Hitting the Road with TDOT
Project Delivery Network

February 15, 2023

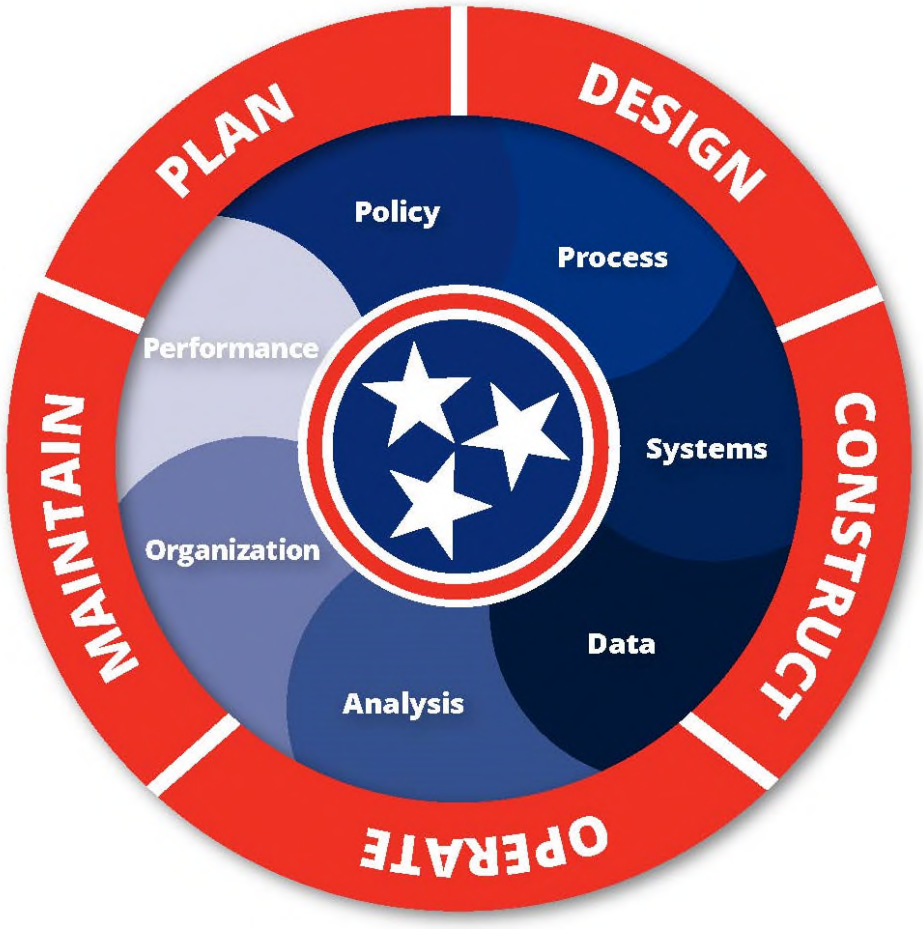
Objectives

- TDOT Project Delivery is changing!
  - Integrated Program Delivery
  - Project Delivery Network
- Today's Focus
  - Project Management & Project Delivery Network

Success at TDOT

What does a successful TDOT look like?

- Delivering What We Promise
- Meet User Expectations
- Best DOT



Project Delivery
Project Teams

Importance of a Project Team

TEAMWORK is key to project communication, acceleration, innovation and efficiency

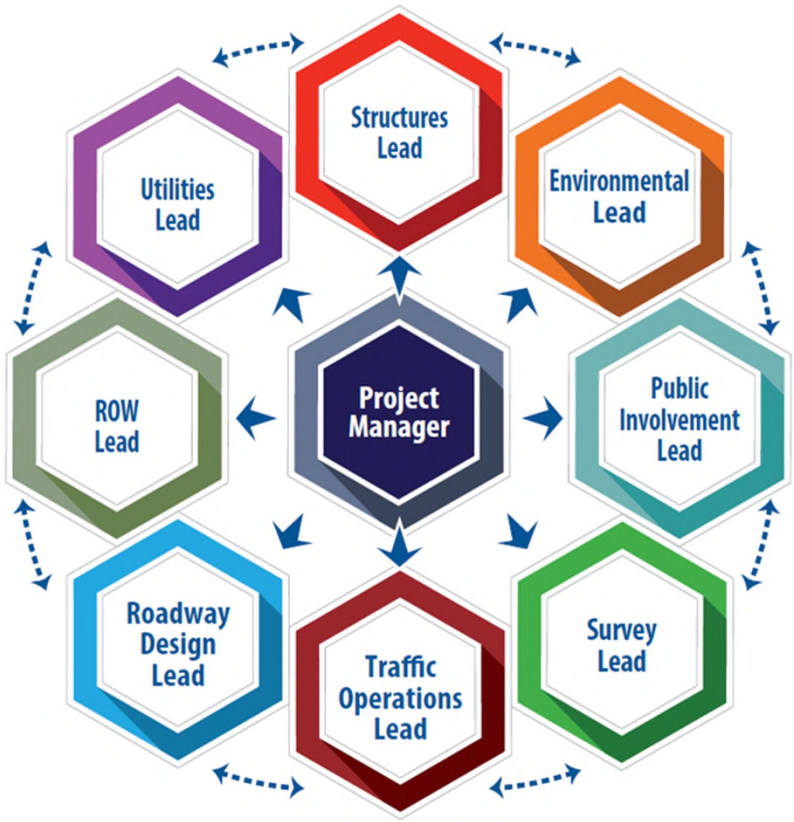
- Teamwork provides opportunities for collaboration and continual communication
- Allows for different disciplines to work interactively and simultaneously on their activities and tasks
- Better Management of Scope, Schedule, Budget, Risk and Quality
- Allows for opportunities to learn from each other and is much more enjoyable as everyone will see the value that they add

PDN KEY PRINCIPLE: TAKE ADVANTAGE OF THE POWER AND DIVERSE EXPERIENCE OF A PROJECT TEAM TO GUARANTEE PROJECT DELIVERY SUCCESS

Project Team Dynamics

How could you be included on a Project Team?

