

Mainstreaming TSMO Through Policies and Processes

FHWA Office of Operations
National Operations Center of Excellence

Brent Cain, TSMO Director Arizona Department of Transportation November 3rd, 2021



Background and Current Efforts

- Organizational Structure
 - ADOT and Division Launch October 2015
- FHWA-related activities
 - Capability Maturity Model March 2014 and February
 2017
 - TSMO Program Planning Workshop December 2017
 - Mainstreaming TSMO 2020-2021
- ADOT TSMO Focused Planning Efforts
 - TSMO Strategic Plan February 2017
 - ITS Masterplan October 2021
 - Smart Highway Technology Subprogram
 Funding





Traffic Maintenance

- Statewide Signing and Striping
- Sign Factory

Traffic Management

- Traffic Operations Center
- Traffic Incident Management
- Emergency Management
- Weather Management

Systems Technology

- Emerging Technologies
- System Performance
- ITS Operations and Communication
- Project Development Support

Transportation Systems Management & Operations Division (TSMO)

Systems Maintenance

- Signal Operations
- ITS Maintenance
- Pump Stations
- Lighting and Tunnel Operations
- Fiber Management

Operational Traffic & Safety

- Regional Traffic Engineering
- Road Safety Assessments
- Strategic Transportation Safety Plan
- Traffic Safety and Data
- Rural Signals and Lighting Operations

Systems Management

- Maintenance Administration
- Contracts and Management Services
- Feature Inventory Systems
- Statewide Permits
- Rest Area Management
- Level-of-Service and Needs Based Budgeting

Business Administration

- Administration
- □ HR
- Budget
- Procurement
- Signal ITS Warehouse



Governor FY 2022 Strategic 2-Pager

Department of Transportation Fiscal Year 2022 Strategic Plan 2-pager

Current Annual Focus

Strategy #	FY22 Annual Objectives	Objective Metrics	Annual Initiatives		
1	Reduce roadway crashes	Crash report backlog Percent overweight CVS @ POEs	Improve safety outcomes in high crash locations Reduce unpermitted overweight commercial carriers		
2	Improve our ability to recruit and retain the best talent	· · · · · · · · · · · · · · · · · · ·			
3	Maximize efficiencies and confidence in MVD service delivery	Office experience time Level 2 call center hold time Number REAL-ID licenses issued	Improve customer experience time Transition drivers to Travel ID		
4	Improve/maintain the transportation system condition based on existing revenues	Achieve project milestones Pavement treatments (miles)	Deliver federal and state funded life expansion projects I-10 improvements from Phoenix to Casa Grande I-17 expansion from Anthem to Sunset Point Install broadband on I-17 and I-19		
	Improve reliability of core business processes	Incident Resolution Time	Improve core IT business processes		
	Finalize the transition of state fleet to ADOT	Achieve transition plan milestones	Phase 1: complete transition of licensed over the road light duty fleet owned by ADOA Phase 2: transition licensed over the road light duty fleet purchased outside of ADOA fleet program t		

