

**Build
With
Us**



TDOT
Department of
Transportation

Traffic Design Division Update

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July 26, 2023



Agenda

- Traffic Division Update
 - EPIC & new Traffic Division
 - Staffing Update
 - PDN Update
 - QA/QC Activities Checklists
- TSM&M Update
 - 2023 TSM&M Report
 - TSMP Program Efforts
 - PMII Program Efforts
 - Other Funding Opportunities to Upgrade Traffic Signals
 - Alternative Delivery Methods to Streamline the Process

EPIC Initiatives

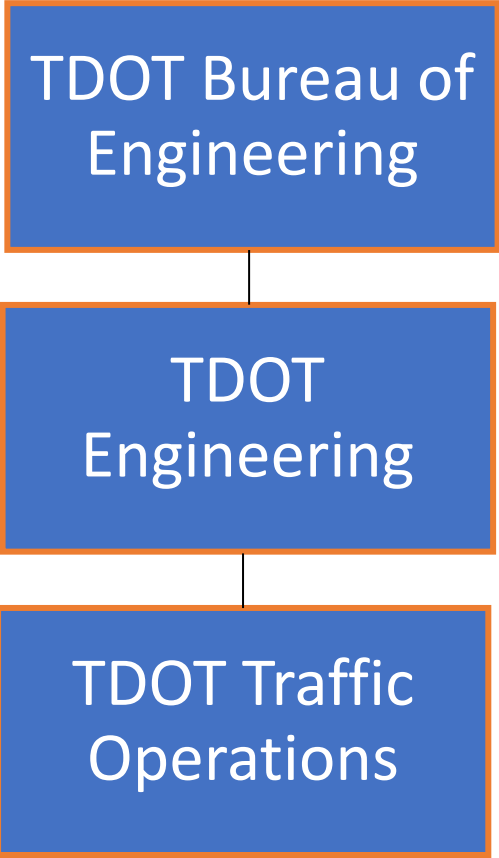


Goals of EPIC

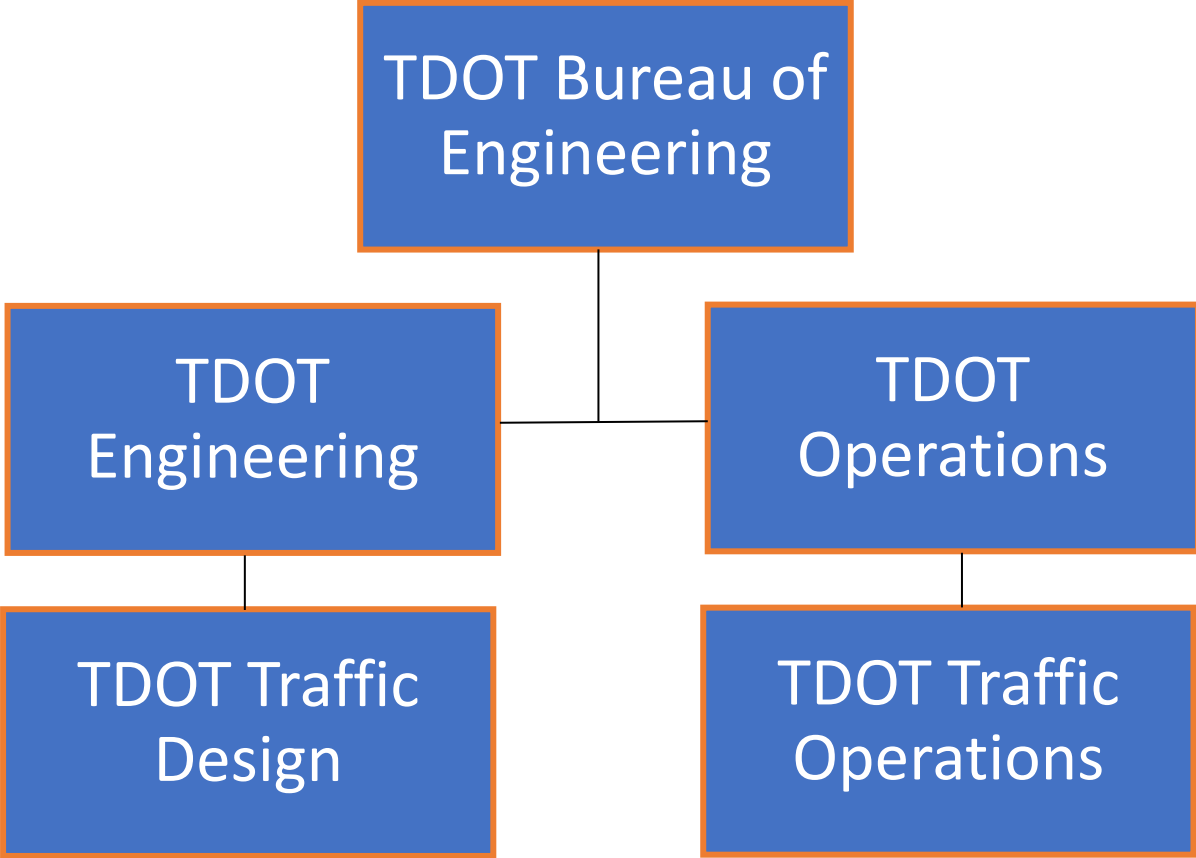
- Alignment with Existing Structure
- Builds off Success of Top to Bottom
- Balance Span of Control
- Develop Multiple Career Paths
- Offer Competitive Market Rate Wages & Benefits
- Foster Innovation
- Establish a Culture of Accomplishment