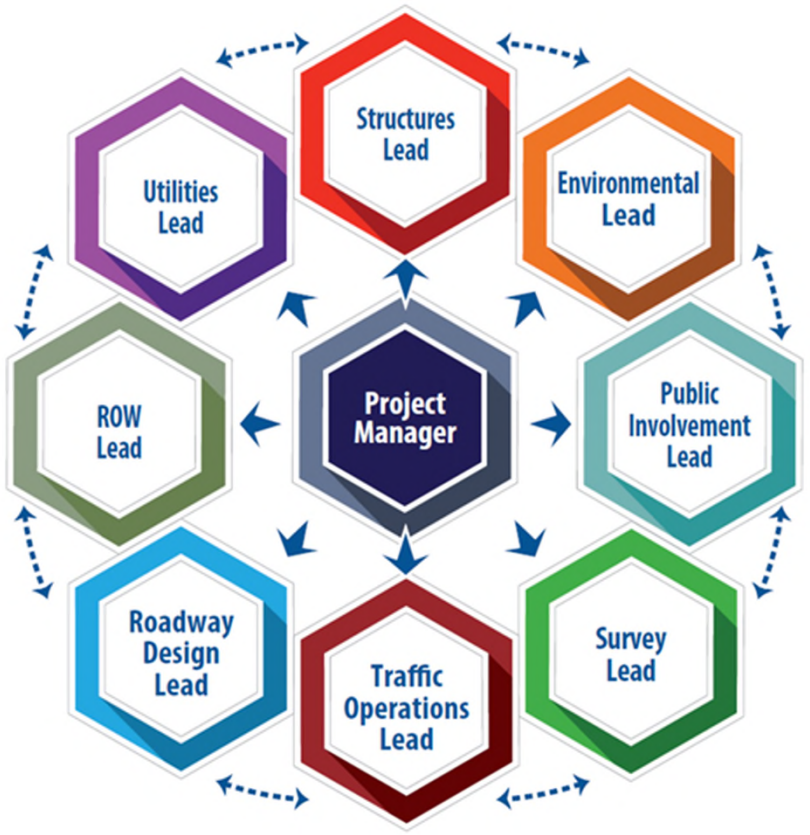
- TDOT - Assigned by Discipline Lead
- Consultant – Selected for a Specific Project or thru an On-call work order
- Even though you may not be the assigned team member, you're work will still be guided by the PDN.



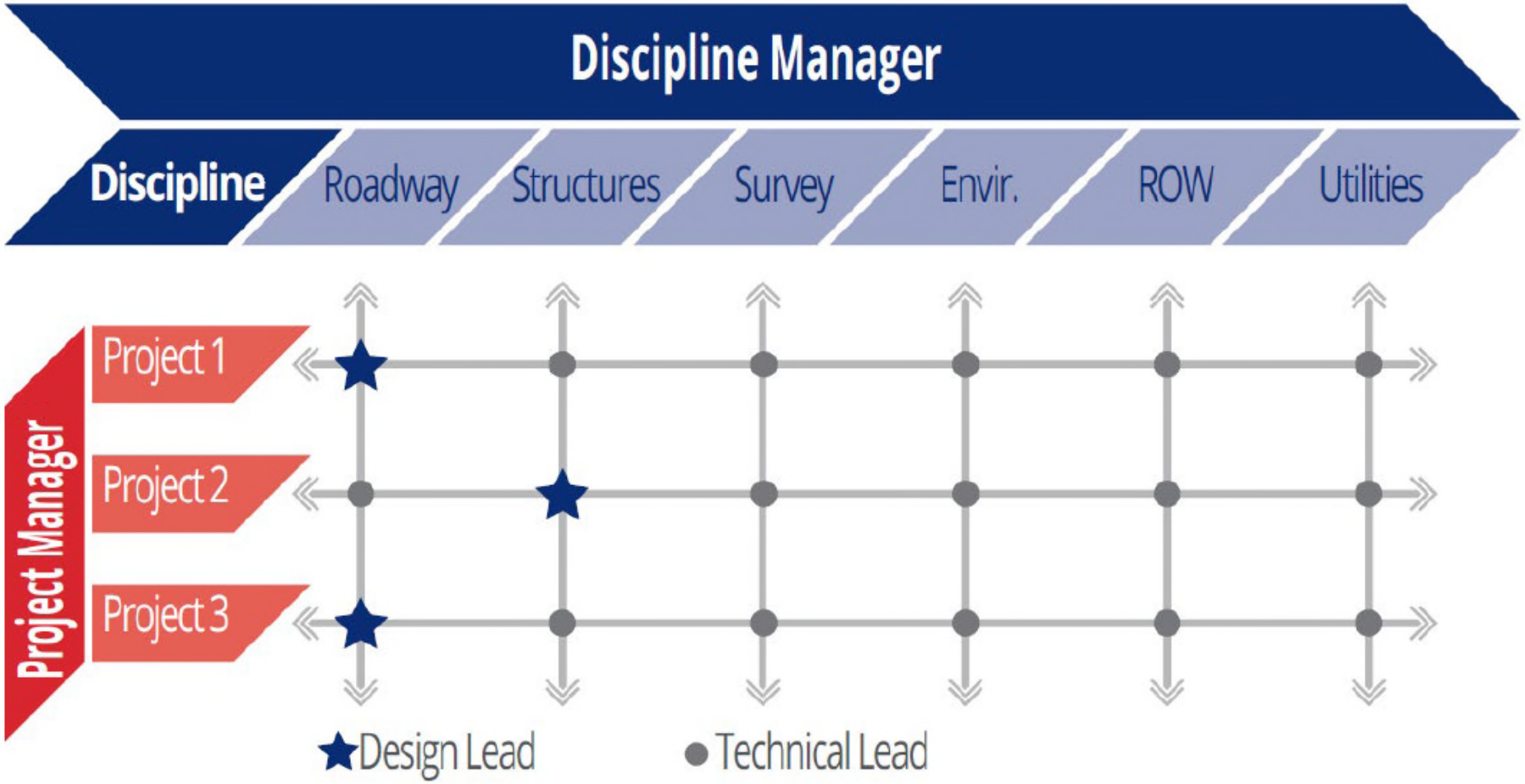
Project Team Dynamics

Key Roles and Responsibilities

- Innovation
- Decision Making at Team Level
- All technical disciplines engaged in the delivery process
- Perform work to standards within scope, schedule and budget
- Communicate openly with Team Members
- Be Proactive and Supportive
- Enhanced Project Quality
- Awareness and adherence to the Project Commitment Document.



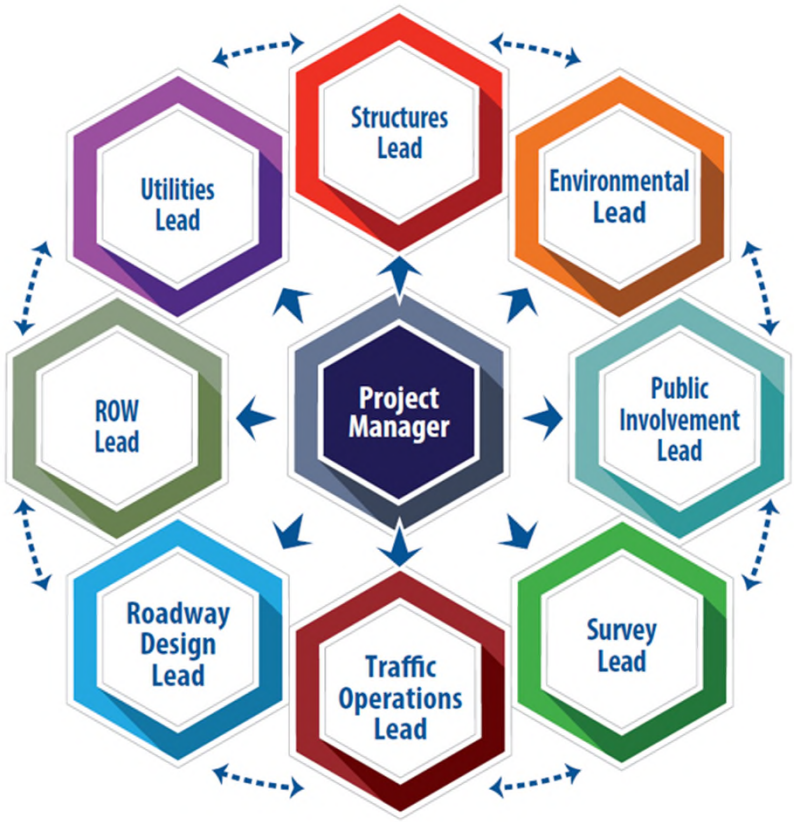
What is a Matrix Organization?



