

2023 STATE TRANSPORTATION COMMISSION MEETING



PENNDOT ENGINEERING DISTRICT 10-0

SEPTEMBER 13, 2023

BRIAN N. ALLEN, P.E., DISTRICT EXECUTIVE
ALICE M. HAMMOND, P.E., ASSISTANT DISTRICT EXECUTIVE – DESIGN

OVERVIEW AND SUMMARY



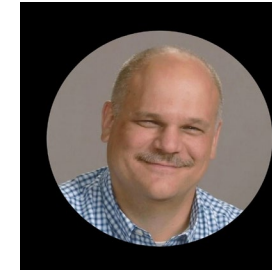
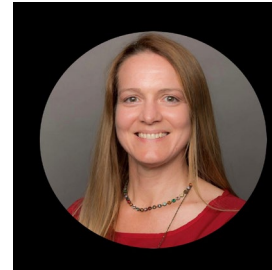
Brian N. Allen, PE
District Executive



Alice M.
Hammond, PE
ADE-D

Paul F.
Koza, PE
ADE-C

Matthew J.
Burkett
ADE-M

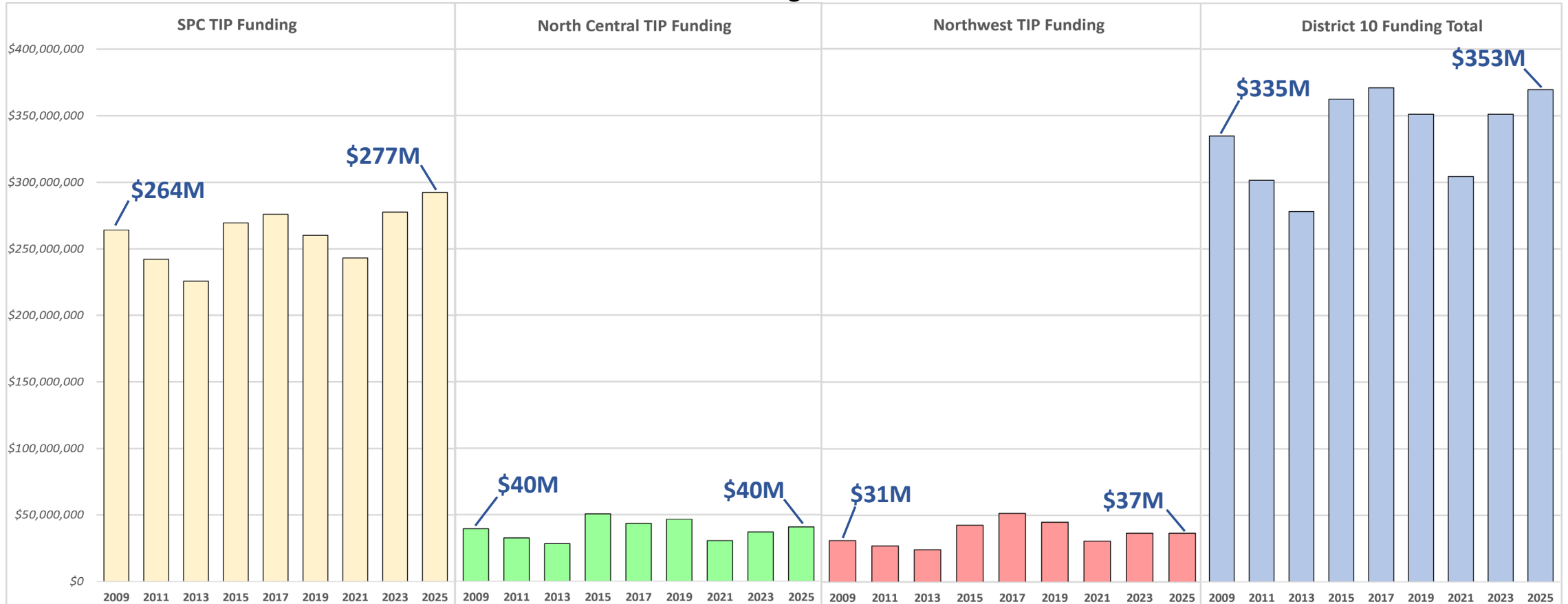


Armstrong	Butler	Clarion	Indiana	Jefferson
Aaron Raible	Mike Mattis	Josh Clinger	John Serian	Aaron Emhoff, PE
1,413 Lane Miles	1,582 Lane Miles	1,031 Lane Miles	1,778 Lane Miles	1,196 Lane Miles
373 Bridges	356 Bridges	208 Bridges	429 Bridges	275 Bridges
Southwest Planning Commission	Southwest Planning Commission	Northwest Planning Commission	Southwest Planning Commission	Northcentral Planning Commission



