterials	
HOV/Managed Lane Management	Travel Time Index Travel Time Reliability	HOV/Managed Lane ITS	
ITS Devices (CCTV, Cameras, DMS, etc.)	Travel Time Index Travel Time Reliability Crash Rate		*If ITS is not densely deployed on corridor
Strategic Incident Response and Clearance Time Program	Travel Time Index Travel Time Reliability Crash Rate	ITS Shoulder Availability	Frontage Roads Parallel Freeway Parallel Arterials

CMP Strategy Corridor Review Process

Review upcoming funded projects on Corridor

Group selects strategies

Identify implementation agency

Projects packaged and brought to Technical Committee and Policy Board for Approval

Evaluate effectiveness of strategy

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