EPIC TDOT Traffic Operations Division Split

Prior TDOT Structure



New TDOT Structure



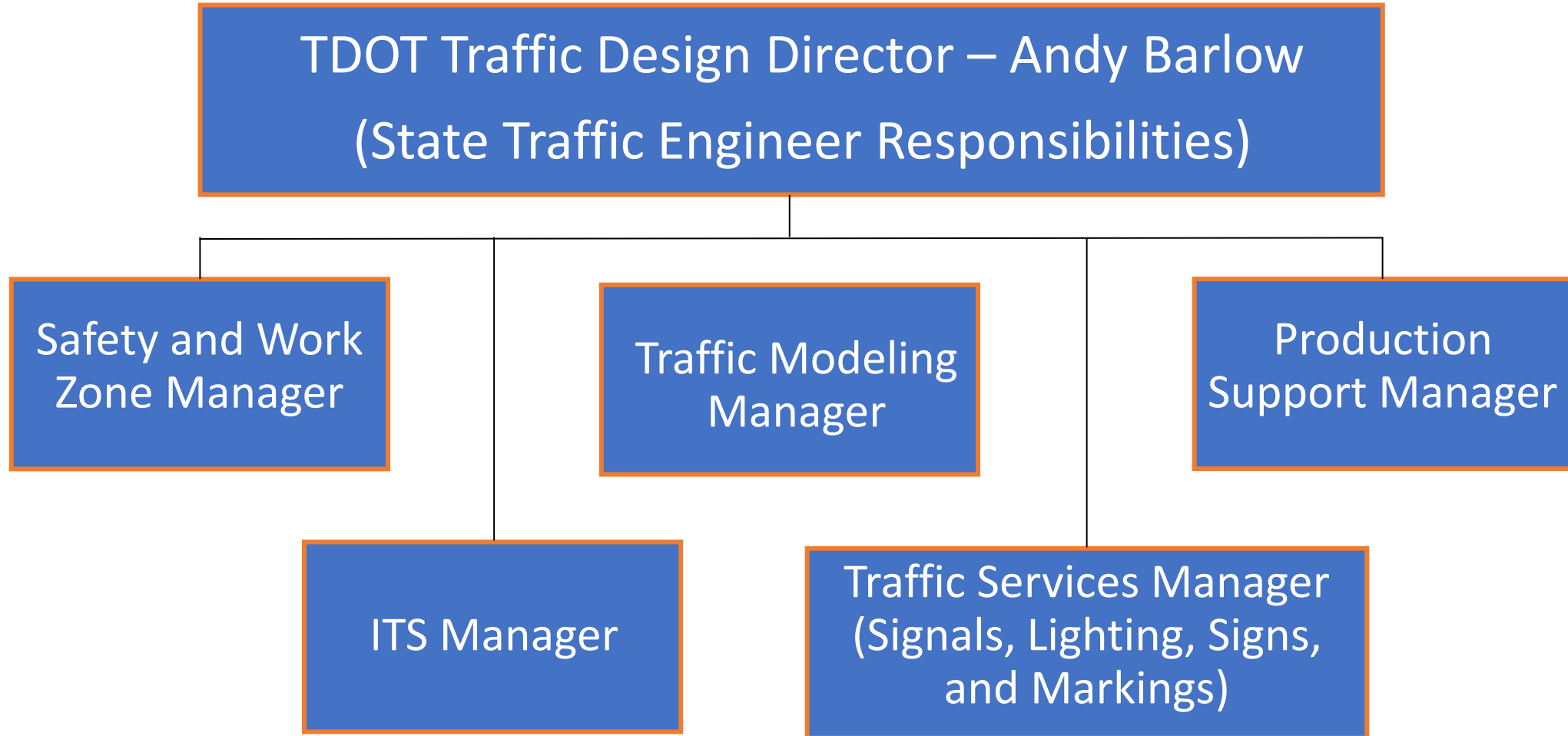
EPIC Careers in the TDOT Bureau of Engineering