Project Manager

Key Roles and Responsibilities

- **Single point of contact for project accountability**
- Build and Lead Project Team
- Ensures Project has appropriate level of support and resources
  - Includes full lifecycle representatives
- Support Timely Decisions at a Team Level
- Planning, coordinating, monitoring and controlling of project



Project Management

Scope of Work

- Define what will and will not be included in the project

Budget

- Preliminary Engineering
- Right of Way
- Utilities
- Construction & CEI
- Informs Work Program

Schedule

- Project Specific, Aligned with Work Program

Quality

- Discipline & Team Checks

Risk

- Initial Assessments & Updates
- Prioritizes

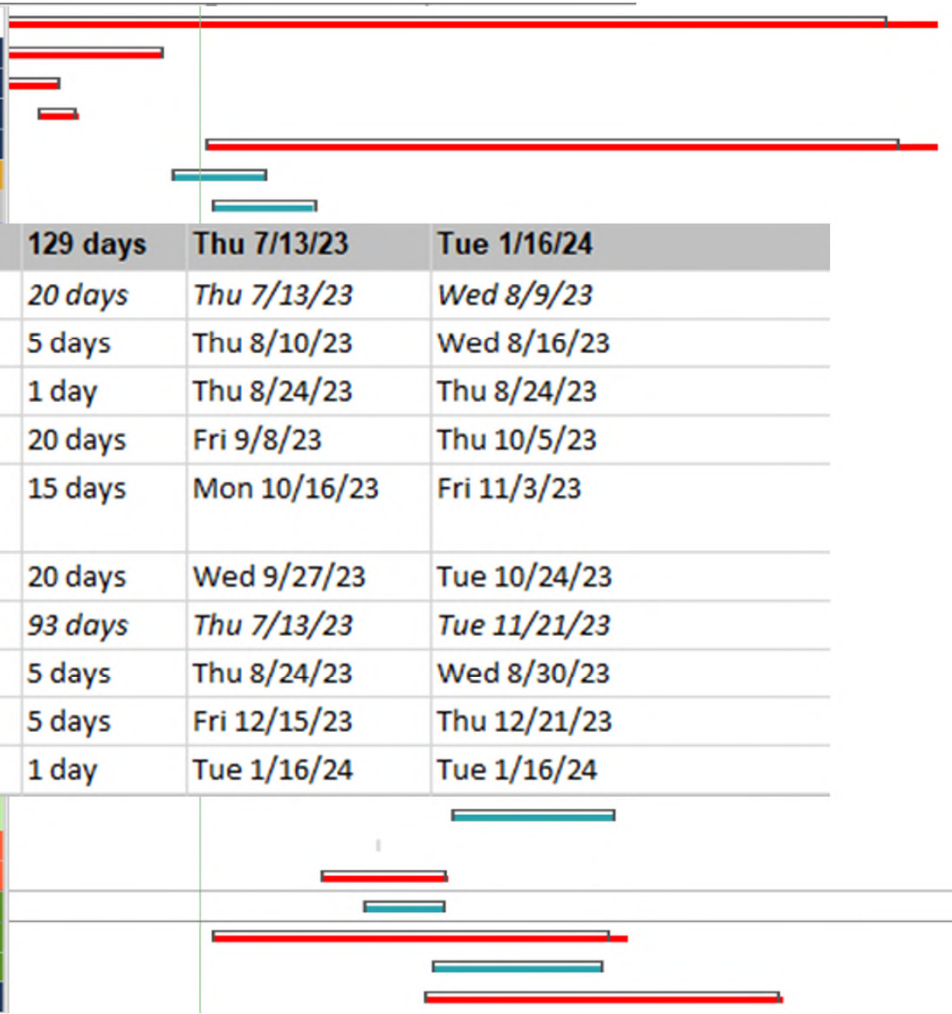
Communication

- Internal & External

Project Management - Schedule

STAGE 1- SETUP/CONTEXT/SCOPING	Fri 7/1/22	Thu 12/26/24
1PM1 Setup and Manage Project	Fri 7/1/22	Wed 12/7/22
1PM2 Build Project Team	Fri 7/1/22	Tue 8/23/22
1PM3 Hold Kick-Off Meeting	Wed 8/3/22	Fri 9/9/22
Manage Project	Mon 1/23/23	Tue 1/7/25
1SY1 Conduct Design-Level Survey	Mon 12/19/22	Fri 3/24/23
1RD1 Initiate Roadway Design	Mon 1/30/23	Tue 5/16/23
1UT1 Beg		
1EN1 Co		
1GT1 De		
1ST1 Co		
1TO1 Val		
1PM4 Co		
1QC1 Qu		
1PM5 Ho		
STAGE 2- F		
2PM2 Co		
2PM3 Co		
2SY1 Co		
2RD1 De		
2RD2 Co		
2PV1 Pro		
2RW1 Ini		
2RW2 Ex		
2UT1 Init		
2GT1 Co		
2GT2 Complete Soils/Foundation Reports	Thu 10/5/23	Tue 3/19/24
~~2ST1 Complete Hydraulic Design~~	~~Wed 7/19/23~~	~~Wed 7/19/23~~
2ST2 Develop Preliminary Bridge Plans	Tue 5/23/23	Wed 9/27/23
2EN1 Complete Environmental Resource Effects/Impacts	Thu 7/6/23	Mon 9/25/23
2EN2 Complete Environmental Document	Mon 1/30/23	Thu 3/14/24
2EN3 Conduct Permit Assessment	Thu 9/14/23	Thu 3/7/24
2PM4 Conduct Permit Strategy Meeting(s)	Thu 9/7/23	Thu 9/5/24

