



Pennsylvania Asphalt
Pavement Association
Pennsylvania Rides on US.



JULY 29, 2026

**KELLY BARBER, P.E.
CHIEF ENGINEER**



Pennsylvania
Department of Transportation

THANK YOU

**DISTRICT 2
CENTRAL OFFICE
PAPA
AND OUR CONTRACTORS**



Pennsylvania Asphalt
Pavement Association
Pennsylvania Rides on US.



Pennsylvania
Department of Transportation

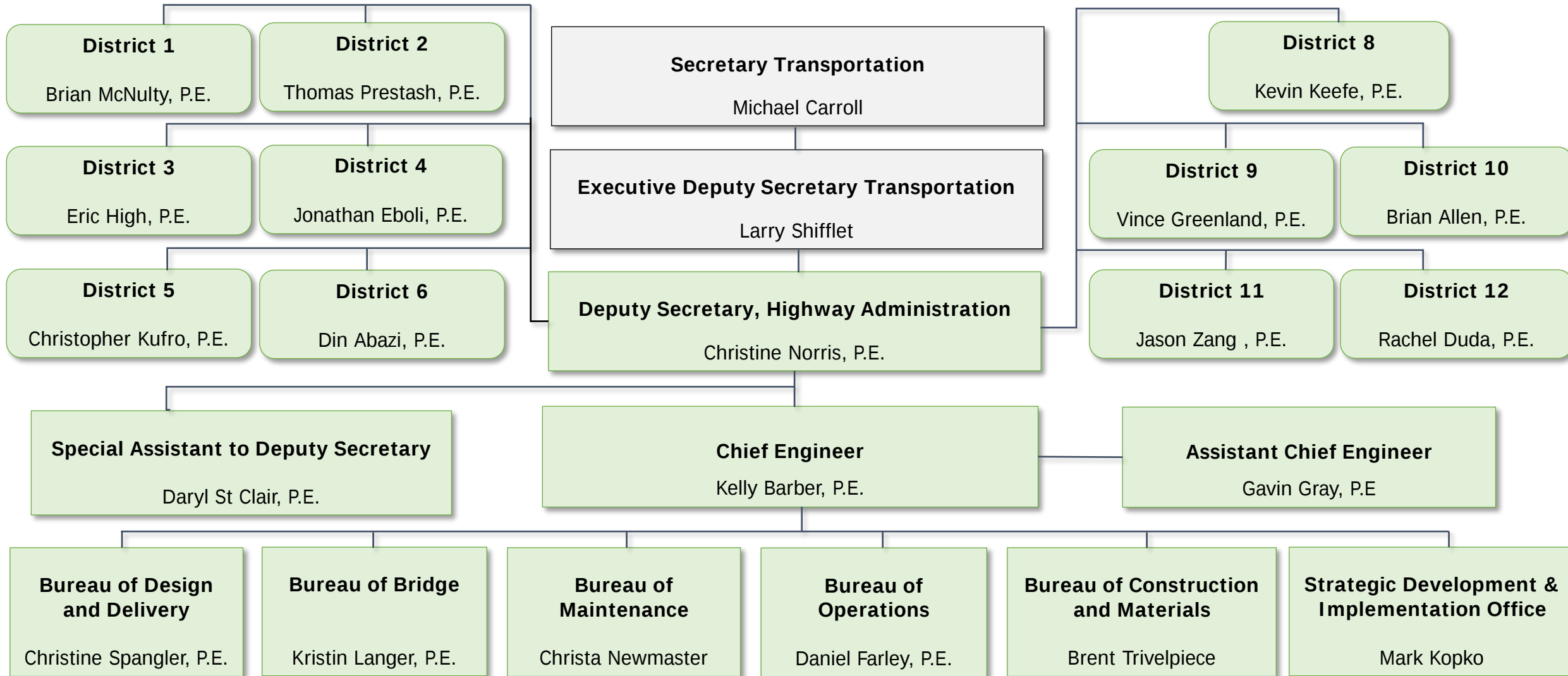


Pennsylvania
Department of Transportation



*Total miles on all PA roadways

HIGHWAY ADMINISTRATION DEPUTATE



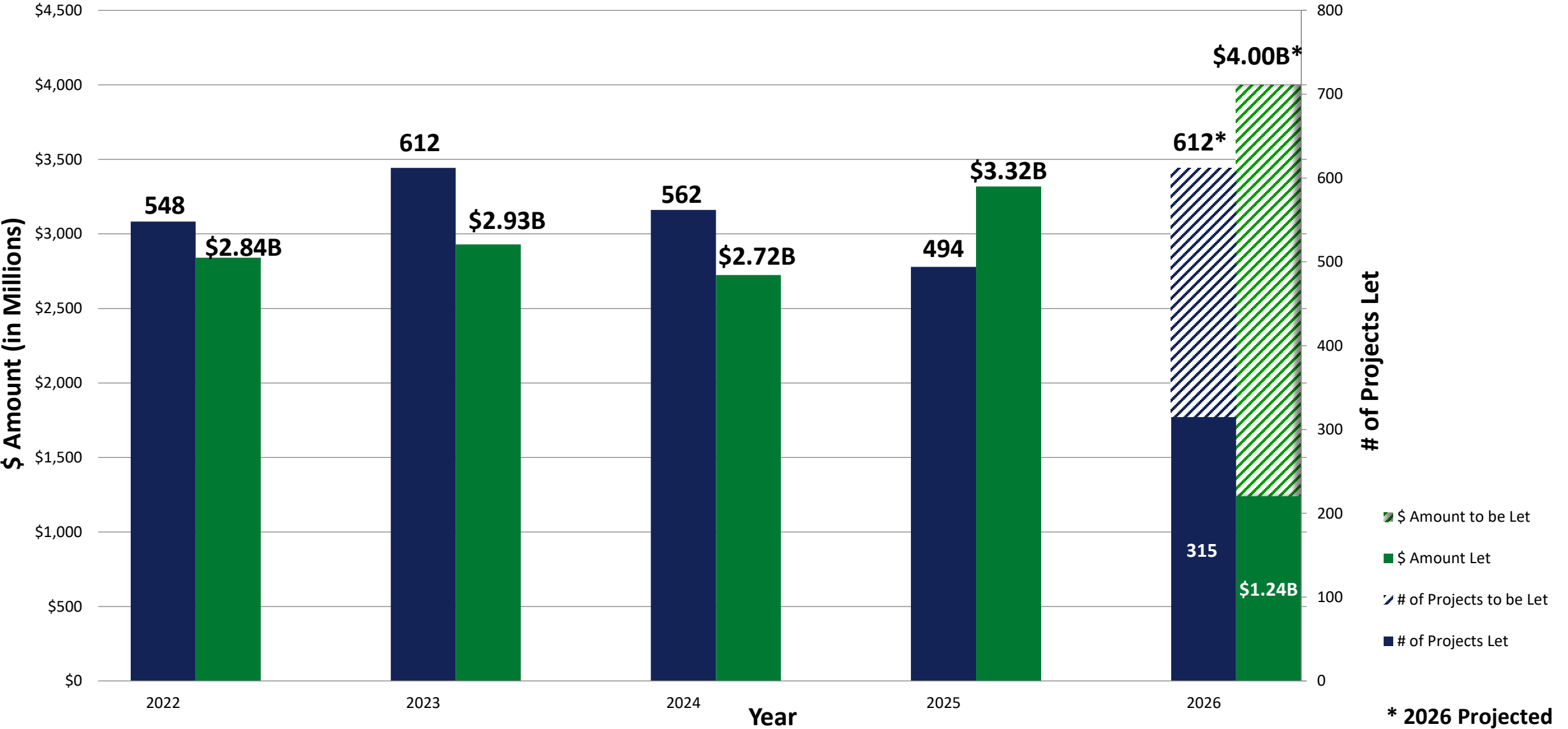
2026 PROGRAM

\$3.0 Billion

+ I-83 South Bridge

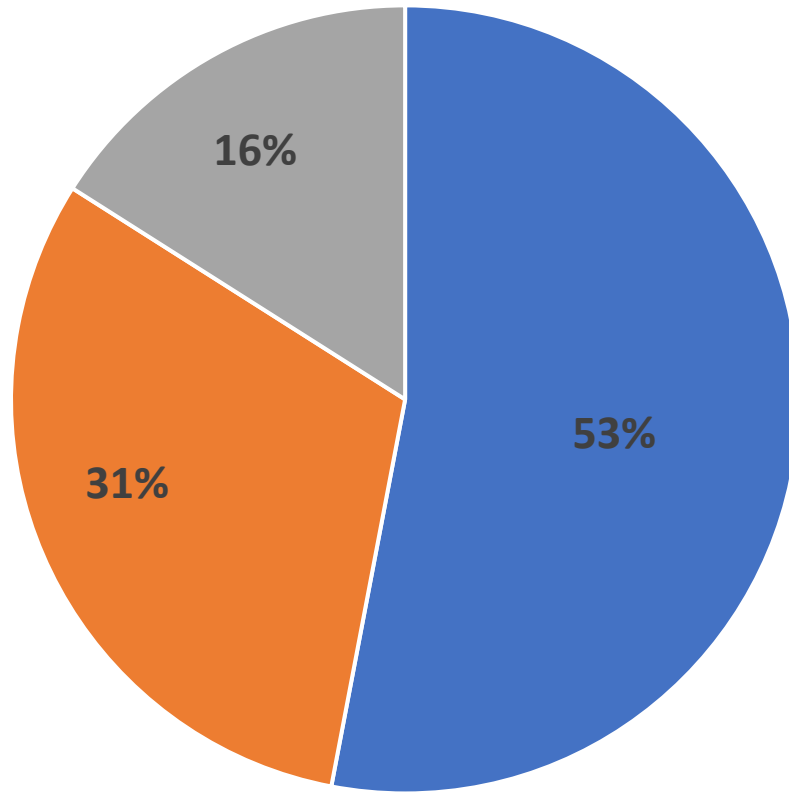
\$4.0 Billion Total

PROJECT LETTING TRENDS