ADOT X-Matrix FY 2021—FY 2023

	orrel	ation				FY 2021 Obj	ectives						Corre	lation /	Contri	bution							Acco	untai	bility	
П	0	н		4	Improve our ability to attract and	retain the best talent													-				4.1			
н	0			3	Improve the reliability of core but	siness processes			0			0	×			н	н			-	\vdash	MIN2		3.3	3.4	Н
	0	\neg		$\overline{}$	Improve agency performance on						\vdash	*					27.25			\vdash				-	2.1	Н
			0		Improve the maintenance, operat		and the section bears and	misting managers					-						_	\vdash	42	1.1	13		-	Н
4	-		U	*	Improve the maintenance, opera			enting resemes	100	187	300									-	44					L
-						Annual O	bjectives			ment in our	6 E	-		physical Program	96	800		P	9			Execu	utive	Team	Men	nbe
Mad maz e R espurces	Deliver Value to the Customer	Build a Culture of Highly Engaged Employees	Promote Transportation Safety		Long-Term Strategies			Annual Actions	Incorporate a business disruption plan into the COO	Make the best and most efficient use of the investme powerents and bridges to maintain the current con	Improve our Internal & stakeholder communication reg how we prioritize the needs-based maintenance pro	Increase the effective use and application of the tiered his system.	Improve IT Processes	Develop a facilities regent plans that optimizes ADOT's footparint and supports ADOT's Work from Anywhere it	eujepjeu pue pecepdn sepgod Biqueus pue a sepipod Avess so suun (passesse ave sepgod gle auns ug	euevordus yan des sesse mas europe and oak propiese grand Away	Redesign ADOTA Valdados	Further define ADOT's Work from Anywher eProgram develop a plan for Implementation	VXV jo sugarpedra sapesjino ulijivi		John Hallowski	Scott Omer	Dallas Hammit	Assig wyway	SSIMA WINSON	
•		**	*			3-Year Or	utcomes		2	2	2	1	2	2	2	2	2	2	2		*	14		•	10	
					KPI Categories	PY 2021	FY 2022	PY 2023																		
				_	Business Disruption Plan	Launch PDCA	Standard Work & Testing		-														Le	eger	10	
				_	Maintain Current Condition	Launch PDCA	Deliver Targeted Proj \$			11													,			
					Maintenance Prioritization	Launch PDCA	Stakeholder Comm Plan				H										1			Brong	correlat	des
1					Use & Application of TH system	Launch PDCA	Compliance & Assessment					×									1	0		Import	-	effect
1					Improve IT Processes	Launch PDCA	ID/Improve Top 2-3 Issues						E								1					
H					Optimize ADOT's Footprint	Launch PDCA	Improve Request Process															Owner	_		āssa W	
H				_	Policy Assessment & Mgmt	Launch PDCA	Create Agency Standards															Revi	_	G	NAME OF	_
B					Core Business Process Map	Launch PDCA	Map and Remove Waste									H					1	06/1				nt De
Ħ					Redesign ADOT Website	Launch PDCA	ID Gaps & Impr Strategy										H				1	00f2	_	_	w e La	
_		H			Work From Anywhere Program	Launch PDCA	Improve Remote Exp											H			1	69/3		_	Major i	
		H		12	Align Ldrs & People Sys to AKA	Launch PDCA	Impr AKA Develop Index												H		1	08/1			Review	
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Measuring Results



Governor Scorecard FY2022

													Que	estions/F	eedback
Legen	d: Result at 100% of target Result	ult within 7	6% - 99% of	f target 🧶	01	Result with	n 75% or le	ess of target	•	Agend	cy Breakthro	ough Metric	*		
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
ECD	Percent overweight commercial vehicles	Target	5	5	5	5	5	5	5	5	5	5	5	5	5
		Actual		4.6	3.9										
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
IDO	Complete (TBD) miles of planned state highway pavement treatments	Target	5400	75	125	950	950	550	300	300	300	300	750	750	50
		Actual	62	62	139	863									
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
SEO	Deliver targeted state funded life extension projects	Target	TBD	16	16	16									
		Actual	TBD	0	0	4									
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
SEO	Achieve I-10 improvement project milestones	Target	TBD	100	100	100	100	100	100	100	100	100	100	100	100
		Actual	TBD	100	100	100									
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
SEO	Achieve I-17 improvement project milestones	Target		88	92	98	100								
		Actual		88	92	98	100								
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
SEO	Achieve Broadband project milestones (in miles)	Target		0	0	0									
		Actual		0	0	0									
Div	Performance Metric •	Goal	YTD	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
TSMO	Reduce crash reporting backlog (in days)	Target	45	45	45	45	45	45	45	45	45	45	45	45	45
		Actual	134	116	91	93									