BUDGET

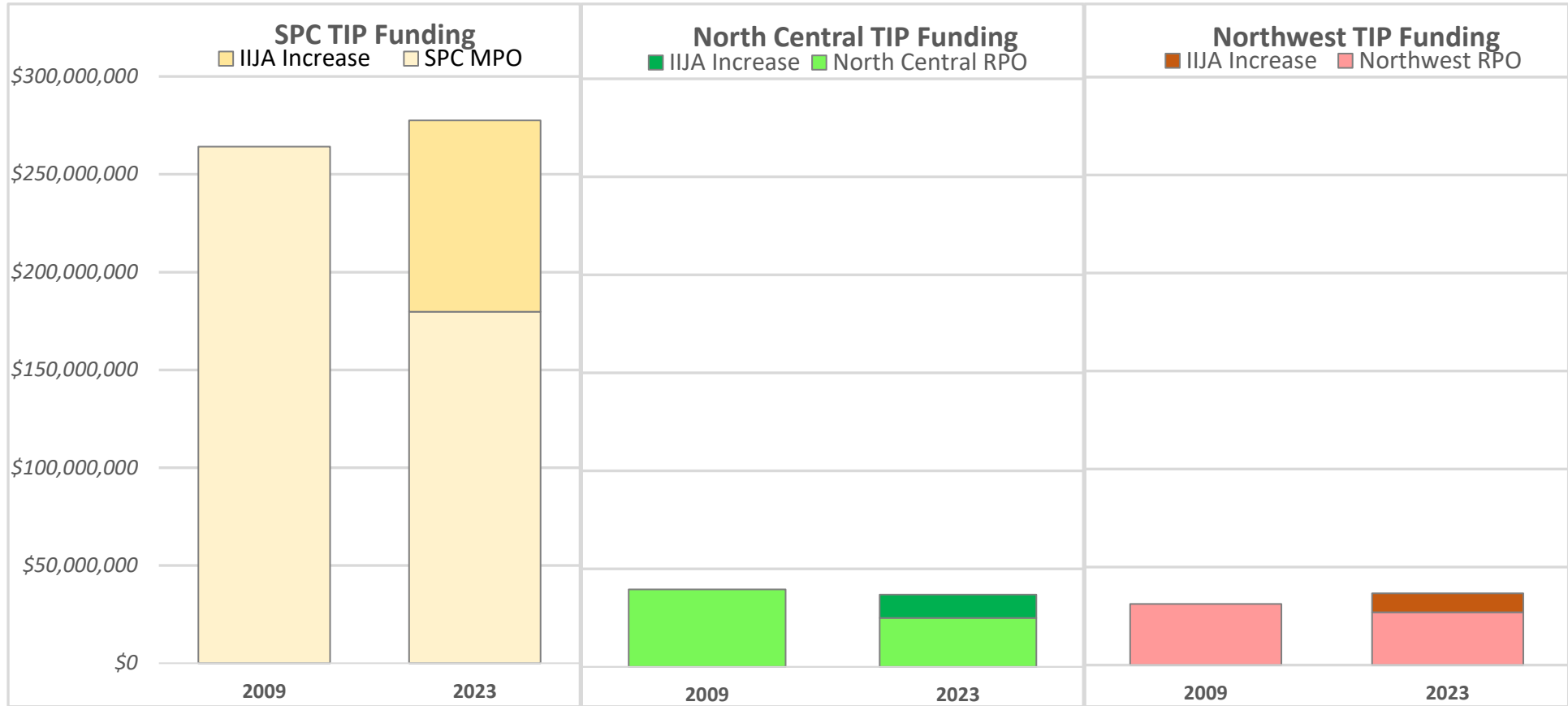
District 10's TIP Funding Allocation Over Time