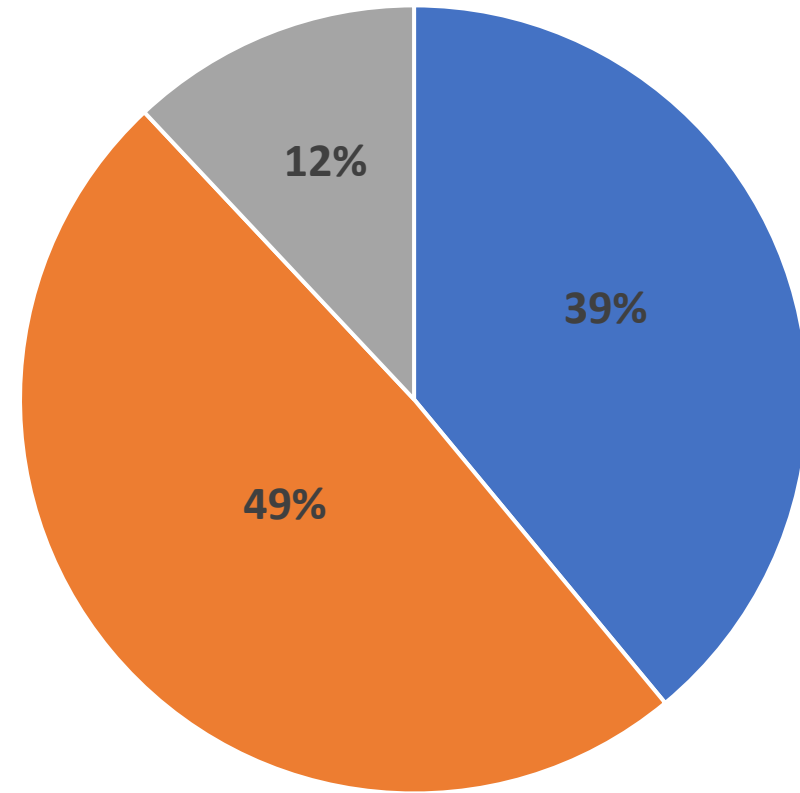
2026 PROGRAM WITH AND WITHOUT SOUTH BRIDGE

2026 Letting Program without I-83 South Bridge



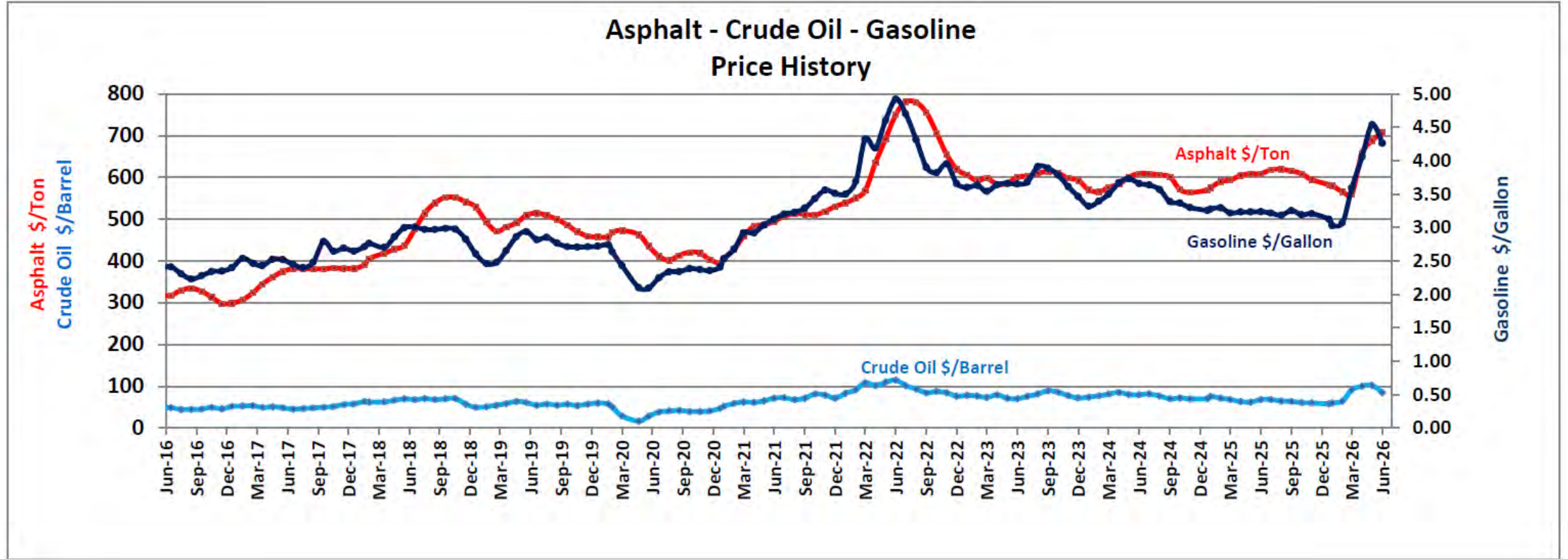
■ Highway ■ Bridge ■ Other

2026 Letting Program with I-83 South Bridge



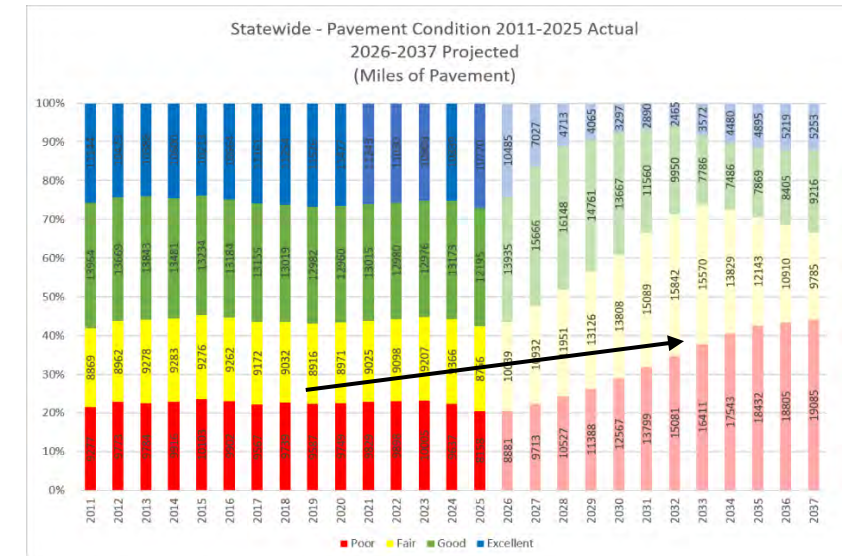
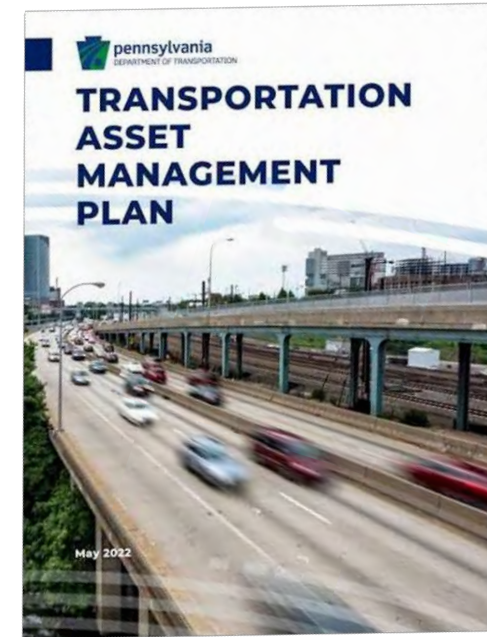
■ Highway ■ Bridge ■ Other

OIL/ASPHALT PRICES

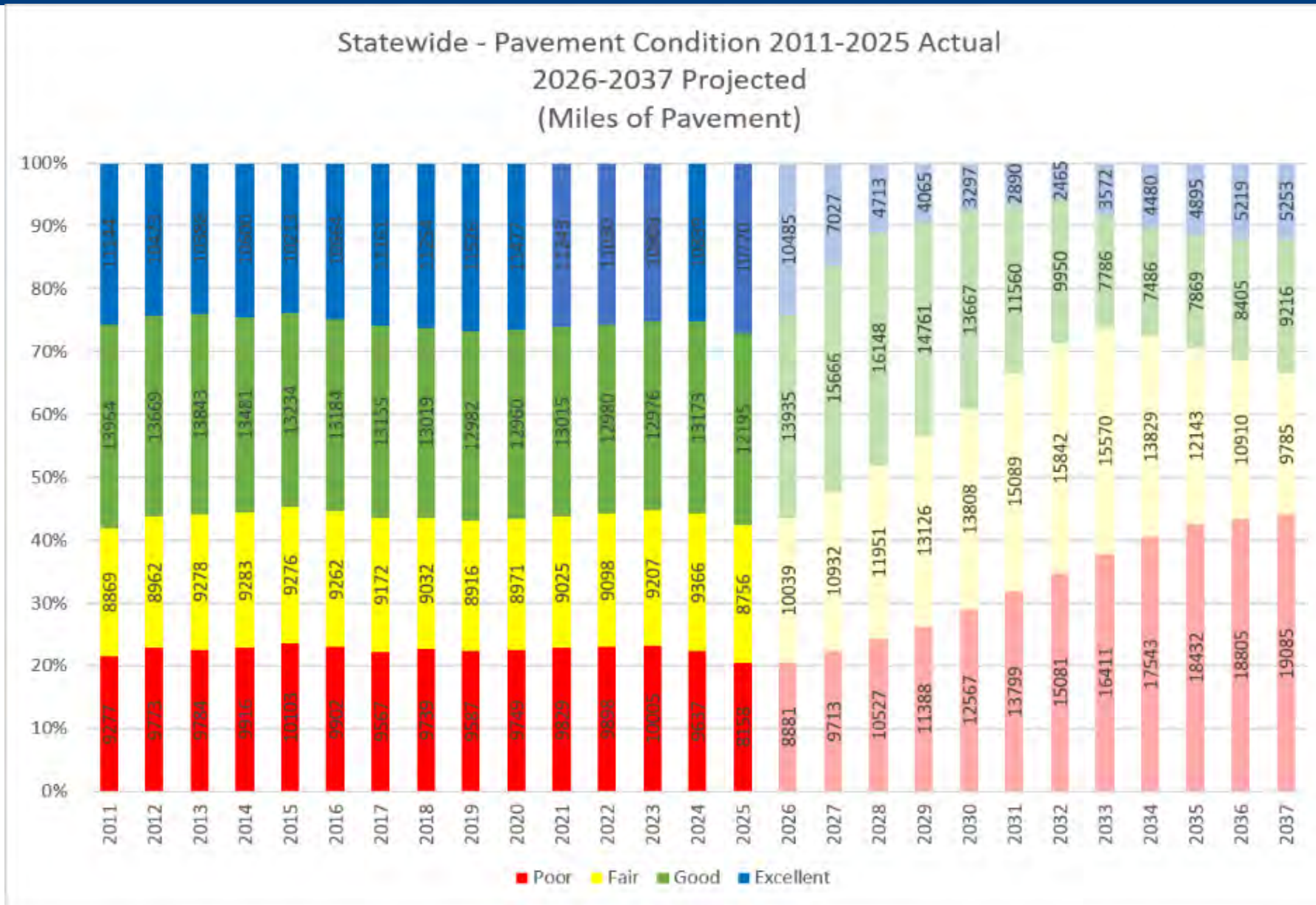


FUNDING IMPACTS

- Forecasted asset conditions are based on Lowest Life Cycle Cost and anticipated funding
- Lowered federal funding amounts would cause asset conditions to deteriorate faster with limited preservation funding moving "the wave" of poor conditions forward