2RD1 Develop Functional Design Plans	**129 days**	**Thu 7/13/23**	**Tue 1/16/24**
- Develop a Utility Impact/Conflict Matrix	*20 days*	*Thu 7/13/23*	*Wed 8/9/23*
- Identify Initial Subsurface Utility Engineering (SUE) Needs	5 days	Thu 8/10/23	Wed 8/16/23
- Request Pavement Design	1 day	Thu 8/24/23	Thu 8/24/23
- Document Design Exceptions and Waivers	20 days	Fri 9/8/23	Thu 10/5/23
- Incorporate SUE Data and Lead Internal Design Deconfliction Meeting	15 days	Mon 10/16/23	Fri 11/3/23
- Develop Conceptual Traffic Control Strategies	20 days	Wed 9/27/23	Tue 10/24/23
- Develop Functional Design Plans	*93 days*	*Thu 7/13/23*	*Tue 11/21/23*
- Coordinate Geotechnical Analysis for Noise and Retaining Walls	5 days	Thu 8/24/23	Wed 8/30/23
- Compile Functional Plans & Reconcile Disciplines	5 days	Fri 12/15/23	Thu 12/21/23
- Participate in the Functional Design Plans Field Review	1 day	Tue 1/16/24	Tue 1/16/24



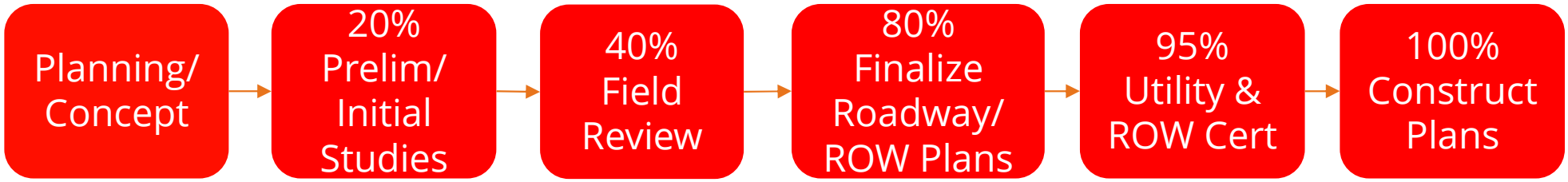
Project Delivery Network (PDN)

Project Delivery Network

- Where to find it: https://www.tn.gov/tdot/pm/pdn.html
- Customized to every project
- Allows flexibility to meet project demands
- 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 disciple review
- Disciplines will be involved earlier and throughout the project
  - Operations & ROW Examples
- Meet Federal & State Law, NOT a recipe book!