TIP Funding Cycle	SPC TIP Funds	North Central TIP Funds	Northwest TIP Funds	District Total TIP Funds
2009	\$264,116,000	\$39,510,000	\$31,088,000	\$334,714,000
2011	\$242,108,000	\$32,457,000	\$26,978,000	\$301,543,000
2013	\$225,718,000	\$28,176,000	\$24,131,000	\$278,025,000
2015	\$269,461,000	\$50,496,000	\$42,624,000	\$362,581,000
2017	\$276,000,000	\$43,458,000	\$51,484,000	\$370,942,000
2019	\$260,054,000	\$46,456,000	\$44,767,000	\$351,277,000
2021	\$243,197,000	\$30,573,000	\$30,615,000	\$304,385,000
2023	\$277,606,000	\$36,910,000	\$36,601,000	\$351,117,000
2025	\$292,282,000	\$40,825,000	\$36,569,000	\$369,676,000



TRANSPORTATION IMPROVEMENT PROGRAM

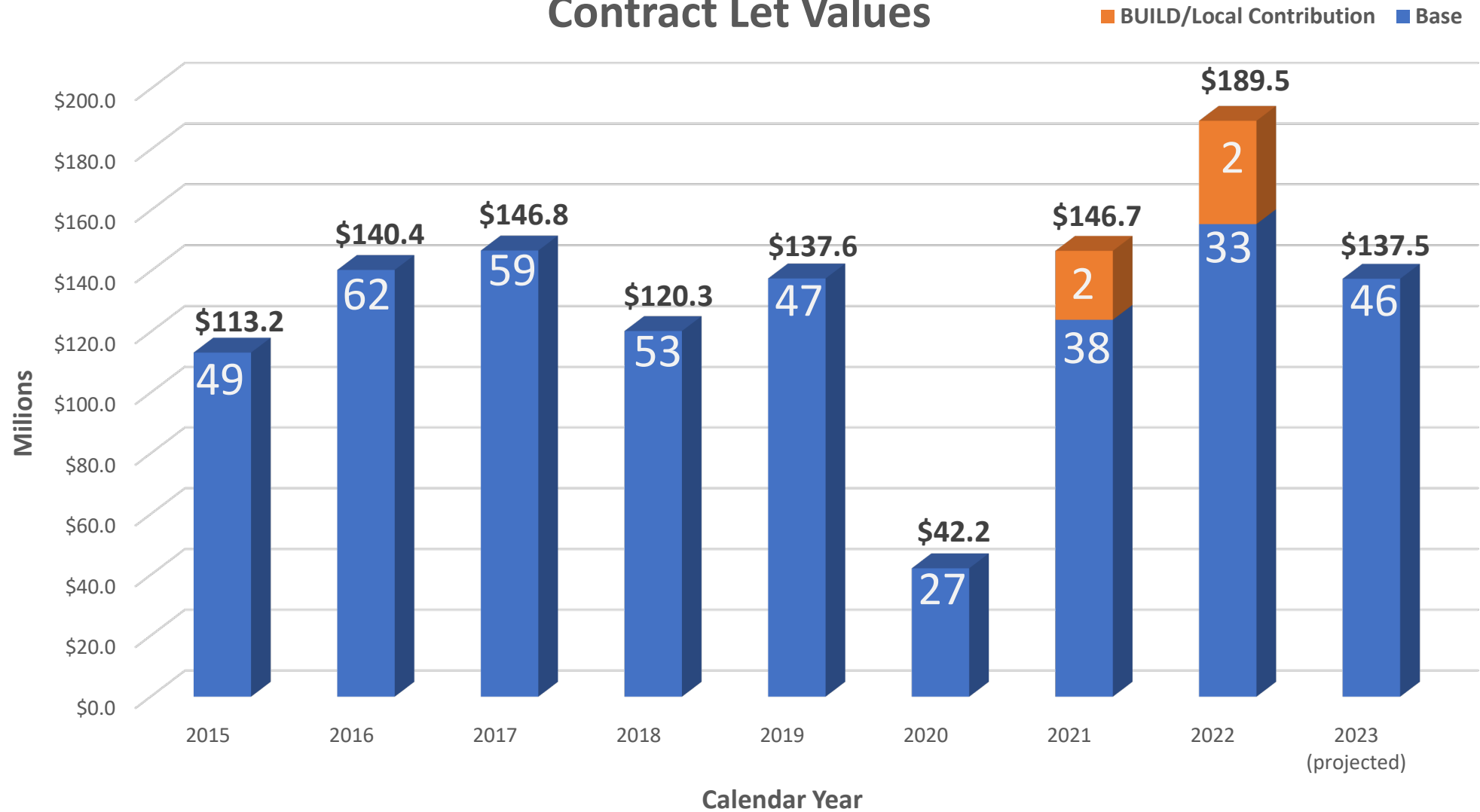


TIP Cycle	Southwest Planning Commission (MPO) TIP Funds	North Central (RPO) TIP Funds	Northwest (RPO) TIP Funds
2009	\$264,116,000	\$39,510,000	\$31,088,000
2011	\$242,055,785	\$32,456,786	\$26,978,118
2013	\$181,468,580	\$28,176,003	\$24,131,367
2015	\$269,461,093	\$50,495,525	\$42,623,356
2017	\$265,897,274	\$47,481,952	\$40,466,226
2019	\$243,196,048	\$47,023,441	\$33,363,223
2021	\$213,780,298	\$32,056,886	\$25,670,753
2023	\$277,605,747	\$36,909,600	\$36,601,805



2015-2023 LET TOTALS

Contract Let Values

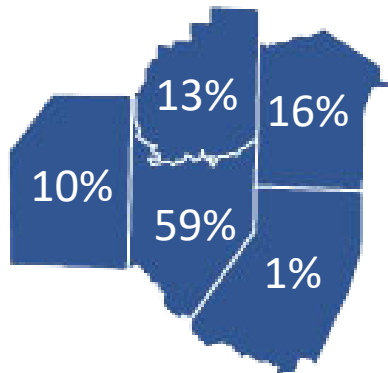


ASSET MANAGEMENT - PAVEMENT