ROADWAYS - STATE OF GOOD REPAIR



FEDERAL REAUTHORIZATION

Considerations:

- It's still early in the process
- Level or Better benefits PA
- Flexibility helps



NEW & UPCOMING PILOT PROJECTS

- **Fuel Resistant Binder for Amish Horse and Buggy Routes**

- STIC initiative submitted by PAPA
- Specification developed in coordination with industry
- To be included in a District 11 project on SR 18 in Lawrence County
- Paving scheduled for 2027

- **Reflective Crack Relief Asphalt Interlayer**

- Working with industry to evaluate future use of this concept
- Early stages of research and development
- Exploring future use on potential pilot projects



Image: Jim Halverson

SAFETY INITIATIVES

Safety Vest Pilot

Meridian Archer Guard System

Zone Command Intelligent Warning System

Body Camera Pilot

SAFETY VEST PILOT

Orange Vest with Yellow Trim

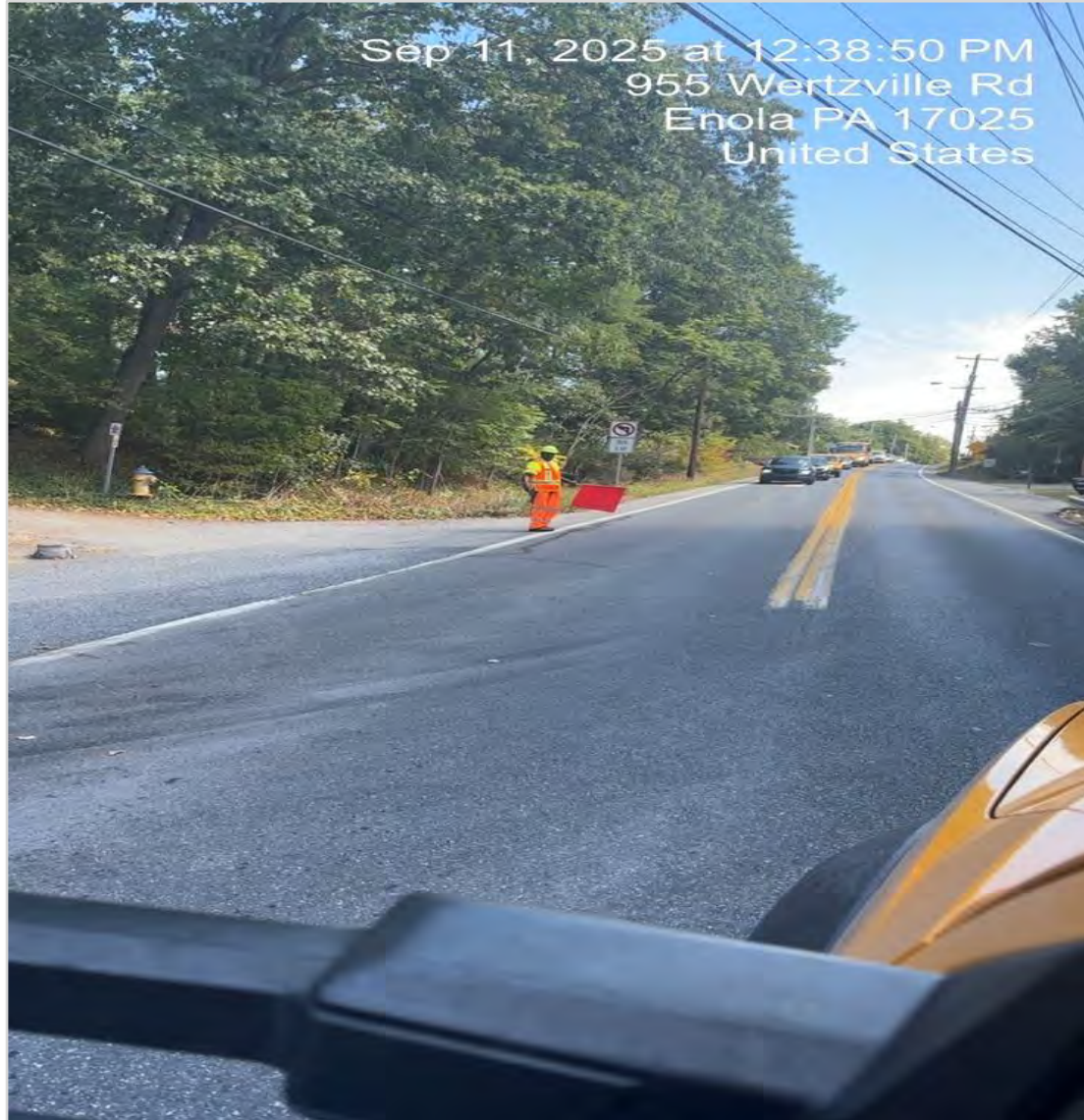
Front



Back



SAFETY VEST PILOT



SAFETY VEST PILOT – NIGHT TEST



SAFETY VEST PILOT – NIGHT TEST



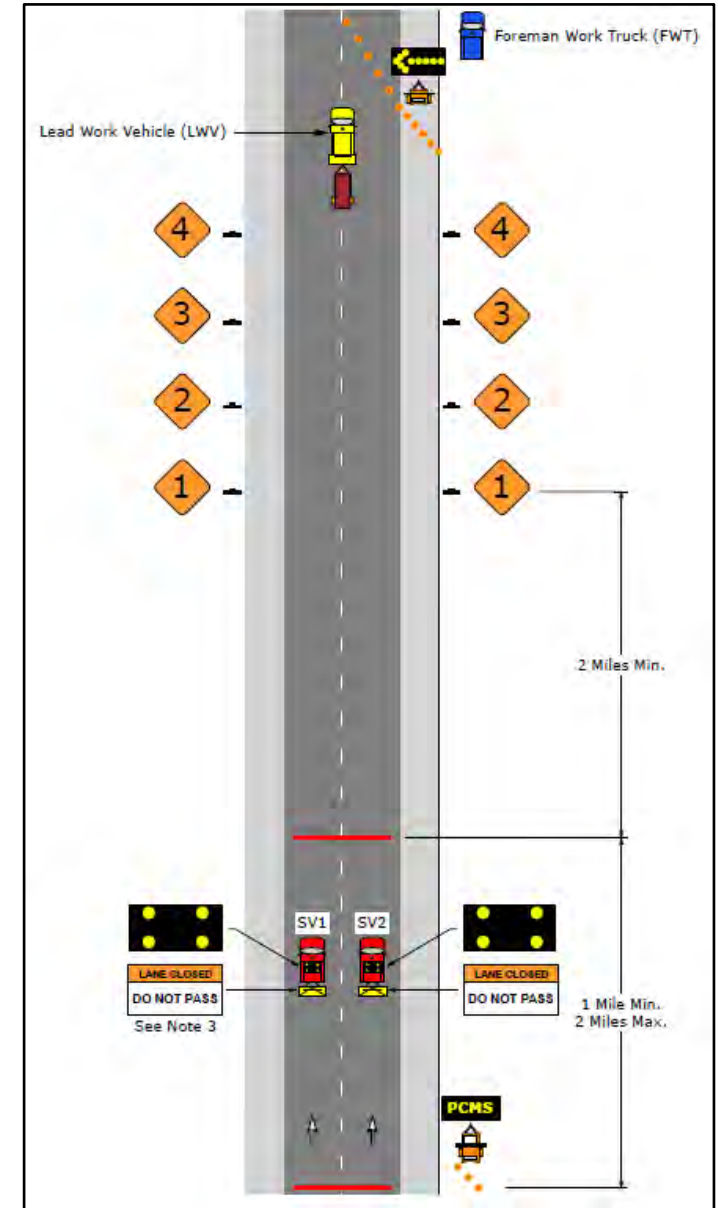
Enhancing Work Zone Safety



Enhancing Work Zone Safety



Enhancing Work Zone Safety



BODY CAMERA PILOT



WORK ZONE SAFETY THROUGH PARTNERSHIPS

Improving Safety in the Transportation and Construction Industry

- Decrease catastrophic events especially fatalities
- Sharing relevant safety information between the public and private sectors.
- Open dialog with contractor organizations and their members.
- Improved safety through training and education.
- Improved safety cultures among private and public entities.
- Consistency of safe work procedures.

Green Light
Initiative

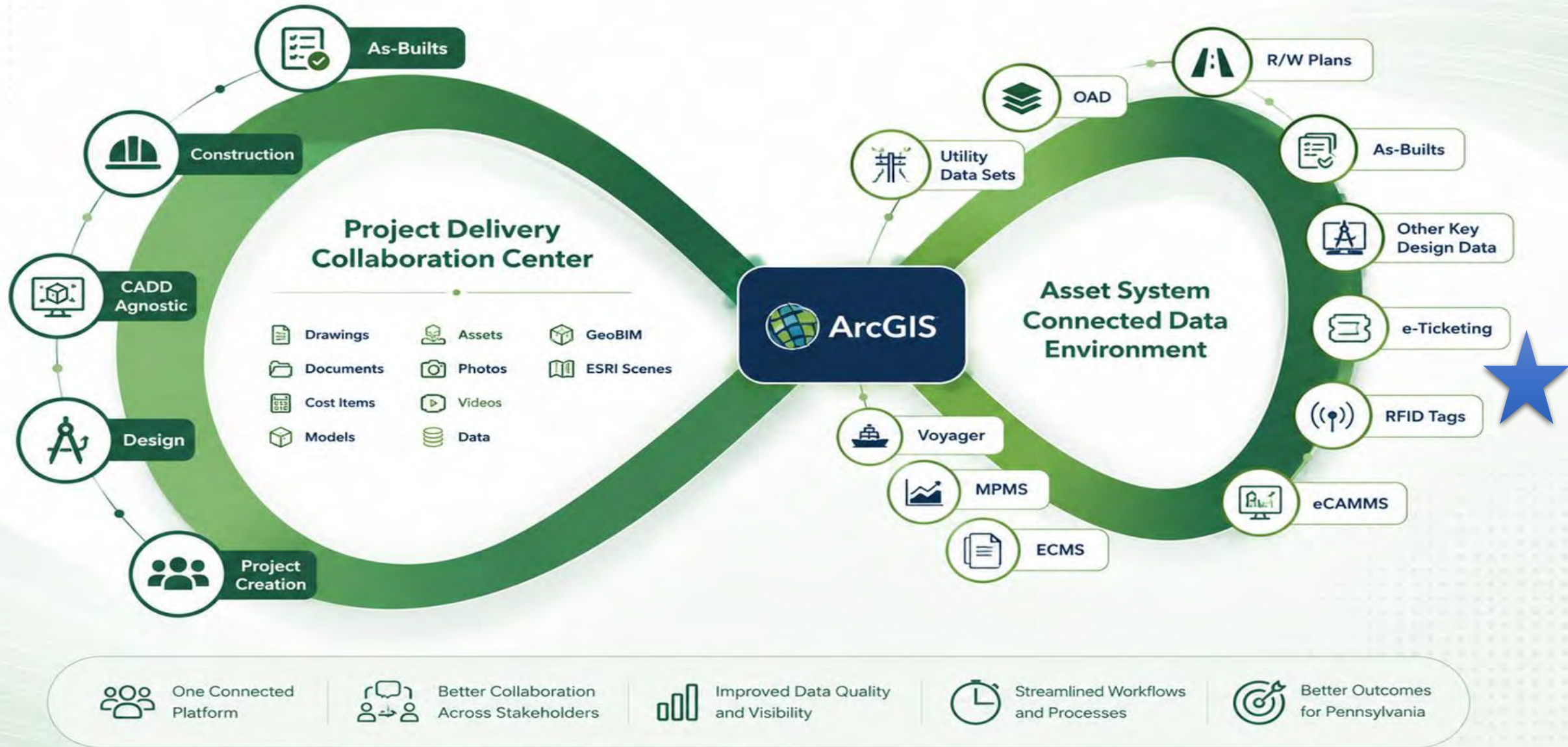
Winter Preparation
Planned Maintenance

Women in the
Transportation and
Construction Industry

Heat Related
Illness

De-escalation
Techniques

e-TICKETING



PennDOT PORTAL

Connect in real-time any loadout platform

Producer Material Load out data is forwarded to PennDOT via Haul Hub.