PPRM ⟶ PDN

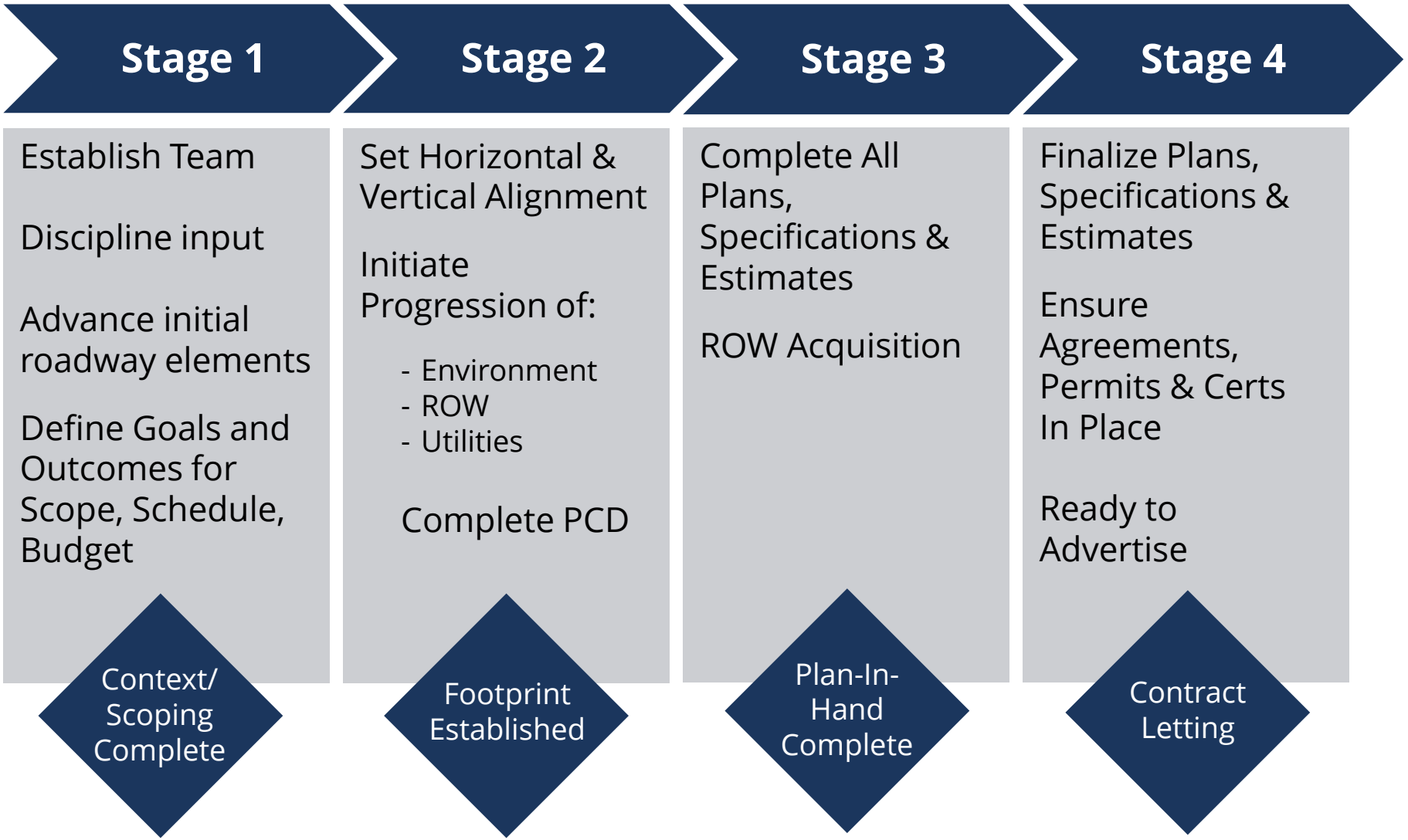
Program, Project & Resource Management



Project Delivery Network

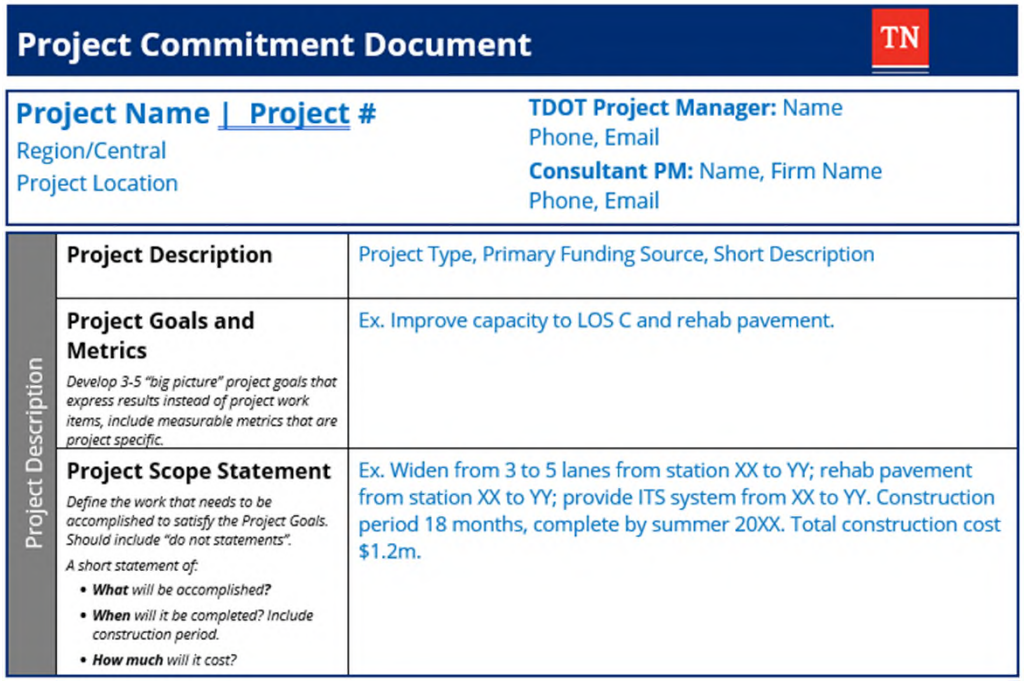
- PDN is contained within a pdf as a guide for delivery and management of projects, ***with supporting systems*** to replace PPRM.

Stage Goals to Drive Efficiency



Project Commitment Document

- Developed in Stage 1 and Finalized in Stage 2
  - Scope, Goals, Work Statement
  - Work Components, "Does not include" items
  - Delivery Method
  - Environmental Document Type
  - Schedule, risk based with letting and other key milestones
  - Budget for all phases (PE, ROW, Construction)
  - Risks to the project



Project Commitment Document TN

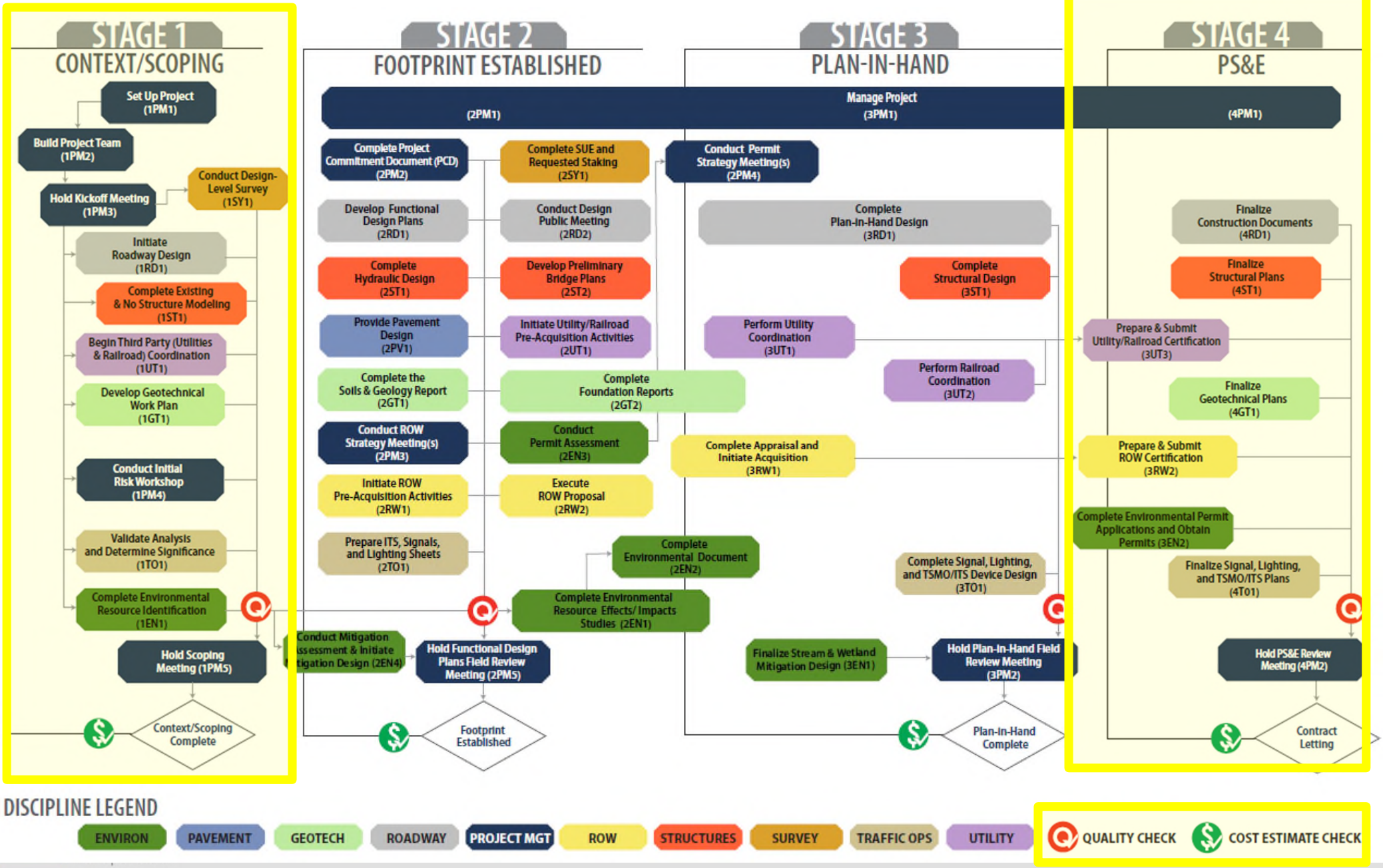
Project Name | Project #
Region/Central
Project Location

TDOT Project Manager: Name
Phone, Email
Consultant PM: Name, Firm Name
Phone, Email

Project Description		
	Project Description	Project Type, Primary Funding Source, Short Description
	Project Goals and Metrics *Develop 3-5 "big picture" project goals that express results instead of project work items, include measurable metrics that are project specific.*	Ex. Improve capacity to LOS C and rehab pavement.
	Project Scope Statement *Define the work that needs to be accomplished to satisfy the Project Goals. Should include "do not statements".* *A short statement of:* • ***What** will be accomplished?* • ***When** will it be completed? Include construction period.* • ***How much** will it cost?*	Ex. Widen from 3 to 5 lanes from station XX to YY; rehab pavement from station XX to YY; provide ITS system from XX to YY. Construction period 18 months, complete by summer 20XX. Total construction cost $1.2m.