TRAFFIC OPS DIVISION

TRAFFIC DESIGN DIVISION

EPIC Careers in the TDOT Traffic Design Division



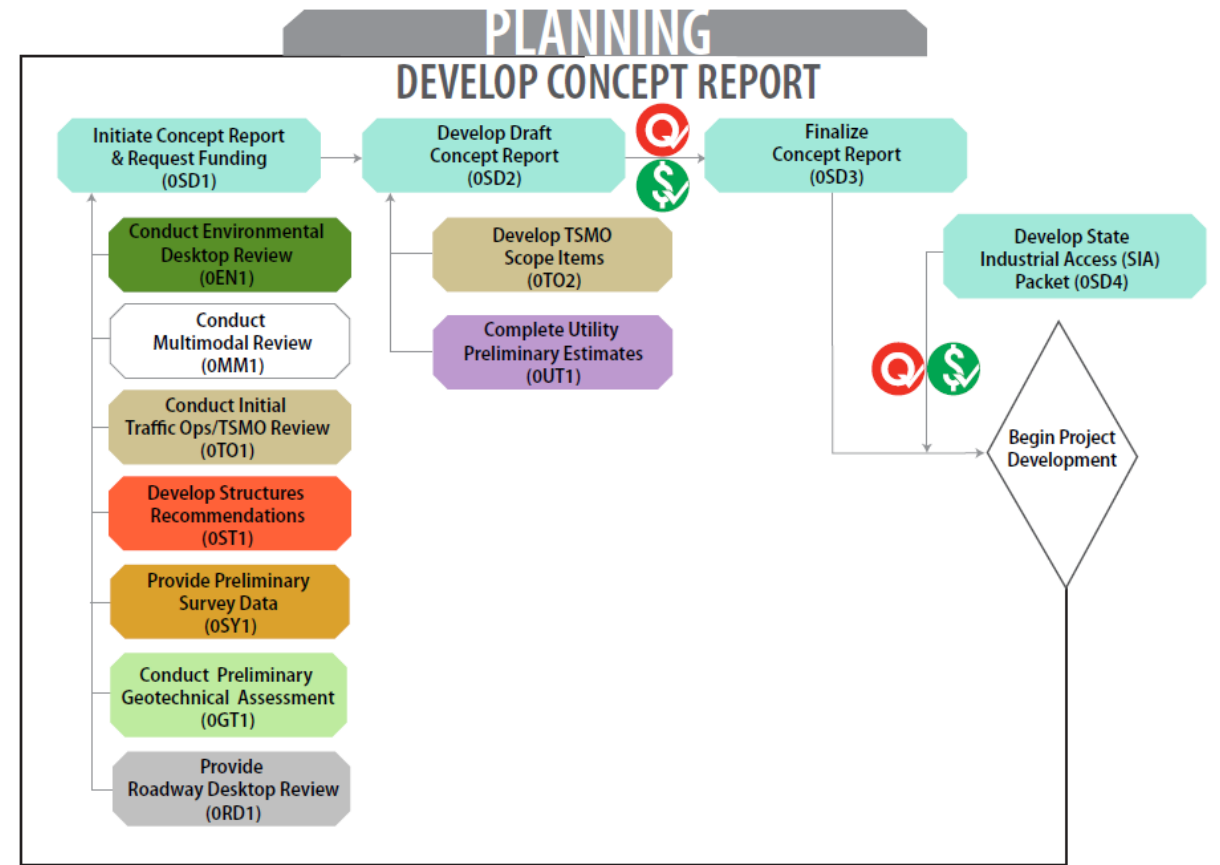
Project Delivery Network (PDN)

- Simplify workflow
 - Defined 4 strategic delivery stages
 - Consolidated the design process
 - Reduced/reorganized # of “activities” from **185** to **45**, while keeping a similar framework for success
- Accelerate process to drive decision making
 - Full team understanding of scope & schedule early
 - Developing a reliable footprint
 - Decoupled ROW plans from design
 - Completed plans for a full discipline review
- Allows flexibility to meet project demands
- Advancing the vision for a “culture of accomplishment”

Project Delivery Network (PDN)

Stage 0 - Planning

- Multidisciplinary approach and reviews
- Deliverable - Concept Report
 - Establishes the starting point for TDOT projects
 - Scaled down to allow flexibility during Stage 1



DISCIPLINE LEGEND



Project Delivery Network (PDN)