Managed Connection

Supplier controls what data is shared with PennDOT.
SLA requirements are the responsibility of HaulHub.

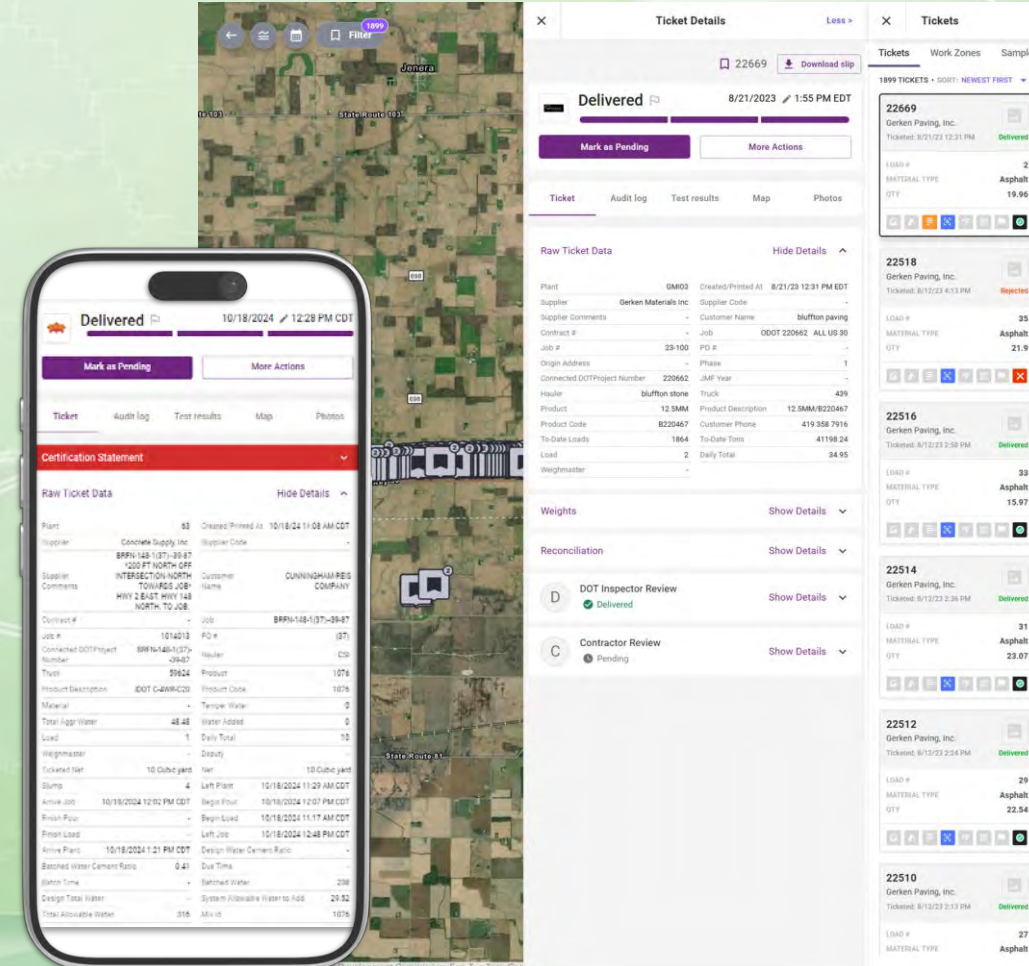
Default path for most suppliers

Direct API Integration

Managed by supplier's internal tech team.
Published documentation available for guidance.

Ticketing Vendor API Connection

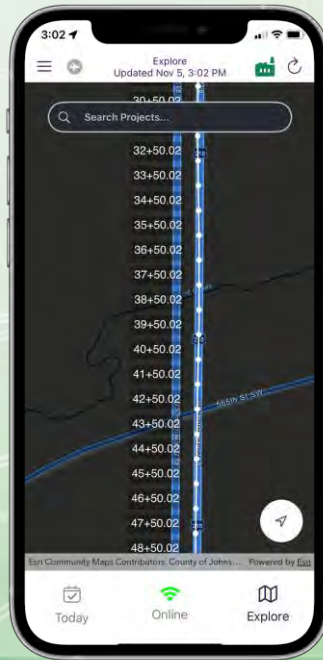
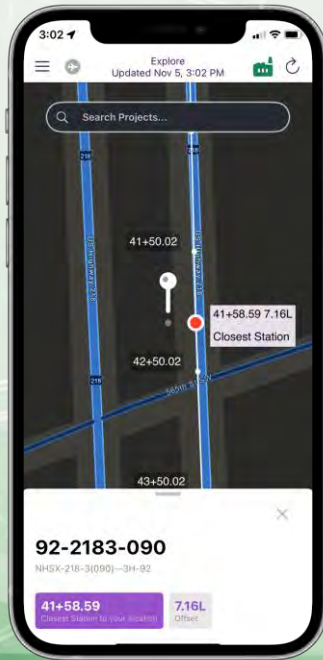
Supplier's e-ticketing vendor will POST data to an API.



e-TICKETING - GIS

Inspectors access stationing directly on mobile:

- Reference station and offset near current location
- Pin-drop for station lookup
- Automated stationing synced with ticket management



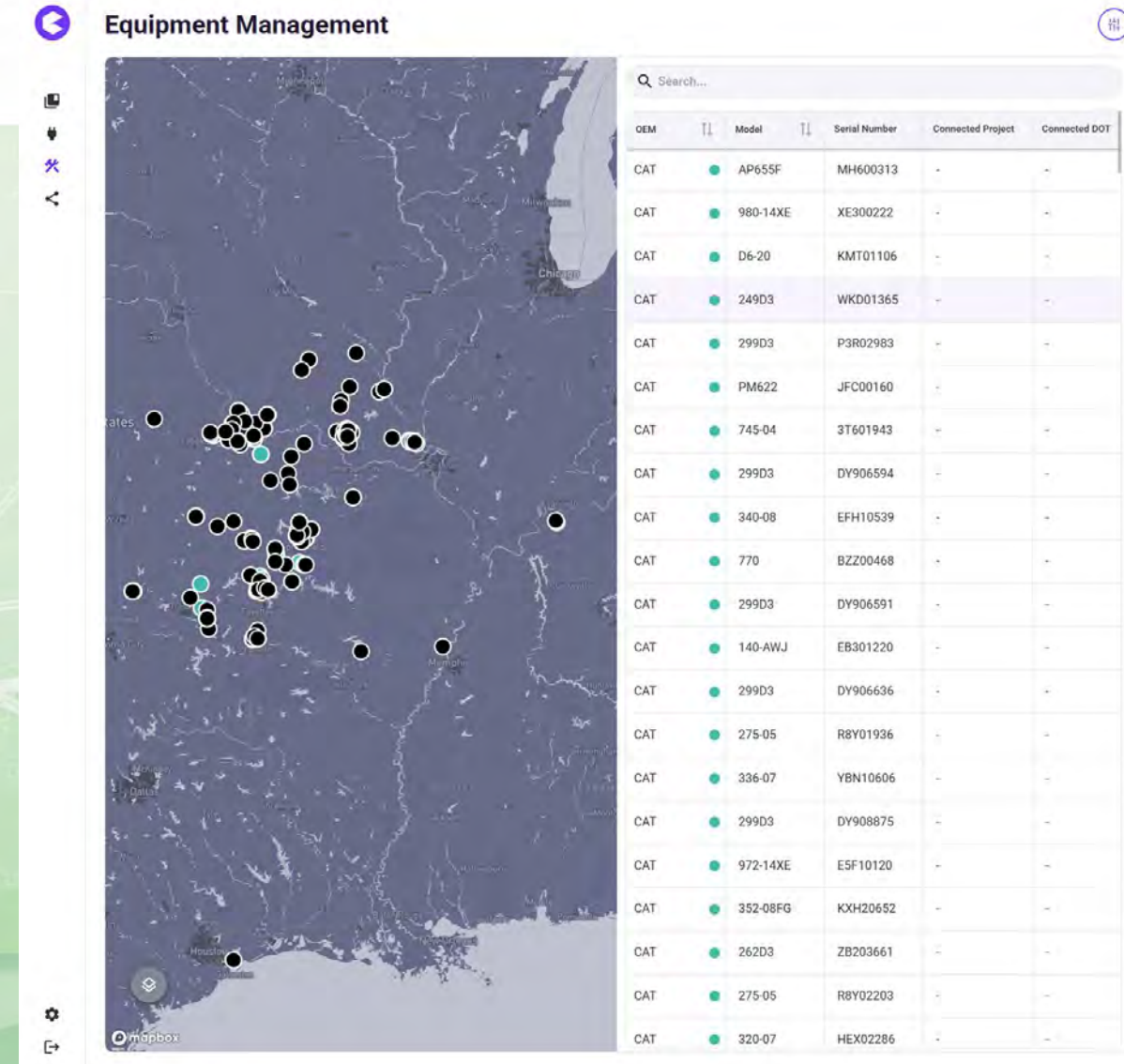
e-TICKETING – CONNECTED EQUIPMENT

Telematics from OEM partners: Caterpillar, John Deere, Gomaco, Samsara, HCSS, and more combined with E-Ticketing and empower work zone safety.