- Signed by Project Team, Director of Project Management and Regional Director

Network Activity Diagram



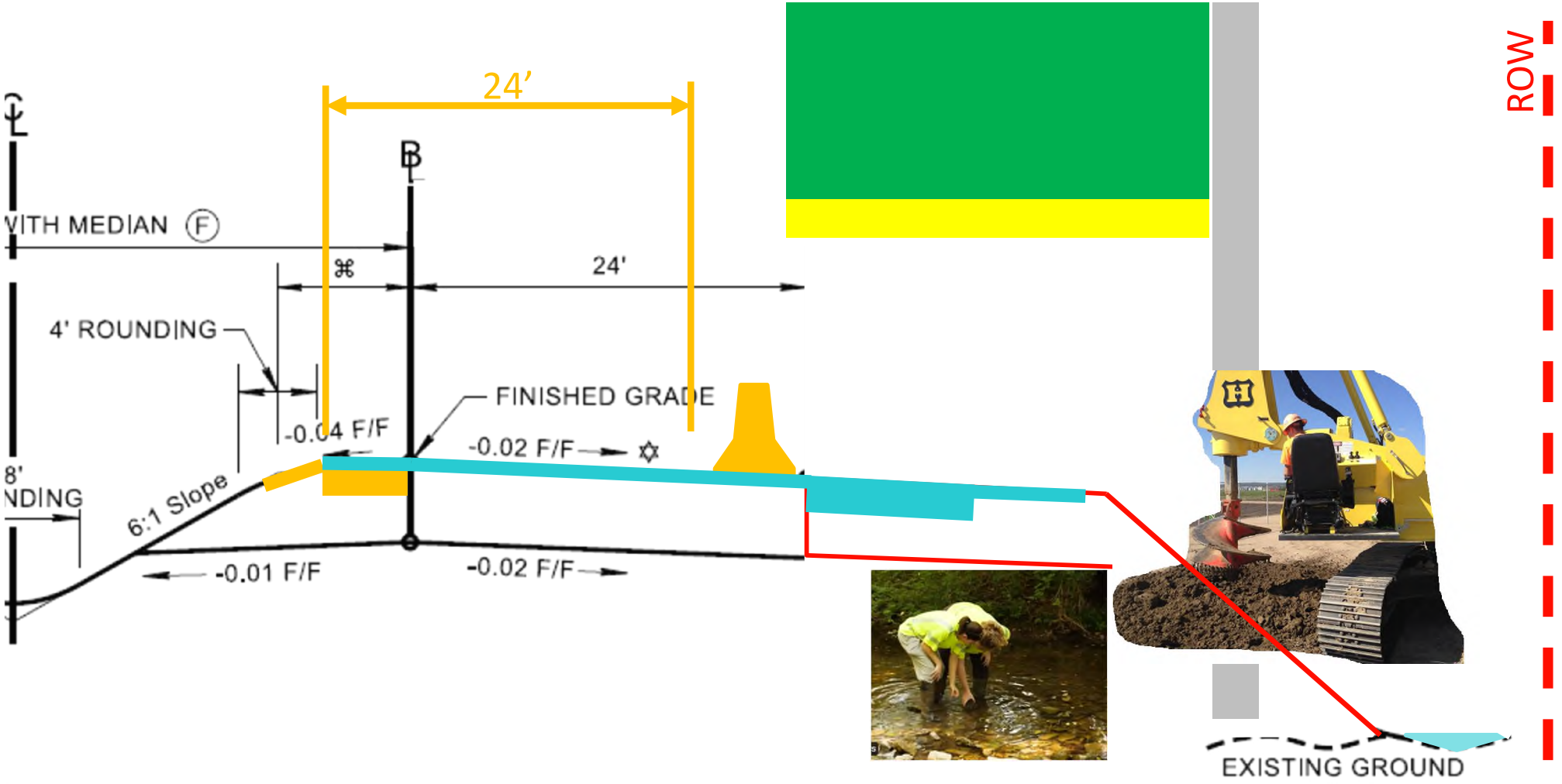
Stage 1: Context/Scoping

Improved Initial Studies and Project Scope

- **Goal:** Establish the team and define critical project goals and intended outcomes for scope, schedule, budget, quality, and risks.
- **Design Deliverable:** "Line & Grade Package" of preliminary alignments, cross sections, and ROW requirements based on survey, environmental, structural, and geotechnical input with a cost estimate for the project.
- **Management Deliverable:** Draft Project Commitment Document and Scoping Meeting Minutes
- **Milestone:** Upon completion of the Scoping Meeting, the team has collectively defined the project details (scope, schedule, budget, quality, and risks), and the team is ready to move into the Footprint Established.

Scoping Meeting …Complete Picture

- "Add an auxiliary lane"



Stage 4: Plans, Specs & Estimates

Final Plans and Funded Construction

- **Goal:** Finalize the project's plans, specifications, and estimates (PS&E) and ensure all agreements, permits, and certifications are in place for letting.
- **Design Deliverable:** Final Construction Document package.
- **Management Deliverable:** Notification of complete letting package.
- **Milestone:** Upon completion of the PS&E Review, the project is Let.

Confirm

- All comments have been addressed; commitments, scope, budget of PCD; Permits, agreements, documents are complete for letting;
- "Plans Assembly" is the responsibility of the Project Team.

Improvements & Benefits

IMPROVEMENTS	BENEFITS
Maintenance Involvement in Design	• Early identification of maintenance issues • Influence scope • Full lifecycle consideration of alternatives
Multidiscipline plan set in Stage 2 (Functional Design Plans)	• Entire team aligned. • ROW positioned to move forward right after Functional Design Field Review Meeting. • Flexible solutions for critical path (ROW, permits) issues.
Develops complete multidiscipline **construction documents** in Stage 3, Plan in Hand	• Roadway Design Lead compiles complete (from all disciplines design details, quantities, and specs.) • Entire team aligned. • Comments resolved before Construction Document turn in.

Improvements & Benefits

IMPROVEMENTS	BENEFITS
Geotechnical Complete soils and geology report using the Line and Grade Package Foundations reports late in Stage 2 or early in Stage 3	• Pavement design finalized for Functional Design Plans. • Slope recommendations included in Functional Design Plans. • Disciplines (structures, lighting, etc.) have info to complete detailed design as part of Stage 3, w/out holding up footprint setting (likely conservative).
Structures formalizes recommendations for planning & advances bridge preliminaries into the Functional Design Plans	• Span configuration, bridge length, beam type, and out-to-out width • Provides a head-start on the bridge preliminaries for the functional design plans.