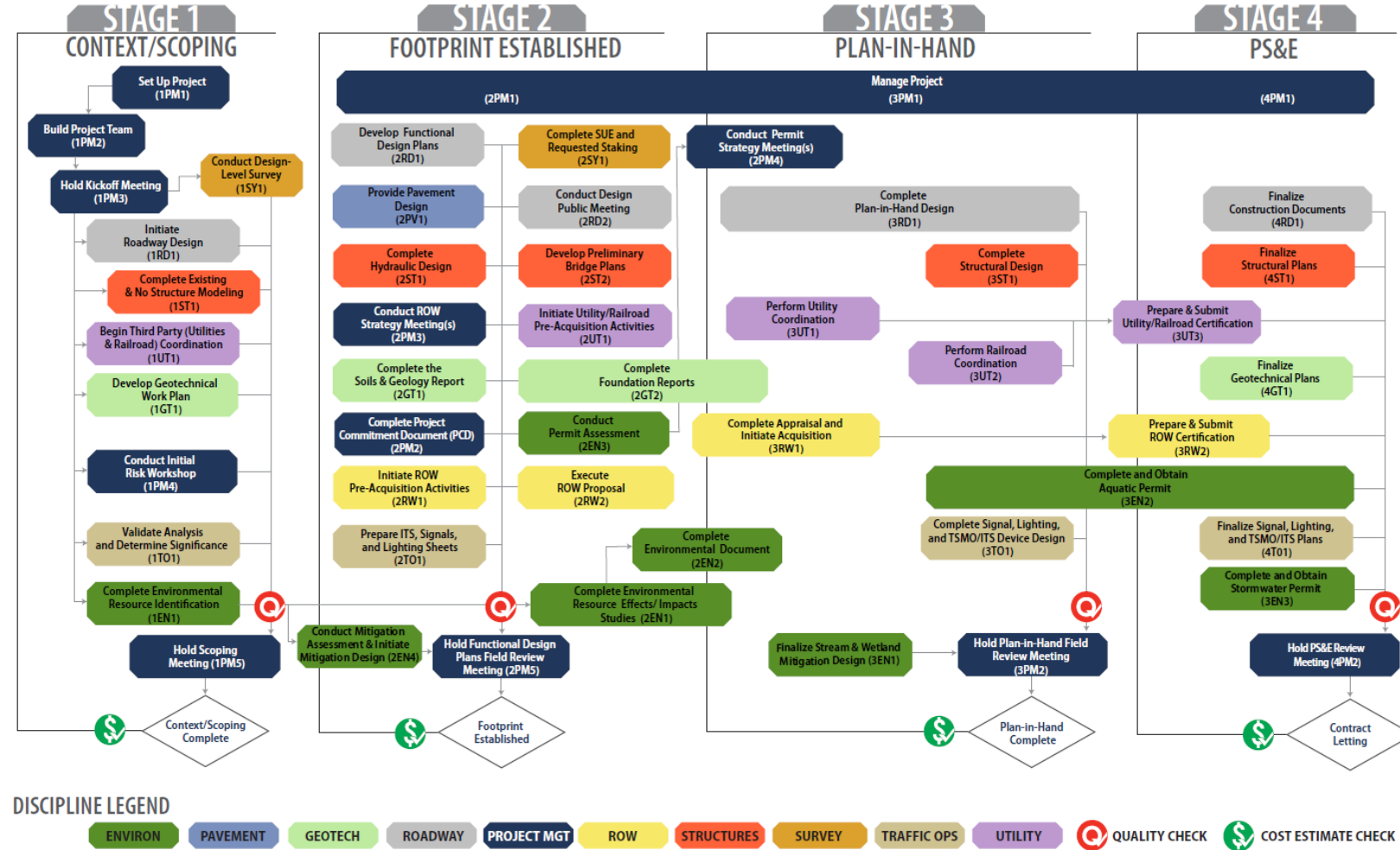
Stage 1 - Context/Scoping

Stage 2 - Footprint Established (ROW)

Stage 3 - Plan-In-Hand (Construction)

Stage 4 - PS&E (Construction Bid Package)

