Building a TSMO Program

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ARIZONA DEPARTMENT OF TRANSPORTATION

JULY 20TH, 2021

2021 Annual Meeting

Background Efforts

- ## Organizational Structure

  - ADOT and Division

- ## FHWA-related activities – SHRP2

  - Capability Maturity Model – March 2014

  - Capability Re-Assessment Workshop – February 2017

  - TSMO Program Planning Workshop – December 2017

- ## Operations focused

  - Preserve capacity

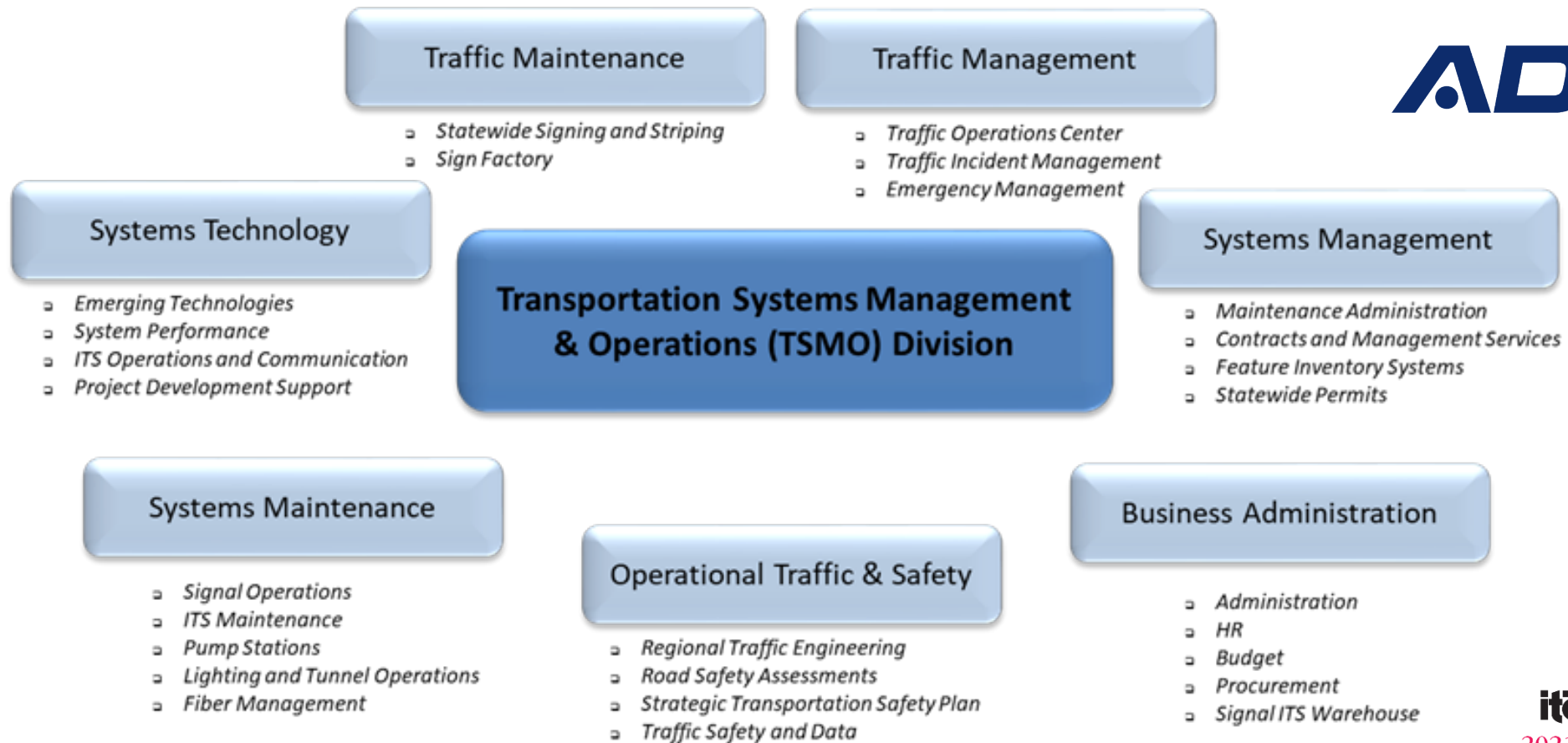 - Improve safety

  - Improve reliability

Developing the ADOT TSMO Culture

- Develop a TSMO Business Case

- Executive Leadership support is fundamental

- Empower & support staff that will help drive the process

- Develop Guiding Principles and Roadmap

  - Plan for Operations

  - Identify Priorities for Improving Operations

  - Identify Specific Strategies

  - Track Progression Methods/Performance Metrics

  - Monitor, measure, and market the effects of the Program

- Remove the silos – communication

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TSMO Division Structure

Goals, Objectives, Plans…

2017 TSMO Strategic Plan

Currently in Procurement Process for an ITS Masterplan…

Score Card – TSMO Division

Metric	Category	Date	Type	Baseline									
			Actual		22	21	15	22	15	25	20	29	20
Incident Response Unit - Clearance Times for Full Closures	Quality	7/1/2021	Target		120	120	120	120	120	120	120	120	120
		120 mins/less	Actual		186	350	170	229	195	212	317	279	97
Traffic Operations Center - Statewide Response Times for Full Closures	Quality	7/1/2021	Target		28	28	28	28	28	28	28	28	28
		28 mins/less	Actual		29	38	24	34	25	32	49	45	48
Traffic Operations Center - Statewide Clearance Times for Full Closures	Quality	7/1/2021	Target		120	120	120	120	120	120	120	120	120
		120 mins/less	Actual		200	211	178	125	118	100	187	89	133
OPERATIONAL TRAFFIC AND SAFETY													
[#3] Percent of Traffic Signals with Comm Equipment	Quality	6/30/2019	Target	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
		47%	Actual		61%	62%	62%	62%	62%	62%	62%	62%	62%
[#10] Maintain Roadway Lighting at 90% Operability	Quality	6/30/2019	Target	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
		92%	Actual		96.9%	97.2%	96.8%	97.0%	96.5%	96.8%	97.0	97.1%	97.3%