Pavement Goals	Year	Excellent/Good		Poor		Preservation Strategy
		% Goal	% Actual	% Goal	% Actual	
Interstate Pavement BPN1	2019	>81%	97%	<1.5%	0%	<ul style="list-style-type: none"> • Patching • Mastic • Crack Seal
	2020	>81%	94%	<1.5%	0%	
	2021	>79%	93%	<1.5%	0%	
	2022	>79%	92%	<1.25%	0%	
	2024	>79%	91%	<1%	0%	
Non-Interstate NHS Pavement BPN 2	2019	>45.6%	87%	<1.3%	2%	<ul style="list-style-type: none"> • Mill and Fill Patching • Edge Patching • Hit and Miss Paving • Seal Coat
	2020	>45.6%	89%	<1.3%	2%	
	2021	>45.6%	89%	<1.3%	2%	
	2022	>48%	89%	<3%	2%	
	2024	>43%	89%	<2%	2%	
Non-NHS > 2000 ADT Pavement BPN 3	2019	48%	83%	4.7%	7%	<ul style="list-style-type: none"> • Mill and Fill Patching • Edge Patching • Hit and Miss Paving • Seal Coat
	2020	48%	84%	4.7%	6%	
	2021	43%	84%	4.7%	6%	
Non-NHS <2000 ADT Pavement BPN 4	2019	NA	23%	51.6%	62%	<ul style="list-style-type: none"> • Mill and Fill Patching • Edge Patching • Hit and Miss Paving • Seal Coat
	2020	NA	23%	51.6%	61%	
	2021	NA	23%	51.6%	60%	



Armstrong County BPN 4



\$ Need TO ACHIEVE BPN 4 GOALS	Actual		% Goal		% Goal	
	Miles	% Poor	Miles	% Poor	Miles	% Poor
BPN 4 2021 Poor IRI	1,261	60	1122	53.6	1081	51.6
\$ Need to Achieve <u>Now</u>	\$0		\$36.1 million		\$47 million	
\$ Need <u>Each Year</u> to Achieve on a 5-year cycle	\$0		\$ 7.2 million		\$9.4 million	