At the end of Stage 4, the construction plans are ready for Contract Letting



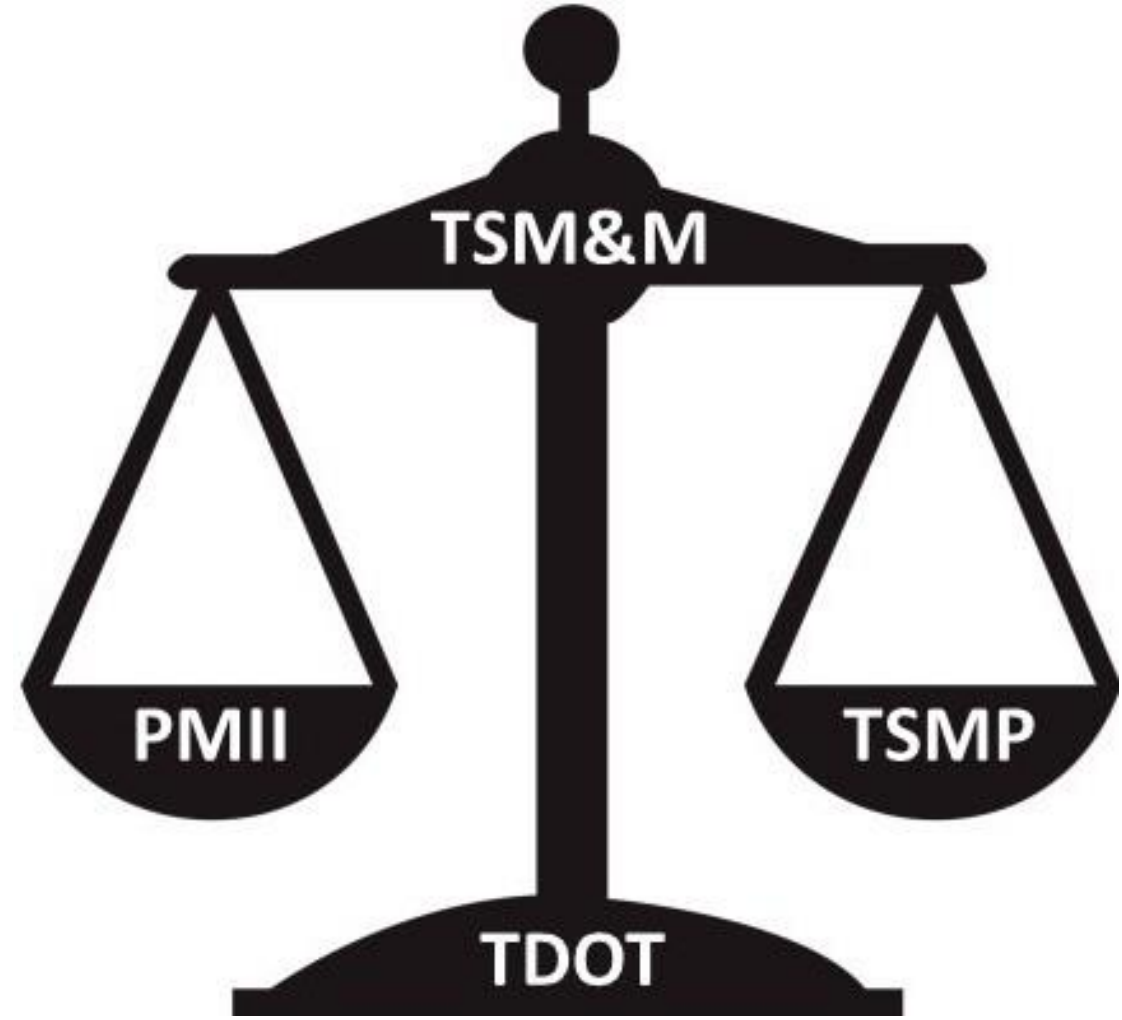
QA/QC Activities Checklists

- QA/QC Checklists are being developed for each PDN Stage (1-4).
- Checklist will be updated for each discipline as needed.
- To be completed by an independent reviewer.

3TO1 Complete Signal, Lighting, and TSMO/ITS Device Design		TN
Add text	b.	<input type="checkbox"/> All cabinet types are correct (standard or pole mounted).
Add text	c.	<input type="checkbox"/> All maintenance access points are approved by the TDOT Maintenance Manager.
Add text	d.	<input type="checkbox"/> ITS devices and structures (CCTV) are located out of the clear zone or adequately protected.
Add text	e.	<input type="checkbox"/> All cabinets are adequately protected.
Add text	12.	<input type="checkbox"/> Traffic Management Station design meets the operations criteria and TDOT standards.
Add text	a.	<input type="checkbox"/> Radar selection is appropriate and meets criteria.
Add text	i.	<input type="checkbox"/> Each device is placed to accurately read all lanes.
Add text	ii.	<input type="checkbox"/> The design layout of detection zones and wireless device placement follows manufacturer recommendations and does not exceed performance limits.
Add text	b.	<input type="checkbox"/> Loops selection is appropriate and meets criteria.
Add text	i.	<input type="checkbox"/> The placement of all loops and loop groups conforms to TDOT standards.
Add text	ii.	<input type="checkbox"/> The selected loops are designed appropriately to stay within manufacturer's performance limits.
Add text	13.	<input type="checkbox"/> Dynamic Message Signs (DMS) design meets the operations criteria and TDOT standards.
Add text	a.	<input type="checkbox"/> Horizontal placement over the correct lanes.
Add text	b.	<input type="checkbox"/> Structures reviewed and approved the DMS structure and foundation.
Add text	c.	<input type="checkbox"/> Vehicle clearance requirements are met.
Add text	d.	<input type="checkbox"/> LED viewing cone and sign alignment meet driver visibility requirements.
Add text	e.	<input type="checkbox"/> The type of DMS selected meets the operations criteria.
Add text	f.	<input type="checkbox"/> Static signs do not block the CCTV view of the DMS.
Add text	g.	<input type="checkbox"/> Static signs and DMS have been coordinated to meet visibility requirements and avoid conflicts.
Add text	h.	<input type="checkbox"/> The selected loops are designed appropriately to stay within manufacturer's performance limits.
Add text	14.	<input type="checkbox"/> RWIS design meets the operations criteria and TDOT standards.
Add text	a.	<input type="checkbox"/> The selected loops are designed appropriately to stay within manufacturer's performance limits.
Add text	15.	<input type="checkbox"/> Signal Interconnect design meets the operations criteria and TDOT standards.
Add text	a.	<input type="checkbox"/> Box types are correctly identified per standards.
Add text	b.	<input type="checkbox"/> Each cabinet is the correct size and in the correct location.
Add text	16.	<input type="checkbox"/> Ramp Meters design meets the operations criteria and TDOT standards.
Add text	a.	<input type="checkbox"/> The selected components are designed appropriately to stay within manufacturer's performance limits.