- Live location and active status on project maps
- Detailed equipment history and records
- Integrates with ticket data for inspection accuracy
- Contractor controls what's shared
- Visibility limited to jobsite, active projects only

Privacy built in:

- Location shared only during active projects
- Only with authorized DOT partners
- Visible only near project sites



The screenshot displays the 'Equipment Management' interface. On the left, a map of Pennsylvania shows numerous black circular markers representing equipment locations, with a few highlighted in red. On the right, a table lists equipment details for various Caterpillar (CAT) units. The table includes columns for OEM, Model, Serial Number, Connected Project, and Connected DOT. The data is as follows:

OEM	Model	Serial Number	Connected Project	Connected DOT
CAT	AP655F	MH600313	-	-
CAT	980-14XE	XE300222	-	-
CAT	D6-20	KMT01106	-	-
CAT	249D3	WKD01365	-	-
CAT	299D3	P3R02983	-	-
CAT	PM622	JFC00160	-	-
CAT	745-04	3T601943	-	-
CAT	299D3	DY906594	-	-
CAT	340-08	EFH10539	-	-
CAT	770	BZZ00468	-	-
CAT	299D3	DY906591	-	-
CAT	140-AWJ	EB301220	-	-
CAT	299D3	DY906636	-	-
CAT	275-05	R8Y01936	-	-
CAT	336-07	YBN10606	-	-
CAT	299D3	DY908875	-	-
CAT	972-14XE	ESF10120	-	-
CAT	352-08FG	KXH20652	-	-
CAT	262D3	ZB203661	-	-
CAT	275-05	R8Y02203	-	-
CAT	320-07	HEX02286	-	-

e-TICKETING – WORK ZONE PROTECTION

Crews and Traveling Public Safety Automated:

- Auto-detect active projects from portal activity
- Agency-defined work zones trigger public alerts
- WZDx-compliant feed for 511 and agency systems
- Equipment enhances feeds with machine precision
- Automated creation from design files with PennDOT control

Worker presence builds naturally from ticket and equipment activity.

The screenshot displays the 'Project Settings' interface for project 97-0296-170. The 'Safety Work Zones (12)' tab is active, showing a map of the project area with 12 work zones marked by white squares and play buttons. The map is powered by Esri and includes a sidebar with various map controls. To the right of the map, a list of work zones is displayed, including ML029, RW_SI, RPD, and RPC. Each zone entry shows a 'Details Pending' status, an icon of a worker, and a timestamp of '5 days ago'. The interface also includes a 'Disarmed' toggle switch for each zone.

Project Settings
97-0296-170

Project Info Project Staffing Contract Contract Project Project Stationing **Safety Work Zones (12)**

Safety Work Zones

12 Work Zones

Details Pending

ML029

Updated By: Cedric Wilkinson
Last Updated: 3/28/2026 (5d)

Disarmed

RPD

RPC

Create Project

200

22



3

5

12

11

29

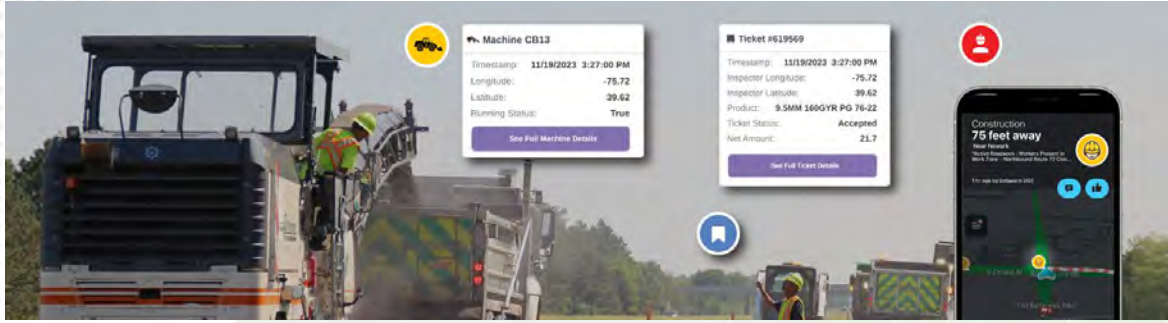
—

৬৬

1

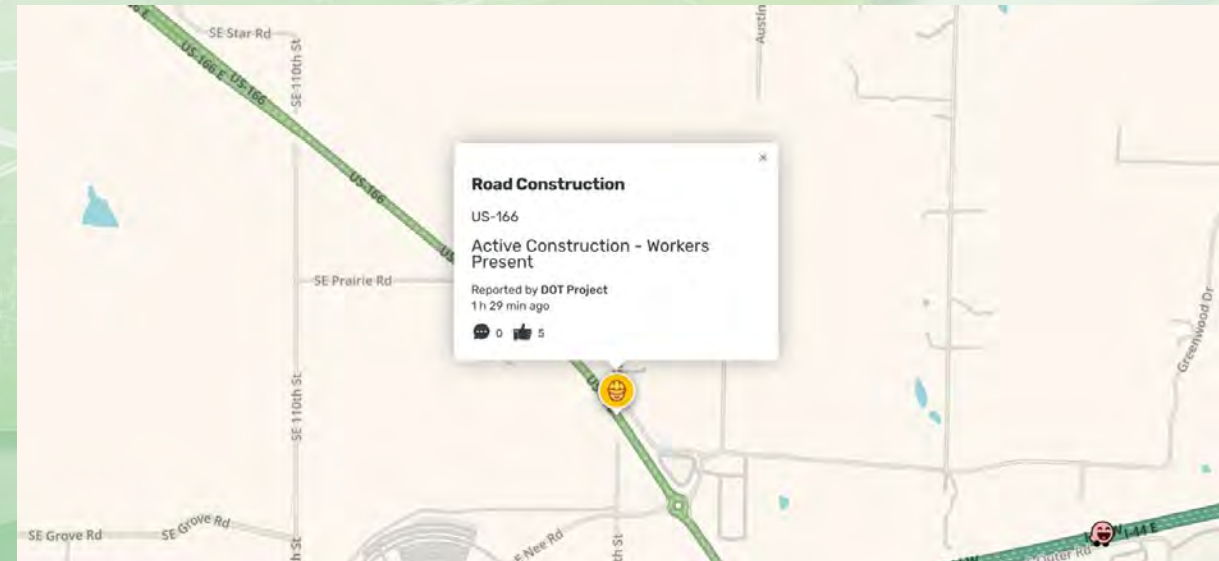
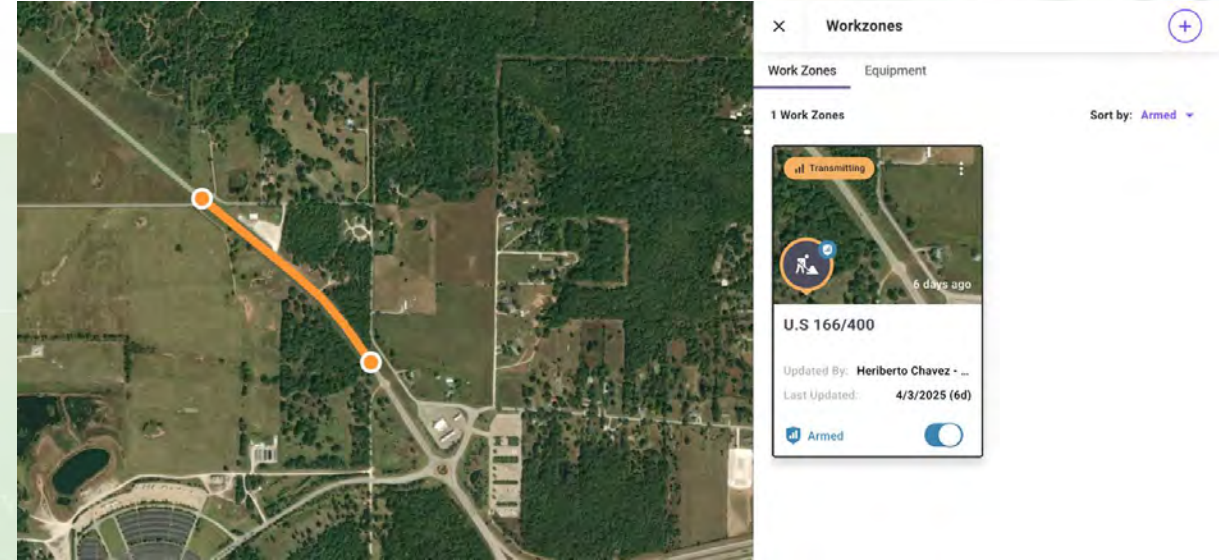
0

e-TICKETING – ALERTS REACH THE PUBLIC



Real-time alerts through Waze, Google, HERE:

- Route planning alert (before departure)
- Upcoming alert (approaching the zone)
- In-work-zone alert (you're in it)





One Connected Platform



Better Collaboration Across Stakeholders



Improved Data Quality and Visibility



Streamlined Workflows and Processes



Better Outcomes for Pennsylvania



PROJECT GOAL

Implement a **solution** to manage the **roadway/bridge design process** with a focus on the **need for collaboration** across **all project stakeholders**.



Unified
Platform



Real-Time
Collaboration



Data-Driven
Decisions



Streamlined
Processes



Better Outcomes
for Pennsylvania



Pennsylvania
Department of Transportation

PDCC mimics a ***flexible backbone***
by merging File Management,
Collaboration, and the Business
Process

Systems &
Applications

Users

Devices

Files/Data



The Challenge Behind PDCC

PDCC Origin Story



MASSIVE SCALE

- 40,000+ miles of roadway
- 25,000+ bridges
- Hundreds of active projects



FRAGMENTED SYSTEMS

- Data spread across multiple platforms
- Manual reporting & coordination
- Limited real-time visibility



LONG PATH TO SOLUTION

- Years to define the right approach
- Extensive RFP development
- Need for enterprise-wide solution



The problem wasn't just scale—
it was **fragmentation**.

Design

Maintenance

Construction

PDCC Implementation Journey



Pennsylvania
Department of Transportation



MEMO

DATE: January 29, 2025
SUBJECT: Project Delivery Collaboration Center Implementation Update
TO: District Executives
FROM: Christine Norris, P.E. *Christine Norris*
Deputy Secretary for Highway Administration

The Department started the initial rollout of the Project Delivery Collaboration Center (PDCC) last January and has continued to enhance the solution over the past year. In coordination with our District representatives, in-person training will be held within each Engineering District Office this coming March/April for a full walkthrough of the different processes available within the solution. The training sessions are broken into two parts. The AM session is for Project Managers (PMs)/Administrators and the PM session is for everyone who may be utilizing the system in addition to the PMs. In addition to in-person training, office hours will be available to assist with any questions your team members may have. The training is currently being set up in the Department's Training Calendar and notices will come out shortly.

As the initial rollout approach has been gradual, we appreciate your team's input and participation this past year. Starting this Spring we will begin to introduce consultant projects into the PDCC. Just in time virtual training will be provided to our consultants in parallel with the Department's in-person training.