Improvements & Benefits

IMPROVEMENTS	BENEFITS
Traffic Operations validates traffic analysis early in Stage 1	• Confirms (and in some cases establishes) lane geometries, storage lengths, and design configurations for the Line and Grade Package.
Develops conceptual traffic control strategies in Stage 2	• Determines conservative extents of potential work zone management strategies (including haul roads, bypass, etc.) • Limits overdesign at this stage of delivery.
Introduces a **ROW** Strategy Meeting	• Contemplates impacts and prioritizes overly complex or time-sensitive acquisitions or relocations. • Start title work in Stage 1 at Line & Grade.
Acquisitions to be parallel with Plan-in-Hand development	• Leverages parallel teamwork and activities to maximize the design schedule and reduce waiting for others to complete their work. • Reduces the overall schedule completion, while driving reliability in delivery.

Improvements & Benefits

IMPROVEMENTS	BENEFITS
Environmental Formalize Environmental Technical Study Area (ETSA) in planning	• Begins resource study early in planning (study area is expanded beyond probable design footprint). • Design changes can be flexible within the established footprint, eliminating later re-evaluations.
Provide early scoping validation and screening of environmental resources	• Screens out technical study work for resources not impacted by the project in Stage 1. • Begins data collection, evaluation, and agency coordination, expediting critical path permit items.
Confirms environmental changes in the Functional Design Plans	• Integrates avoidance/minimization design changes (incl. stream and wetland mitigation extents) to solidify footprint.
Initiates Permit Assessment off the Line and Grade Package	• Initiates this critical path as soon as feasible to start mitigation design, permit sketch, and permit application activities.

Improvements & Benefits

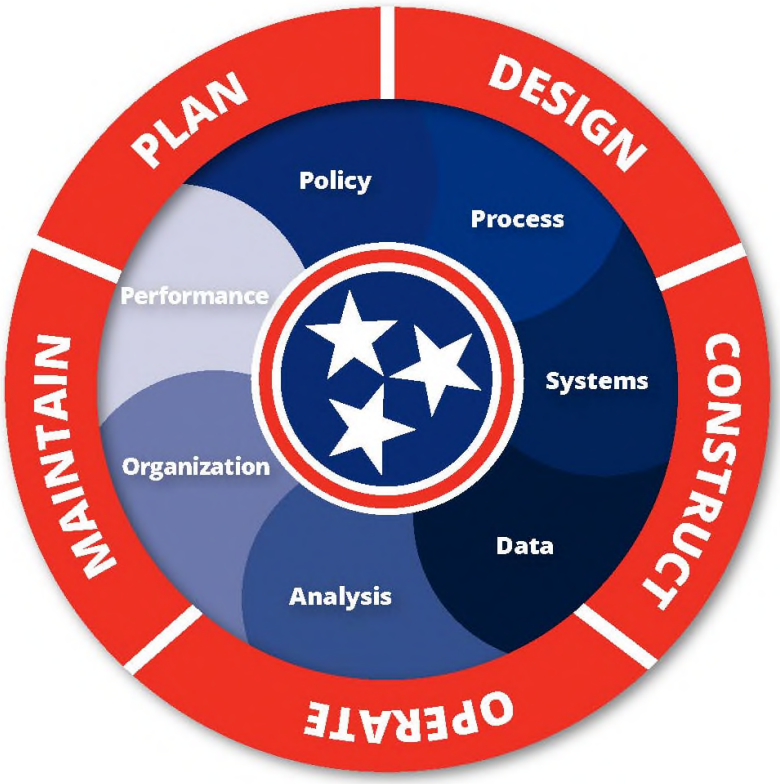
IMPROVEMENTS	BENEFITS
Complete design-level **Survey** in Stage 1 to inform the Line and Grade Package	• Final survey data eliminates/reduces rework and incorrect assumptions. • Disciplines work on scope and schedule in parallel with completing the final survey, regardless of the critical path. • Incorporate SUE data into the functional design plans to eliminate conflicts, direct relocation strategies, and reduce schedule delays.
Formalizes internal design **Utility** deconfliction for Functional Design Plans	• Early deconfliction includes both a roadway and utility perspective and SUE level A and B data in hand to reduce relocation time and cost. • Expedites Utility Coordination Plans to reduce schedule impacts for less complex utility impacts.

Improvements & Benefits

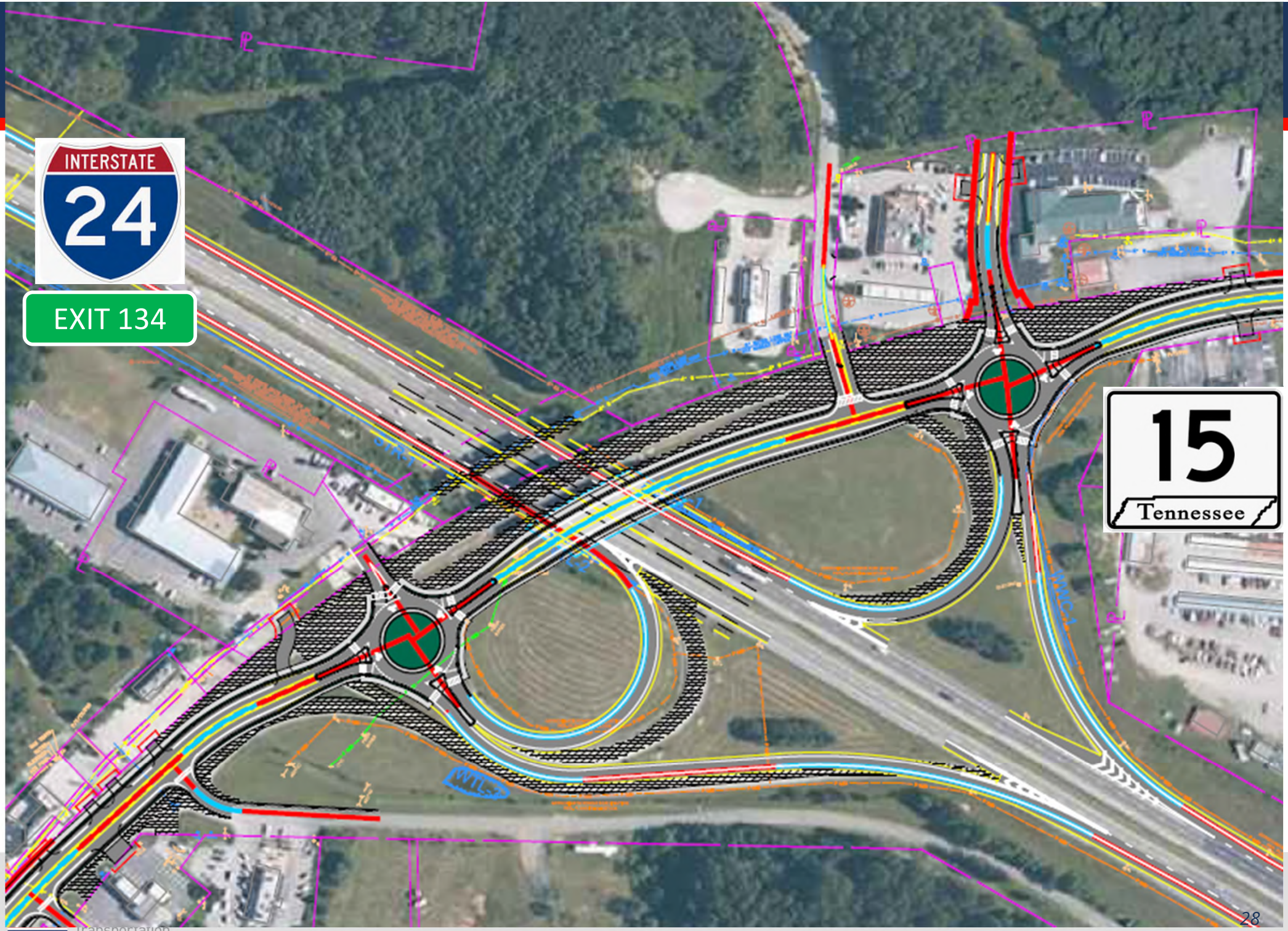
IMPROVEMENTS	BENEFITS
Complete Plan Documents	• Interdisciplinary coordination and design provide a comprehensive and compatible set of plans earlier in the process.
Predictable Lettings	• More confidence bundling projects together at an earlier stage, better economy. • Reliable Lettings for both Contractors and CEI planning & procurement.
Reliable Project Coordination	• Proximity projects reliably considered in TMP • Corridor projects coordinated and phased in reasonable scale