Trans						Pla	a <u>n</u>	9	Complete		<u>O</u> n 1	rack	<u>A</u> t F	Risk	<u>B</u> ehir	nd-Over	due
<u> </u>	sportation Systems	s Mai	nagement & Operations (TSMO)	Division FY22 Strate	gic Plan					Tim	ning S	umm	ary				
	Annual Objectives		Annual Actions	Action Owners	Metrics	F	Y22 Q	1		Q2			Q3			Q4	
	Aimuai Objectives		Ailliadi Aodollo	Action Office	11100100	J	Α	S	0	N	D	J	F	М	Α	М	J
		3 Traf	offic Signal Detection	Dave Locher/George Williams	Improve statewide traffic signal detection to 95% functionality by 6/30/22												
2	System Reliability	4 Pro	ovide Signal Timing Options	Dave Locher/George Williams	Develop and implement signal timing plans for peak and off peak for two corridors by 6/30/2022 Time of day plans have installed on section of Grand Ave												
		5 ATS	SPM	Dave Locher/George Williams	Develop and implement Automated Traffic Signal Performance Measures at one location (ATSPM) - by 6/30/2022 ATSPM data is being pulled where time of day plans have been implemented												
		6 Red	duce Phx Metro Full Closure Times	Derek Arnson	Full closure times within 120 minutes (= closure ended)												
		7 ICN	И	Susan Anderson	L101 ICM Concept of Operations and Operations Plan by November 2021												
		8 Phx	x Metro <i>Quick Clearance</i> time reduction	Derek Arnson	Response times for ALL incidents within 28 minutes												
\vdash	Owner: Brent Cain																
		-	sess High Crash Locations	George Williams	Perform targeted RSA's at 50 high crash locations in FY21												
		_ <u>_</u>	plement Countermeasures from RSA's	George Williams	Implement countermeasures at 25 high crash locations												
		3 Rea	al time Travel Notifications - Color DMS	Susan Anderson / John Roberts	Enable color operations for existing color DMS by February 2022												
3	System Safety	4 Dus	st Detection	David Locher/John Roberts	Measure effectiveness of the new dust detection system for FY21 monsoon season												
		5 Cro	owdsource Data	Susan Anderson	Define the feasibility of crowdsource data usage for back of queue by December 2021												
		6 Per	rform Network Screening of the State's System	George Williams	Network screen the 2020 crash data for the state system by Dec 1 2021												
		7 Pro	ogram HSIP Projects	George Williams	Program FY21 HSIP funds by Mar 31												
L		8 Cra	ash Reporting	George Williams	Reduce crash reporting backlog to goal of 45 days by Jan 1st 2022												
\vdash	Owner: Brent Cain																
		1 ITS	Inventory	Susan Anderson/Jerry James	Establish current, available ITS feature inventory and define technology targets as part of the ITS Master Plan by January 2022												
		2 TO	C-Device Maintenance Status	Derek Arnson	Daily checks of a CCTV, DMS, WWD and other ITS equipment to identify systems health and readiness (below 95% is RED)												
4	Infrastructure Health	4 Fibe	er Network	David Locher	Procure and populate a statewide fiber management system by Sept. 2021, team is review proposals												
		5 Dat	ta Quality	Susan Anderson/David Locher	Develop a prioritized plan to update controllers by February 2022												
		6 Mai	aintain Striping Retroreflectivity	·	Maintain striping to retroreflectivity levels as prescribed in FHWA's NPRM - 100 Mcd for speeds of 55 mph or greater, and 50												

+ ≣ FY19 → FY20 → FY21 → FY22 →



Score Card – TSMO Division

SYSTEMS MAINTENANCE & OPERATIONS			
Percent of Statewide Traffic Signals with Communications Equipment		Target	100%
	Quality	Actual	63%
Maintain Phoenix Metro Roadway Lighting Operability at 95%		Target	95%
	Quality	Actual	93%
Metro Phoenix CCTV Camera Operability at 100%		Target	100%
	Quality	Actual	98%
Maintain Phoenix Metro Pump Stations at 90% Operability (Pump		Target	90%
stations that dewater the freeway)	Quality	Actual	64%
Perform Targeted RSA's at 50 High Crash Locations in FY22		Target	50
	Quality	Actual	0
Implement Countermeasures at 25 High Crash Locations		Target	25
	Quality	Actual	3

SYSTEMS TECHNOLOGY			
Maintain the average speed of the Phoenix Metro system at 50 mile		Target	50 MPH
per hour or greater	Quality	Actual	64.3
		Target	1.4
Average Phoenix Metro Travel Time Index	Quality	Actual	1.18
Average Planning Time Index (Annual Rolling Average) for the		Target	
Phoenix Metro Freeway System during the AM Peak Hours	Quality	Actual	1.87
Average Planning Time Index (Annual Rolling Average) for the		Target	
Phoenix Metro Freeway System during the PM Peak Hours	Quality	Actual	2.05
Number of wrong-way vehicle mainline entries within the I-17 pilot		Target	0
corridor	Quality	Actual	2
Number of ramp incursions properly detected in the I-17 wrong-way		Target	
vehicle detection pilot corridor	Quality	Actual	18



National 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 representing state operations practice
- National Operations Centers of Excellence





Thank you!

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