TSM&M Program

- TSM&M = Traffic Signal Maintenance & Modernization
- Established in 2021 with the creation of the Preventative Maintenance Inspection & Inventory (PMII) program to join the Traffic Signal Modernization Program (TSMP)
- The TSM&M Program was established to assist local agencies with the maintenance and modernization of their existing traffic signals who meet the PMII and/or TSMP program criteria



2023 TSM&M Report

- Updated and submitted to TDOT leadership every year to summarize the TSM&M activities to date.
- This summary covers the TSMP program since 2019 and the PMII program since 2021.

TDOT Traffic Signal Maintenance and Modernization (TSM&M) Program Summary 2019-2022



PREPARED BY:
TDOT TRAFFIC OPERATIONS DIVISION
June 2023

TSMP Program Efforts

- TSMP Requirements
 - Submit a TSMP Grant Application (TDOT Fall Grant Application)
 - Existing Traffic Signals on State Routes (Including ICBs & School Zones)
 - Non-CMAQ Counties
 - At least one TSMP project awarded in each TDOT Region per year
- 41 Total TSMP projects awarded to date.
 - Region 1: 11 TSMP Projects
 - Region 2: 14 TSMP Projects
 - Region 3: 7 TSMP Projects
 - Region 4: 9 TSMP Projects

2022-23 TSMP Project Awards

2022-23 Traffic Signal Modernization Program (TSMP) Project Awards

Total TSMP Project Awards: 11 Projects

No.	TDOT Region	County	Local Agency	State Route(s)	PPRM Project Termini	Log Miles	General Scope of Work Summary
1	1	Union	City Of Maynardville	SR-61	SR-61 (Maynardville Highway), From SR-144 (Hickory Star Road) to Main Street in Maynardville (TSMP) (3 intersections: Hickory Star Rd, Heiskell Rd, Main St.)	L.M. 5.40 to L.M. 7.18	Traffic Signal Controller Upgrade Project
2	2	Bradley	City of Cleveland	SR-2	SR-2 (US-11), Intersection at 17 th Street NW in Cleveland (TSMP)	L.M. 9.90 to L.M. 9.96	Traffic Signal Cabinet and Pedestrian Upgrade Project
3	2	Fentress	City of Jamestown	SR-52	SR-52 (Central Avenue), Intersection at Main Street and Main Street, Intersection at Rugby Avenue in Jamestown (TSMP) (2 Intersections: Main St, Main St./Rugby Ave.)	L.M. 12.80 to L.M. 12.84	Traffic Signal Heads and Controller Upgrade Project
4	2	Franklin	City of Decherd	SR-16	SR-16 (US-41A), From Sharp Springs Road to County Plaza Shopping Center in Decherd (TSMP) (3 intersections: Sharp Springs Rd, Bible Crossing Rd, County Plaza)	L.M. 10.36 to L.M. 10.98	Traffic Signal Heads and Controller Upgrade Project
5	2	McMinn	City of Etowah	SR-30	SR-30 (Tennessee Avenue), Intersection at 8th St. in Etowah (TSMP)	L.M. 20.94 to L.M. 20.98	Traffic Signal Controller, Cabinet, and Pedestrian Upgrade Project
6	2	Rhea	City of Dayton	SR-29	SR-29 (US-27), From Able Drive to Nokian Tyres Drive in Dayton (7 Intersections: Able Dr, Iowa Ave, Blythes Ferry Rd, Access Rd, Walnut Grove Rd, Manufacturers Rd, Nokian Tyres Dr.) (TSMP)	L.M. 4.36 to L.M. 9.37	Traffic Signal GPS Interconnect Upgrade Project
7	3	Dickson	City of Charlotte	SR-48	SR-48, Intersection at SR-49 (Van Leer Highway) in Charlotte (TSMP)	L.M. 17.56 to L.M. 17.62	Traffic Signal Heads, Controller, Cabinet, and Pedestrian Upgrade Project
8	3	Lincoln	City of Fayetteville	SR-50/SR-273	SR-50 (US-431), From Washington Street to College Street and SR-273 (US-431), From College Street to Maple Street in Fayetteville (TSMP) (4 Intersections: Washington St, College St, Market St, Maple St.)	SR-50: L.M. 12.28 to L.M. 12.41 SR-273: L.M. 17.84 to L.M. 18.04	Traffic Signal Heads, Controller, and Pedestrian Upgrade Project
9	3	Marshall	Town of Cornersville	SR-11	SR-11 (US-31A), From North of Wakefield Avenue to North of Fairview Avenue in Cornersville (TSMP)	L.M. 3.97 to L.M. 5.34	School Zone Flashing Beacon Upgrade Project
10	3	Maury	City of Columbia	SR-50	SR-50 (James M. Campbell Boulevard), From SR-243 (Trotwood Avenue) to SR-7 (US-31) in Columbia (TSMP) (9 Intersections: SR-50, Commerce St, Shady Brook St, Mall Entrance, Hillary Dr, Brookmeade Dr, Pillow Dr, SR-245, US-31)	L.M. 14.31 to L.M. 16.23	Traffic Signal Timing Upgrade Project
11	4	Fayette	Town of Somerville	SR-15	SR-15 (US-64), Intersection at Woodbridge Road in Somerville (TSMP)	L.M. 15.81 to L.M. 15.87	Traffic Signal Heads, Controller, Cabinet, Detection, and Pedestrian Upgrade Project