[#21] Maintain 80% of TIA turnaround time below 20 working days (Measured in percent of submittals)	Speed	6/30/2019	Target	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%
		75%	Actual		92%	100%	95%	90%	85%	100%	100%	75%	100%
[#24] Average traffic signal failure response time (notification to restoration).	Speed	6/30/2019	Target	125	125	125	125	125	125	125	125	125	125
		135 min	Actual		159	109	156	156	103	90	128	26	59
[#15] Reduce fatalities below 2021 forecast of 972. Forecast is from 2021 Arizonz Safety performance Target Setting.	Quality	12/31/2017	Target	1,072	89	89	89	89	89	89	90	90	90
		998	Actual	531	91	94	104	104	102	96	108	66	53
[#15a] Reduce fatalities on State Highway System (SHS) below 2021 forecast of 315 Goal Council reduction of 15% by 2022 (3%/yr)	Quality	12/31/2017	Target	325	27	27	27	27	27	27	26	26	27
		356	Actual	365	39	28	44	27	19	38	45	37	22
Number of RSAs completed (w/ draft RSA report)	Quality	CY2018	Target	50	4	4	4	4	5	5	4	5	5
			Actual	20	6	0	4	9	14	10	0	0	4
Number of locations w/ RSA countermeasures implemented	Quality	CY2018	Target	25	2	2	2	2	2	3	2	2	2
			Actual	5	2	0	3	0	0	2	0	0	0
Percentage of crash reduction at locations w/ RSA countermeasures implemented	Quality		Target	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
			Actual	100%	100%	100%	82%	67%	37%	43%	37%	35%	33%
[#28] Maintain crash report backlog to 45 calendar days.	Quality	2017	Target	45	45	45	45	45	45	45	45	45	45
		29	Actual		109	90	81	79	83	88	97	104	109
SYSTEMS TECHNOLOGY													
[#16] Average Speed (Annual Rolling Average) on the Phoenix Metro System during the AM and PM Peak Hours.	Quality	8/1/2017	Target	50 mph	50 mph	50 mph	50 mph	50 mph	50 mph	50 mph	50 mph	50 mph	50 mph
		48.5 mph	Actual		55.4	56.9	58.4	59.6	61.0	62.0	63.1	64.2	64.3
[#17] Average Vehicle Delay (Annual Rolling Average) on the Phoenix Metro Freeway System during the AM and PM Peak Hours.	Quality	8/1/2017	Target	60 sec	60	60	60	60	60	60	60	60	60
		67 secs	Actual		85	94	102	109	116	121	129		
[#18] Average Travel Time Index (Annual Rolling Average) for the Phoenix Metro Freeway System during the AM and PM Peak Hours.	Quality	8/1/2017	Target	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40	1.40
		1.70	Actual		1.51	1.45	1.38	1.32	1.26	1.21	1.16	1.11	