The development of the PDCC is an iterative process with additional features becoming available throughout this calendar year and into the future. Training courses will be provided as those new enhancements are made available. In addition to the training courses held for each District, a training library with course recordings and materials will be available within PDCC to assist in the release of the PDCC.

At this time, all Bentley CADD files are to remain within the ProjectWise environment until directed otherwise.

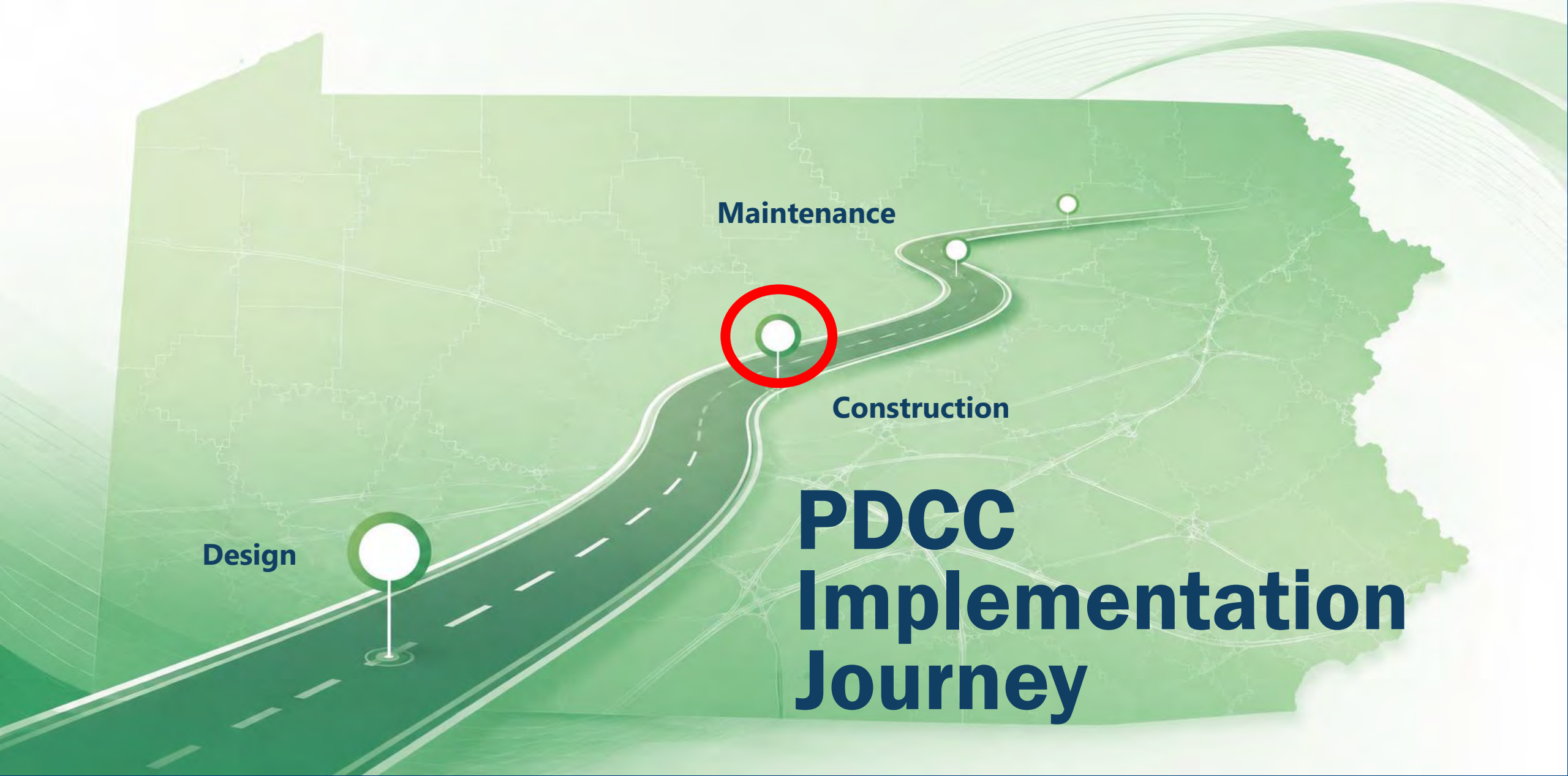
Should you require additional information regarding the rollout of the PDCC, please contact Kelly Barber, P.E., at keluckenbi@pa.gov or Peg Bradley at c-bradley@pa.gov.

Maintenance

Construction

PDCC Implementation Journey





Design

Maintenance

Construction

PDCC Implementation Journey



Pennsylvania
Department of Transportation

AUTODESK FORMA

Products in Use by Construction Teams

PRODUCTS



Build



Insight

TOOLS



Sheets



Forms



Photos



Schedules



Issues



Dashboards



Dashboards and Reporting

Standardization Through Templates

PDCC project templates establish consistency and reduce errors and rework across all projects.



Built with
all 11
Engineering
Districts

FILE STRUCTURE

Standard folders
Consistent organization



PDCC Project Templates



ROLES & ACCESS

Defined roles
and permissions
Controlled access
for the right people



REVIEW WORKFLOWS

Standard review process
Built-in approvals and tracking



Developed
collaboratively
across all
11 PennDOT
Engineering
Districts



REDUCED ERRORS

Fewer mistakes
through consistency



LESS REWORK

Eliminate duplication
and repeat work



FASTER DELIVERY

Streamlined processes
keep projects moving





Faster onboarding & navigation

Team members always know where to find key files, reducing ramp-up time and confusion.



Consistency by default

Enforces best practices across all projects without relying on individual preferences.



Improved collaboration

Shared structure makes it easier to work across teams, review work, and hand off tasks.



Better portfolio visibility

Makes it easier to compare, review, and manage multiple projects.



Less rework & technical debt

Eliminates reinventing structures and prevents disorganized repositories over time.

Files

Folders

Packages

- ▼ Project Files
 - > CONSTRUCTION
 - ▼ DESIGN
 - > Agreement
 - > Bridge
 - > Environmental
 - > General
 - > Geotech
 - > Grade Crossing
 - Legacy
 - > Permits
 - Photos
 - > Planning & Programming
 - > PS&E
 - > Right-of-Way
 - > Roadway
 - > Safety Review
 - > Survey
 - > Traffic
 - > Utilities

| Standard Folder Structure



Forms

Capturing structured project information
with standardization and consistency



Pennsylvania
Department of Transportation

Standardized Forms

Forms are created once and reused across projects through templates and libraries.



TEMPLATES & LIBRARIES

Forms are created, standardized, and stored in libraries.



APPLY TO PROJECTS

The right forms are selected and applied to projects.



USE & COLLECT DATA

Forms are completed to capture consistent, reliable information.

EXAMPLE: PROJECT FORM IN USE

TR-478A Report on Compaction Density by Non-movement In progress

This form has not been submitted. You can view it but can't modify or submit it.

Form Details

Form date
May 8, 2026

ID
#1745

Template name
TR-478A Report on Compaction Density by Non-movement

Location
-

Description
Copied from May 1, 2026

Due date
-

Assigned to
J. Smith

REPORT ON COMPACTION DENSITY NON-MOVEMENT

Fill Out Completely. Original to be retained with project records. Remit copy to District Office.

DATE: 04/24/2026 CONTRACT NO.: 43125

DISTRICT NO.: 2-0 SR/SECTION NO.: 80

TYPE OF CONSTRUCTION: ☒ Embankment/Fill ☐ Subgrade ☐ Subbase ☐ Structure Backfill ☐ Pipe Backfill
☐ Other:

TEST NO.	TIME OF TEST	TYPE OF MATERIAL	LOCATION	MAXIMUM DRY DENSITY (Lbs./Cu. Ft.)	OPTIMUM MOISTURE (%)	DRY DENSITY (Lbs./Cu. Ft.)	MOISTURE (%)	PERCENT COMPACTION
1	2:00 pm	R-20	Sta. 10+00	112.5	6.2	106.3	5.8	94.5
2	2:30 pm	R-40	Sta. 10+50	120.8	6.0	114.7	5.7	95.0
3	2:45 pm	R-45	Sta. 11+00	124.3	5.8	118.9	5.2	95.7



Dashboards



Dashboards Built from Individual Cards

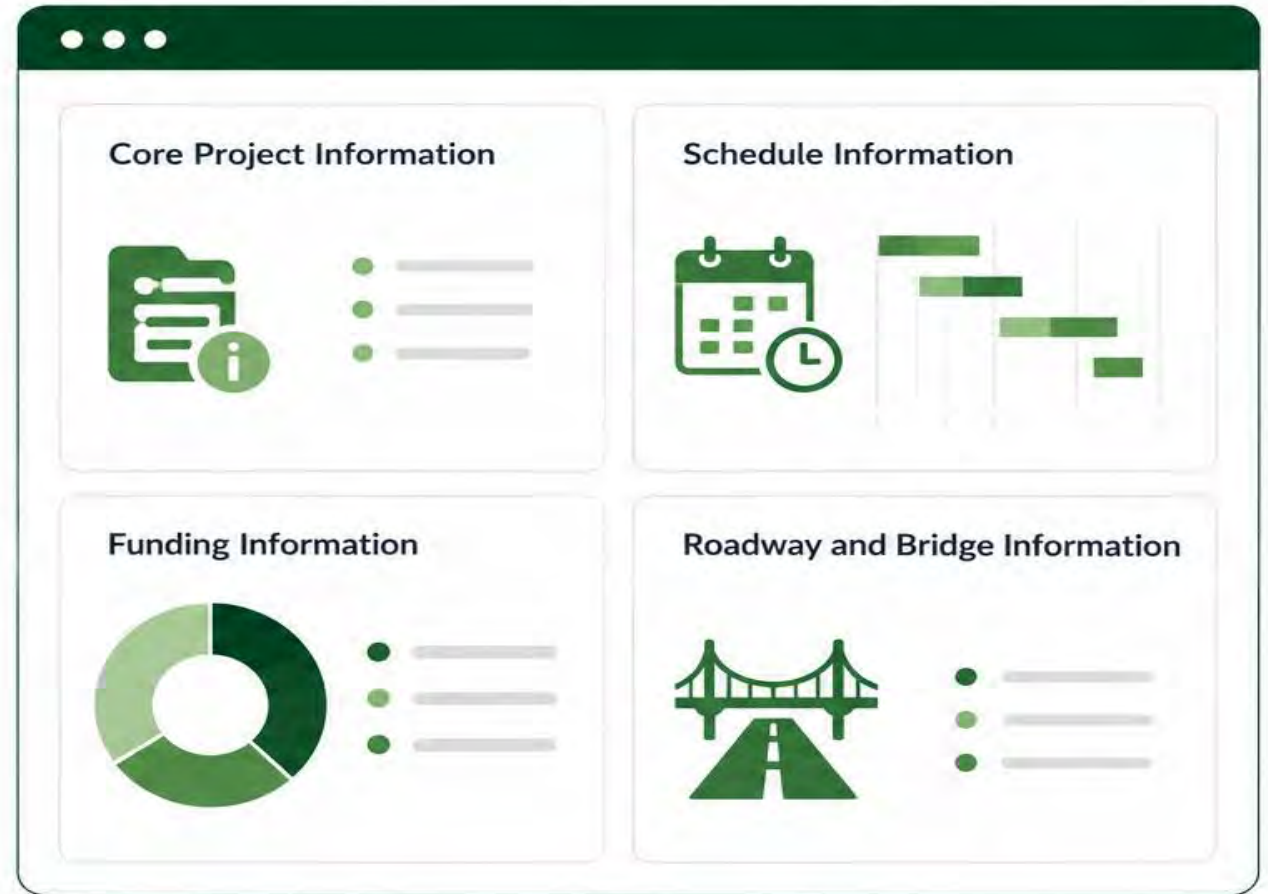
Each card focuses on a key insight. Together, they provide a complete view.