PMII Program Efforts

- PMII Requirements
 - Existing Traffic Signals on State Routes (Not including ICBs or School Zones)
 - Towns under 5,000 population (2020 U.S. Census)
 - Non-CMAQ Counties Unincorporated Areas
 - 329 total intersections identified for the PMII Program
 - Region 1 = 101 Intersections
 - Region 2 = 122 Intersections
 - Region 3 = 60 Intersections
 - Region 4 = 46 Intersections
 - 2023: Data Collection
 - 2024: Project Letting

Other Funding Opportunities to Upgrade Traffic Signals

- Transportation Modernization Act (TMA) Funds
- IMPROVE Act Projects
- Legislative Projects
- Carbon Reduction (CR) Funds
- CMAQ Funds
- USDOT Grant Applications such as the 2023 RAISE Grant

TDOT Traffic Signal Maintenance and Modernization (TSM&M) Program Summary 2019-2022



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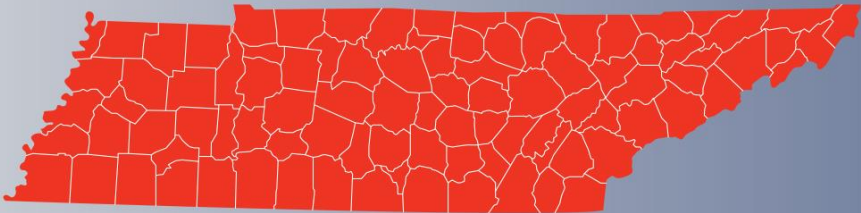
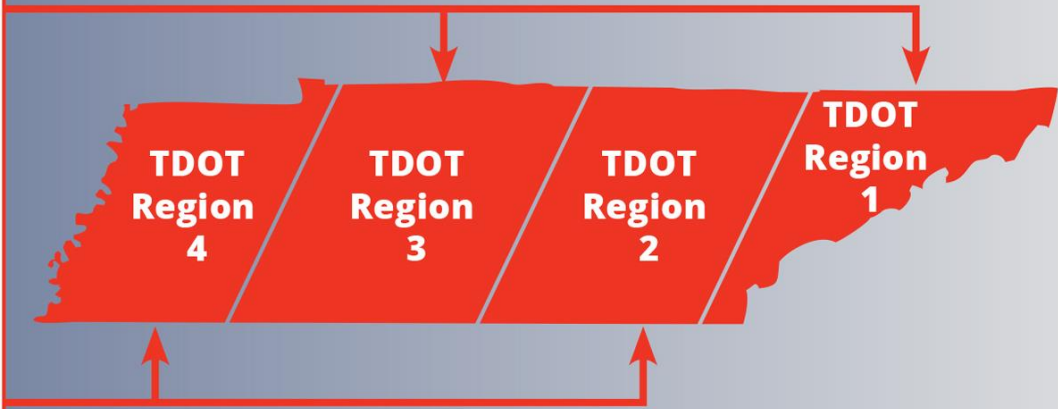
FY24 Budget - Transportation Modernization Act

**\$3 Billion
Total**

**Proposed Allocated
to State
Transportation
Projects**

**\$750 Million
for EACH Region**

- IMPROVE Act Acceleration
- Rural Interstate Widenings
- Major Urban Congestion Projects
- Statewide Partnership Program Projects
- Safety and State of Good Repair Acceleration
- Economic Development Projects