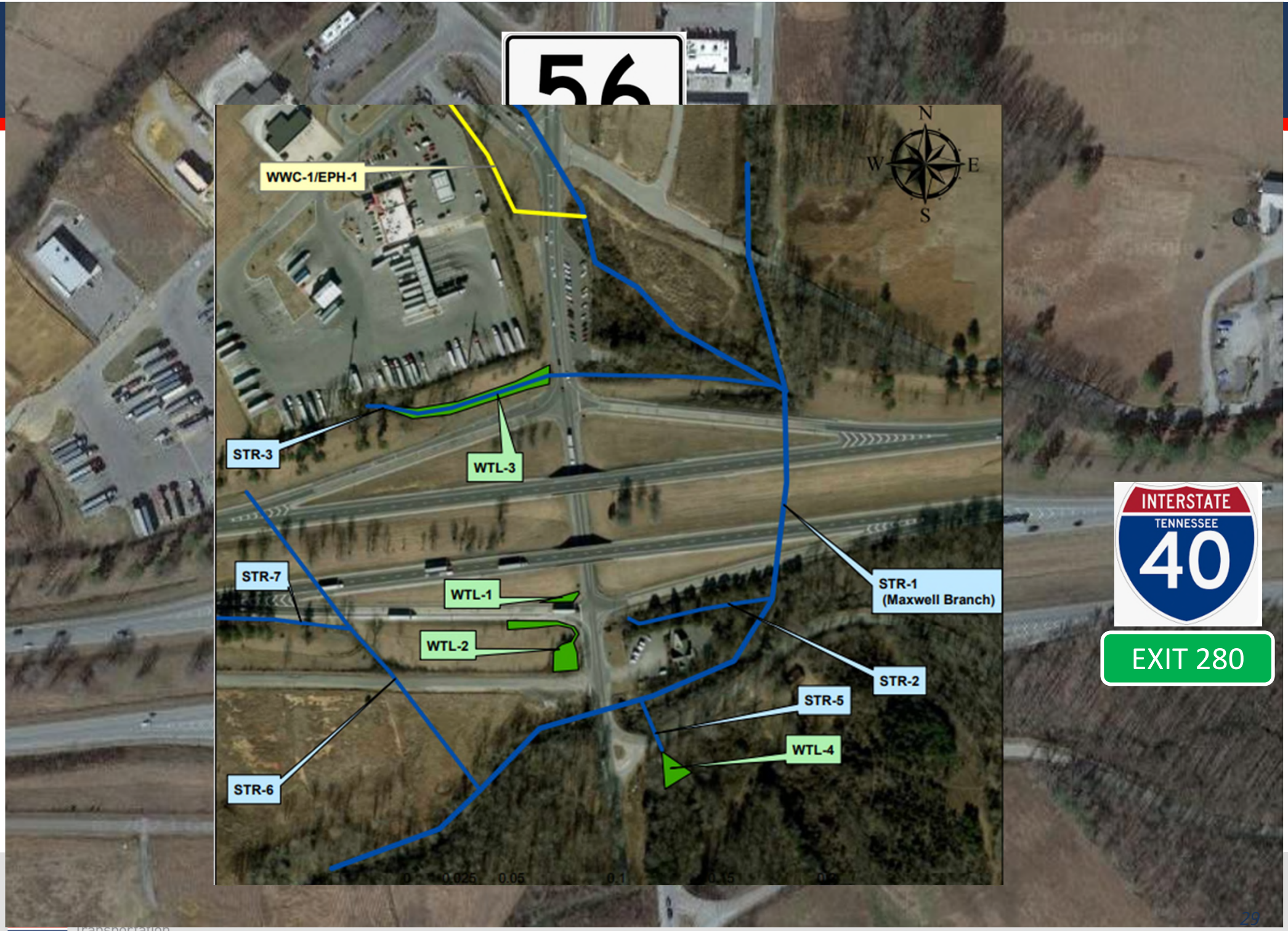
PDN Region 2 Transition Projects

- I-24 at SR-15 Monteagle
- I-40 at SR-56 Baxter
- I-24 at SR-50 Pelham



IPD
Integrated Program Delivery


INTERSTATE
24
EXIT 134
15
Tennessee


56
WWC-1/EPH-1
STR-3
WTL-3
STR-7
WTL-1
WTL-2
STR-1
(Maxwell Branch)
STR-2
STR-5
WTL-4
STR-6
N
W
E
S
INTERSTATE
TENNESSEE
40
EXIT 280

What will be impacted by PDN?

- Project Concept (Stage 0)
- Cost Estimating Process 

- Manuals, Guidelines, Documentation
- Project Document Submittals
- Project Management Systems and Software
- Responsibility and Accountability for Project Scope, Schedule, and Budget
- Supporting the Work Program and Delivery Timeframes

Questions

Resources

- TDOT Project Management
  - https://www.tn.gov/tdot/pm/staff.html
- Project Delivery Network
  - https://www.tn.gov/tdot/pm/pdn.html
- Project Search
  - https://projectsearch.app.tdot.tn.gov/
- EPIC & IPD Website
  - https://www.teamtn.gov/tdot/epic-ipd.html
- Matrix Organization & Video
  - https://www.teamtn.gov/tdot/epic-ipd/ipd/matrix-organization.html