INDIVIDUAL CARDS



Combine individual cards to build a complete dashboard.

DASHBOARD

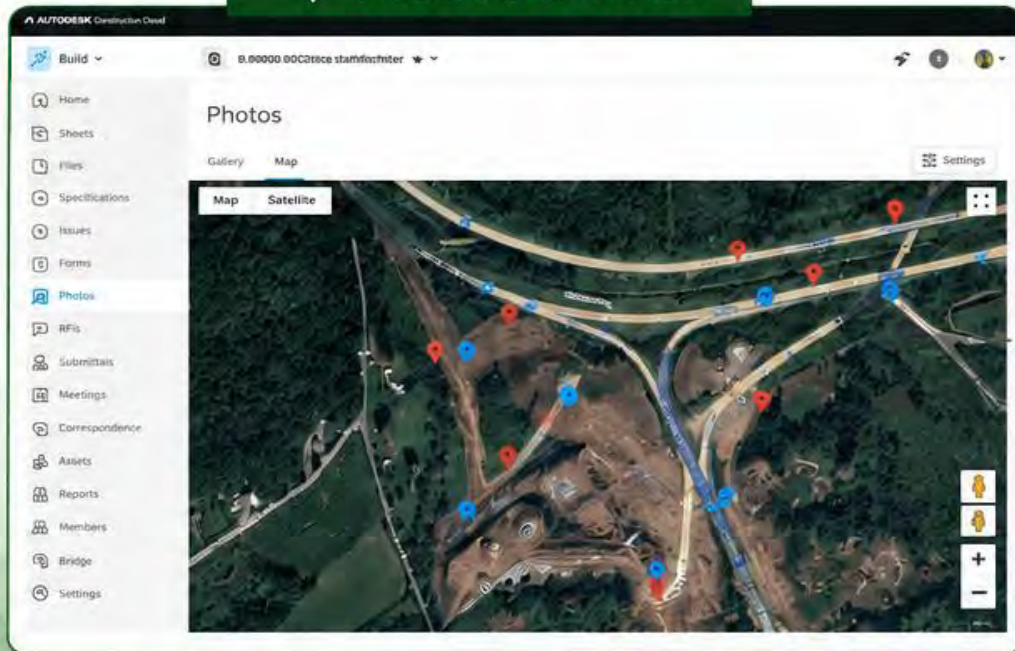


SUPPORTING CONSTRUCTION PROCESSES IN PDCC

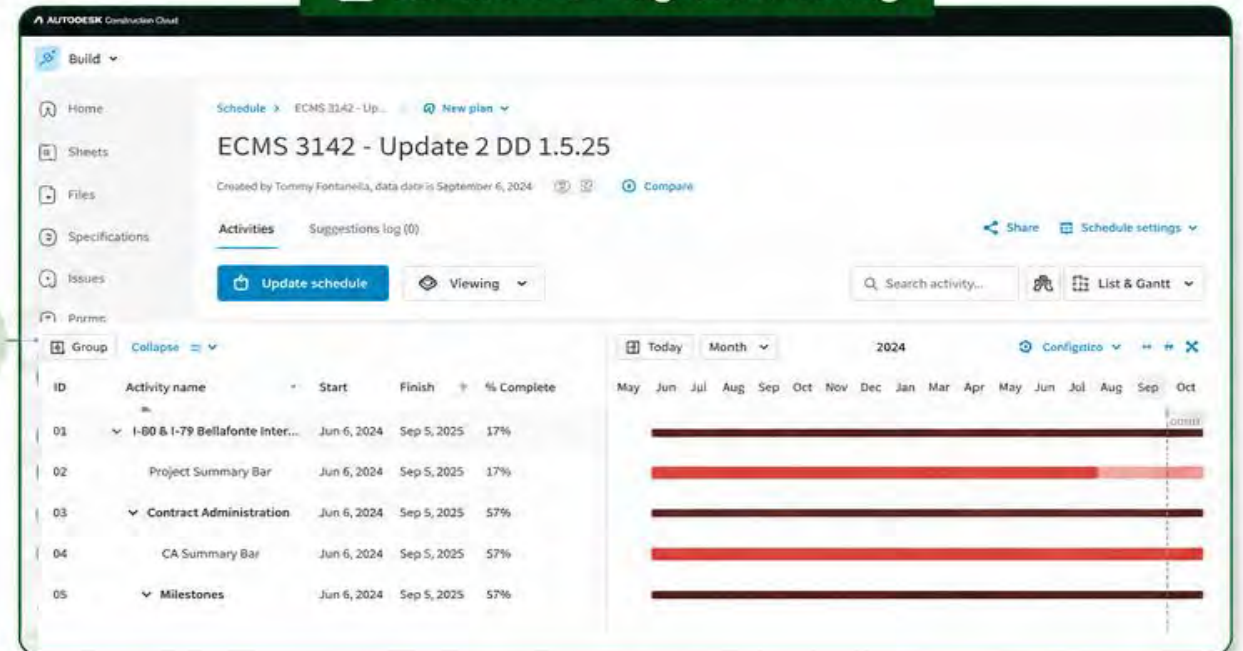


Focus: Connecting construction processes across systems

Field Data & Photos

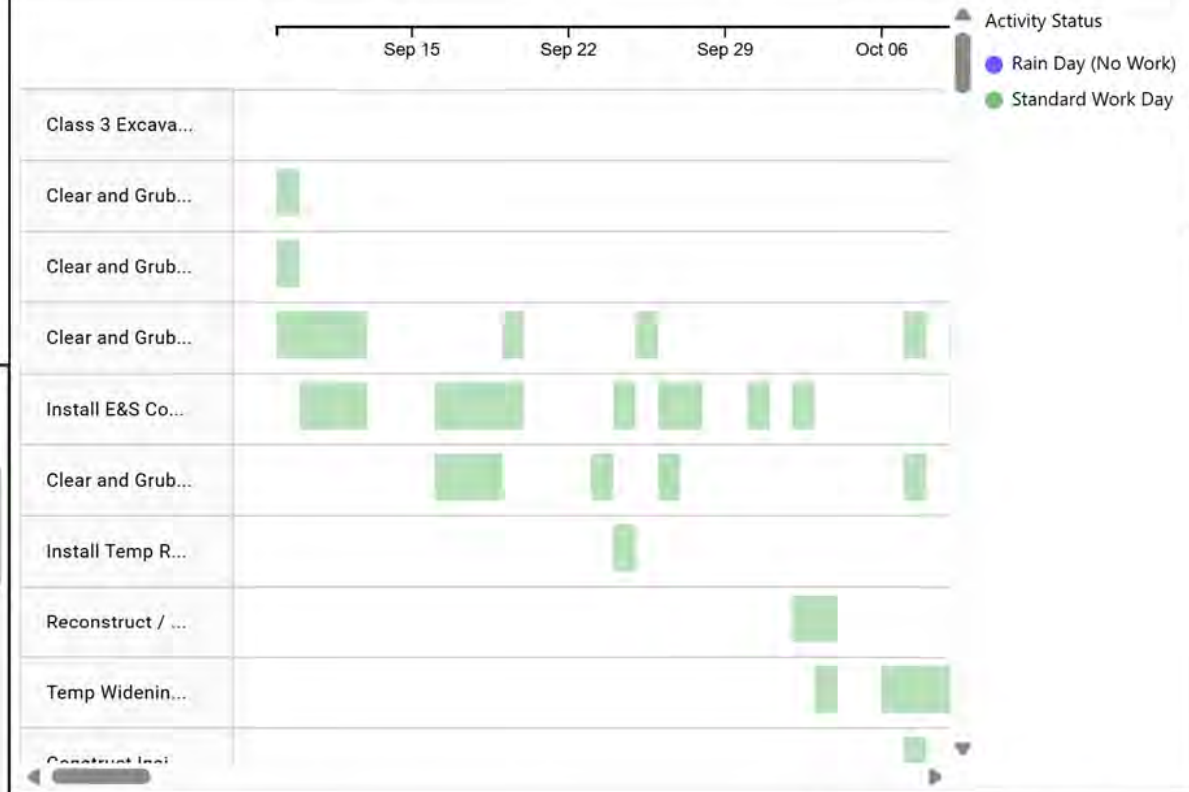
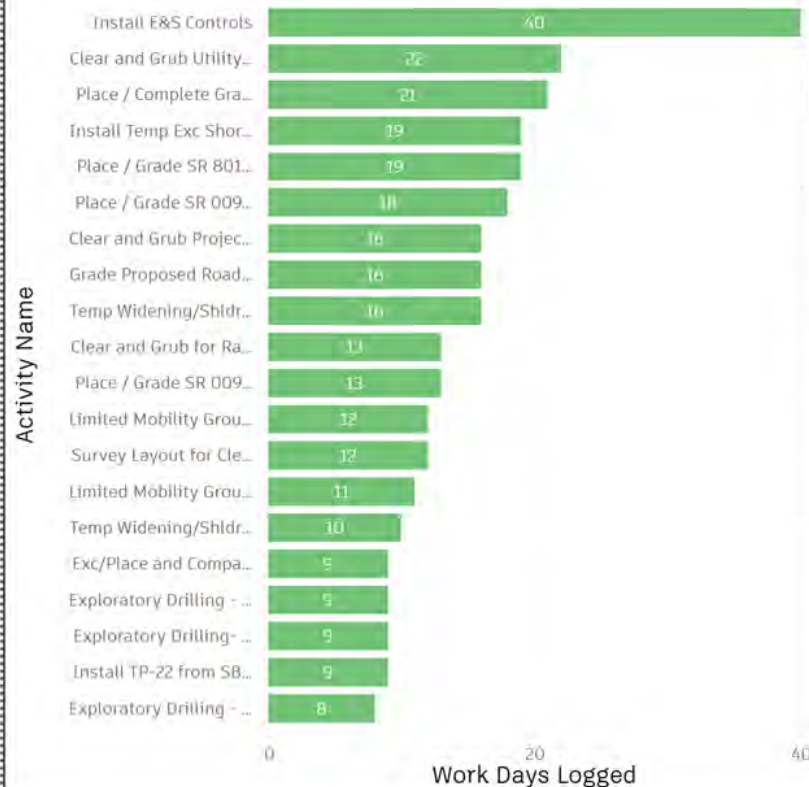