ASSET MANAGEMENT - PAVEMENT



ASSET MANAGEMENT - BRIDGE

BRIDGE GOALS	Year	Good		Poor	
		% Goal	% Actual/Est	% Goal	% Actual/Est
NHS Bridges BPN1&2	2019	19.00%	18.60%	5.50%	5.40%
	2021	25.00%	19.40%	6.80%	4.34%
	2023	25.00%	19.64%	7.50%	4.30%
	2025	25.00%	26.00% *	6.50%	2.00% *
Non-NHS Bridges BPN3&4	2019	32.30%	32.30%	10.20%	10.20%
	2021	34.00%	32.60%	9.50%	9.40%
	2023	33.00%	30.75%	10.00%	8.67%
	2025	32.00%	30.00% *	10.50%	16.00% *
Local Bridges	Current	NA	33.00%	NA	11.00%

* indicates BAMS estimates

BPN 1&2

- 2023 to date - 19.64% Good, 4.3% Poor by deck area
- 25% of deck area is planned for preservation/rehab
- Large projects programmed on I-80:
 - North Fork & Canoe Creek Bridges
 - Brookville EB & WB Reconstruction (14 structures)
- Current TIP cycle will enable District to achieve goals

BPN 3&4

- 2023 to date – 30.75% Good, 8.67% Poor by deck area
- 13.8% of deck area under design for replacement, preservation or rehab over TIP
- Anticipated to lose pace with conditions by 2025



SR 422 Graff Bridge

Local Bridges

- 2023 - 33% Good, 11% Poor by deck area
- 4 replacement projects planned
- Locals performing rehabs and replacements



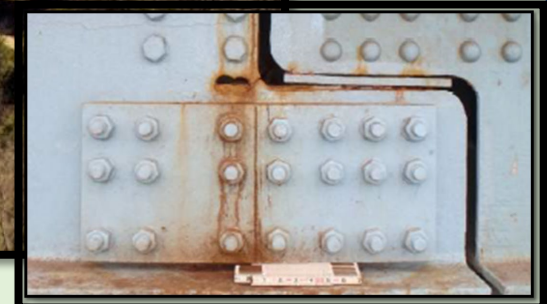
Geibel Road (Local) Bridge



LONG-TERM PLANNING CONSIDERATIONS - BRIDGE



I-80 Clarion River Bridge



I-79 Harmony NB & SB



On Deck Bridges

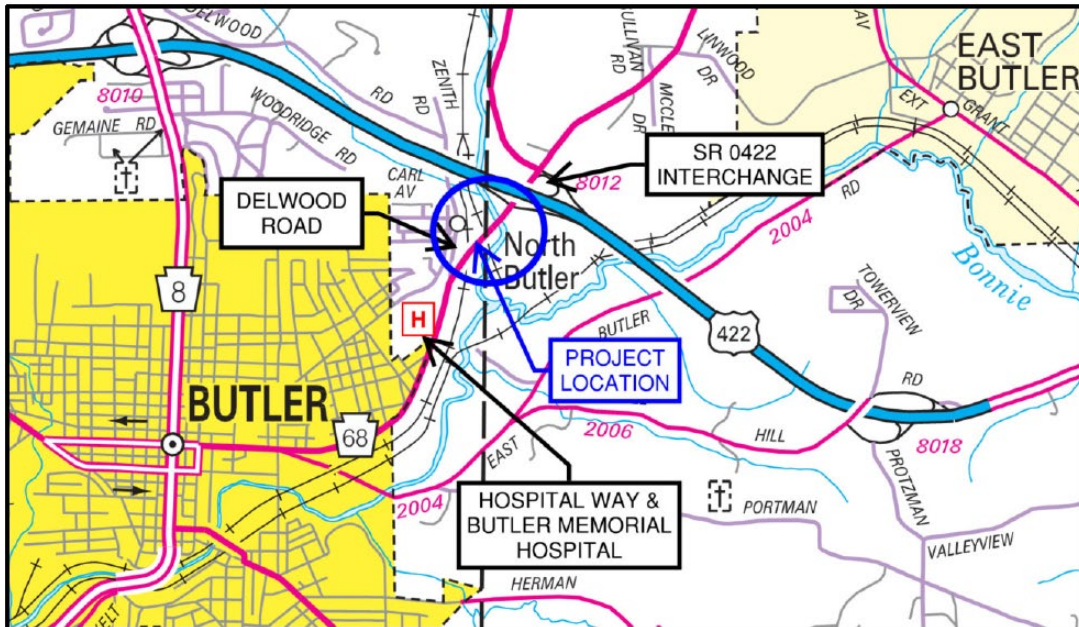
- 571 bridges (35% of inventory) have at least one element that could become poor with next inspection
- 132 bridges are on BPN 1&2