ADOT TSMO Efforts

Transportation Systems Management and Operations - TSMO

▸ Develop, Deploy, and Maintain, emerging technologies that increase Mobility, Safety, and System Reliability

- Bottleneck Mitigation

- Variable Speed Limits (VSL)

- Incident Response Unit (IRU)

- Traffic Operations Center

ADOT TSMO Efforts

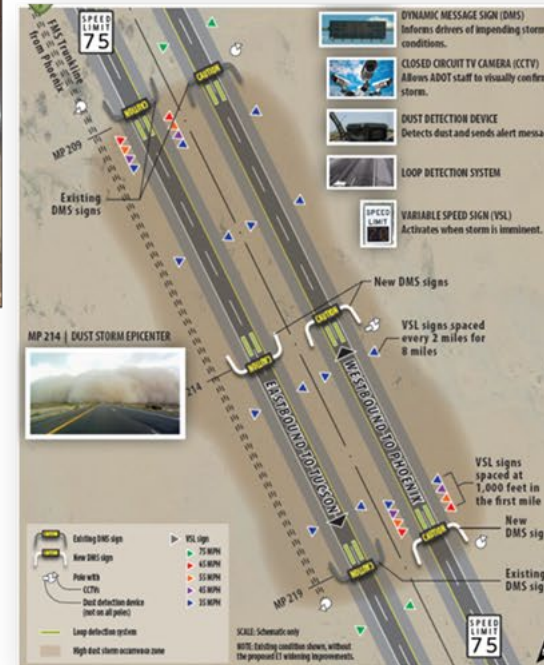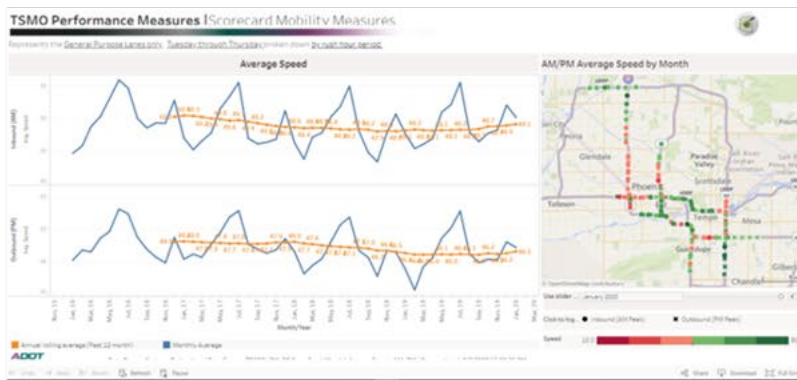**Transportation Systems Management and Operations - TSMO**

- Wrong Way Driver Detection

- Statewide Travel Times

- Traffic Signal Optimization

- Adaptive Ramp metering

ADOT TSMO Efforts

Transportation Systems Management and Operations - TSMO

- Data Driven Decisions with Performance Management
- LED Lighting Conversions
- Dust Detection and VSL

Regional and Local TSMO Coordination Efforts

Transportation Systems Management and Operations - TSMO

▸ Develop, and Deploy, emerging technologies in support of Connected and Autonomous Vehicles

- I-10 Corridor Coalition
  - Smart Truck Parking

- Loop 101 Mobility Project
  - Integrated Corridor Management

FHWA and AASHTO Efforts to Support TSMO

Regional Operations Leadership Forum (ROLF) Program
- Build upon FHWA ROLF Program to engage TSMO Champions, share best practices, etc.

NCHRP 03-126 - Transportation Operations Manual
- Authoritative source representation state of operations practice

Thank you!

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