Schedule & Progress Tracking



Number of Issues by Activity

Activity Status ● Rain Day (No Work) ● Standard Work Day



Schedule Activity Name	Scheduled Duration	Days Logged
Begin Deep Undercut/BFill on Relo SR 1018 Jacksonville Road 167+25 to 176+75 (94K Total - Half 47,000 CY / 1200 CY/SH)	40	5
Begin Grade Relo SR 1018 Jacksonville Road 181+00 to 194+00 (94K Total - Half 47,000 CY / 1200 CY/SH)	40	1
Begin Grading SR 1018 Jacksonville Road 166+00 to 176+50	1	2
Class 3 Excavation (APR Material) WB1 Section 1	5	3
Class 3 Excavation WB1 Non-APR Material	37	2
Clear and Grub for Ramp ES 311+50 to 326+00 Bat Restriction	3	3
Clear and Grub for Ramp NW 433+00 to 441+00 Bat Restriction	2	2
Clear and Grub for Ramp WS 636+00 to 671+00 Bat Restriction	3	13
Clear and Grub Project Wide	26	16
Clear and Grub Utility Easement Areas and Relocated Jacksonville Road 162+00 to 195+50 and Relocated Musser Lane	7	22

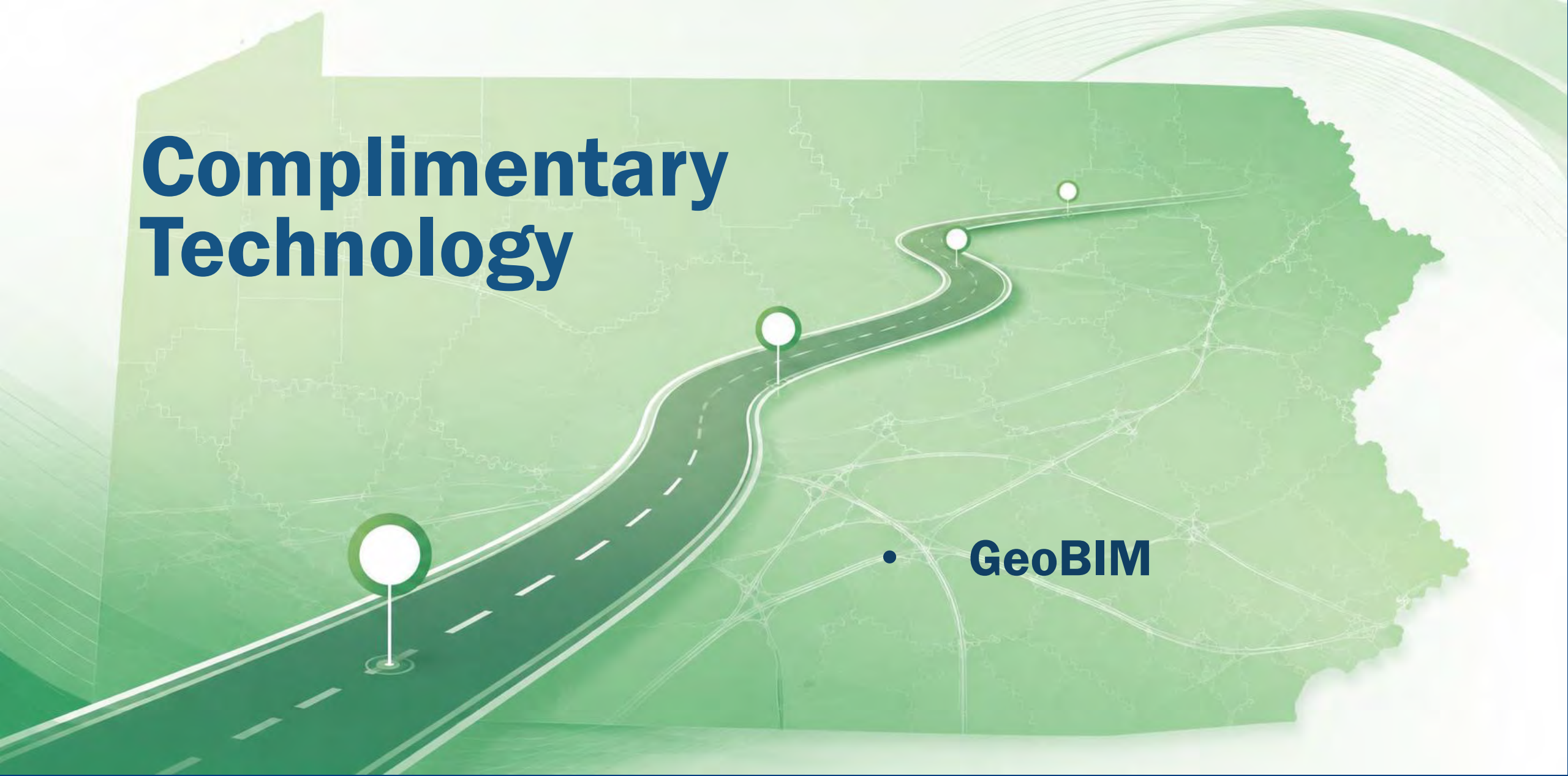
Activity ID

All

Activity Name

All

Complimentary Technology



• **GeoBIM**



Pennsylvania
Department of Transportation



GeoBIM

Powered by Esri

WHAT IT IS

GeoBIM is an Esri capability that brings together GIS and 3D models in an interactive environment.



Combines geographic information and BIM data



Visualizes infrastructure in its real-world context



Integrates data from GIS, models, sensors, and more



WHY IT'S USEFUL AS A COMPLIMENT TO PDCC



Adds Spatial Context

Brings GIS and real-world conditions into the same environment as project data and models.



Improves Collaboration

Enables stakeholders across design, construction, and operations to view, understand, and act on the same information.



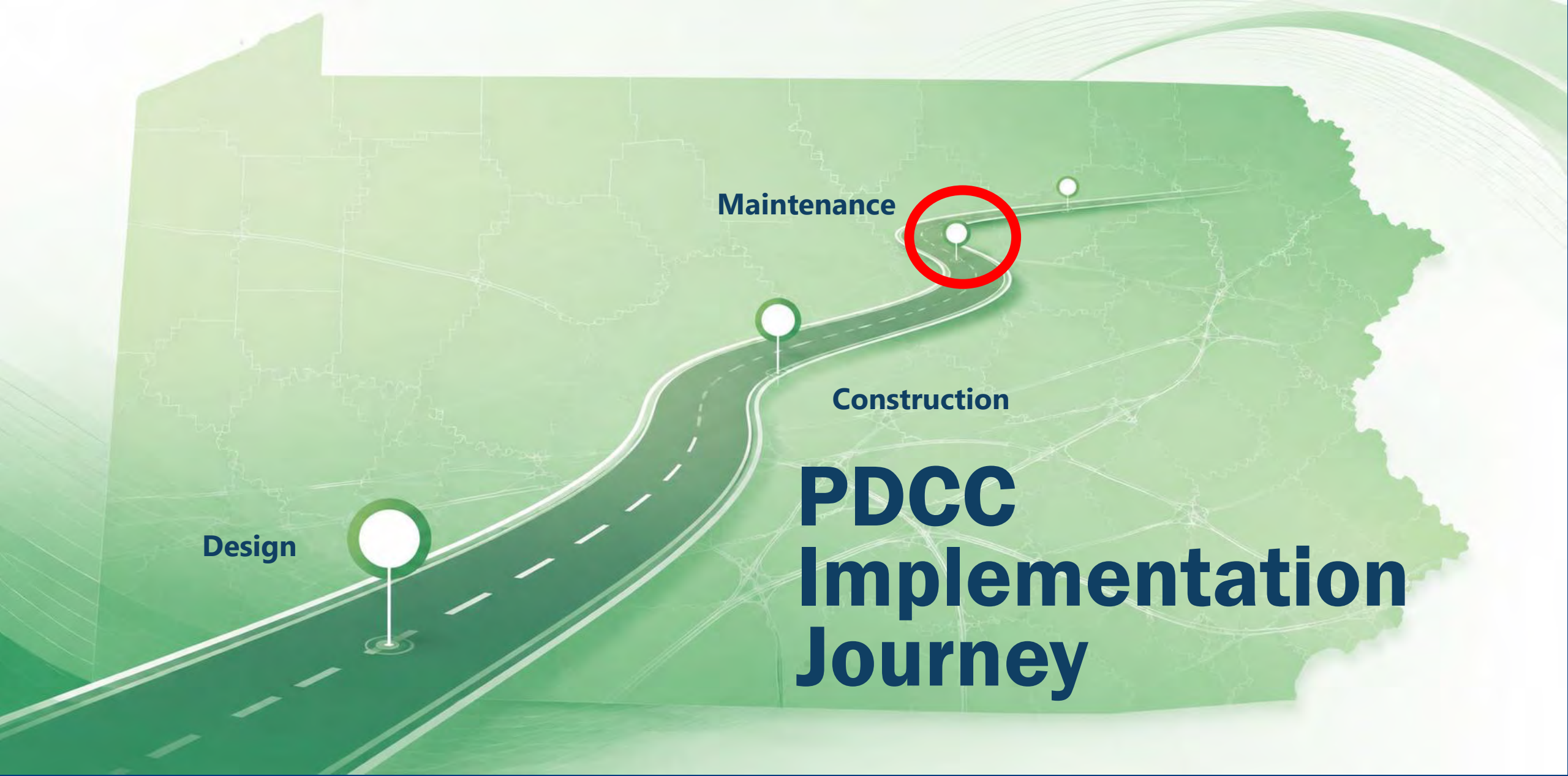
Better Decisions

Combines models, GIS layers, and real-time data to support safer, smarter, more informed decisions.



Extends the Lifecycle

Supports design, construction, operations, and maintenance with a consistent, location-aware view.



Design

Maintenance

Construction

PDCC Implementation Journey



Pennsylvania
Department of Transportation



EXPLORING INNOVATIONS AND OPPORTUNITIES



Pennsylvania
Department of Transportation

MOVING FORWARD INTO 2026

We look forward to working with PAPA and its members in 2026 and beyond!



Pennsylvania
Department of Transportation



FOLLOW PENNDOT



www.pa.gov/penndot



www.pa.gov/dmv



PennsylvaniaDepartmentofTransportation



PennDOTNews



PennsylvaniaDOT



PennDOTSec



/company/PennDOT



PennDOTSec



PennsylvaniaDOT



Pennsylvania
Department of Transportation