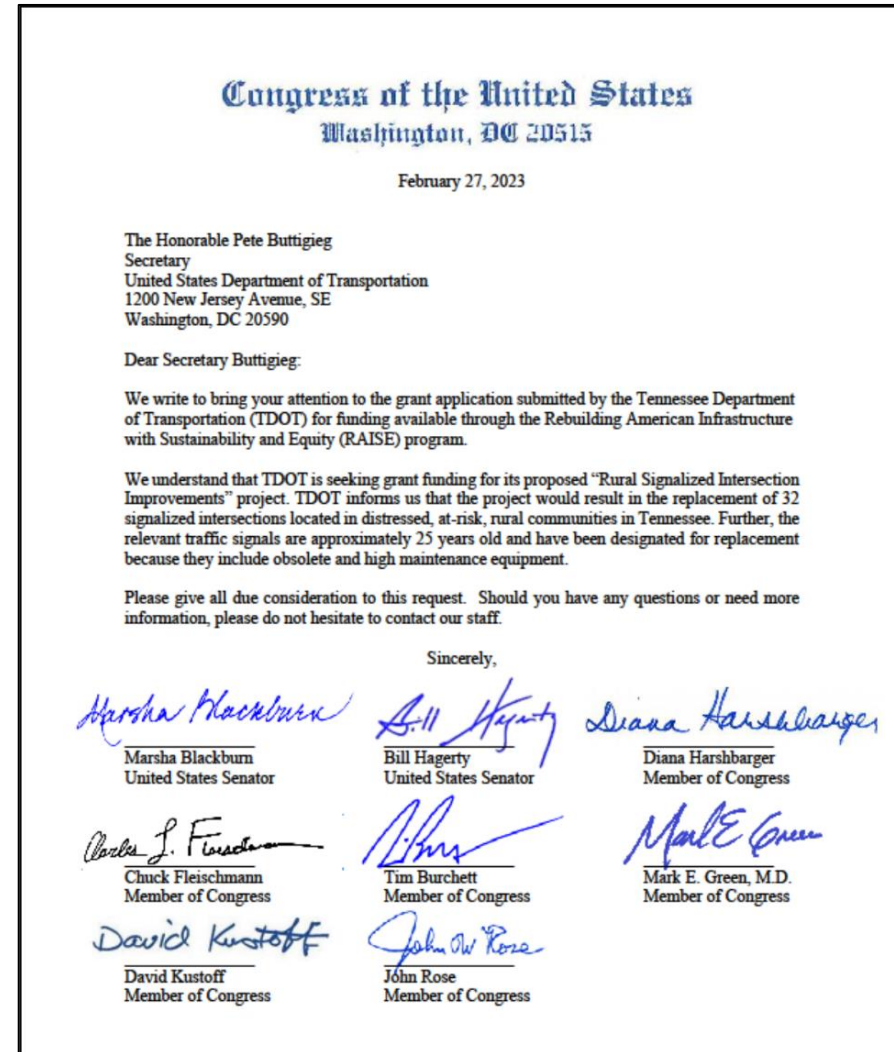


**\$300 Million
for State Aid Program**

*Flows to counties for local
transportation projects*

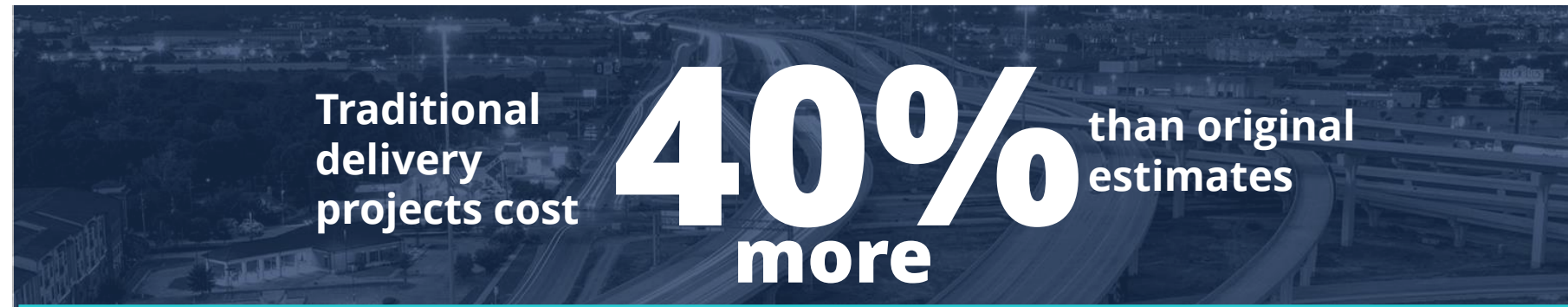
USDOT RAISE Grant Application (Not Selected)

- 32 Traffic Signal Intersections statewide were identified to meet an established rebuild criteria for this grant (State Route, Distressed/At-Risk County, City/Town with Population under 5,000)
 - 4 in Distressed Counties
 - 28 in At-Risk Counties
 - \$12.8 million total estimated cost (\$10.8 million requested/\$2 million participation by TDOT)



Alternative Delivery Methods to Streamline the Process

- Determine the best way or method to deliver the project to completion
 - TDOT Internal Staff
 - Consultant On-Call Contracts
 - Project Specific Advertisements
 - Public-Private Partnerships (P3)
 - General Engineering Services Contracts



Bottom Line:

Projects take too long and cost too much



Note: Alternative delivery currently statutorily limited

The Transportation Modernization Act

Questions and Contact Information



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Tennessee

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