BRIDGE PLANNING - KARNIS CROSSING

SR 68 Karns Crossing Bridge Replacement Project

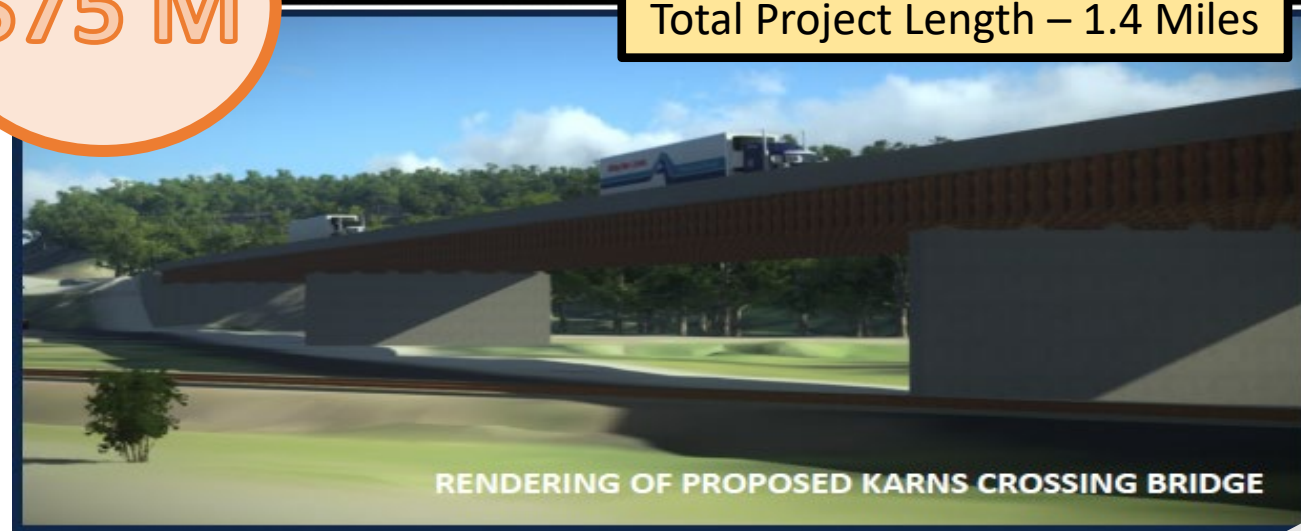
- 12 spans – 868 feet total length
 - Over B&LE and B&P railroads
- Twin Cell Concrete Arch Culvert
- Over Connoquenessing Creek
- Design year ADT 12,900
- Link between U.S. 422 and Butler City
- \$74.5M construction estimate
 - **Inflation** – 2020 Estimate was \$52M
- \$37.5M on TIP



EXISTING KARNIS CROSSING BRIDGE

\$75 M

Total Project Length – 1.4 Miles



RENDERING OF PROPOSED KARNIS CROSSING BRIDGE

Underfunded Critical Infrastructure



BRIDGE PLANNING - KARNS CROSSING

- Pursuit of discretionary funds
 - \$6M in discretionary federal Community Project Funding already committed to project
 - Federal Multimodal Project Discretionary Grant – Rural Category
 - PennDOT Program Center submitted application in August 2023 seeking \$26M in grant funds

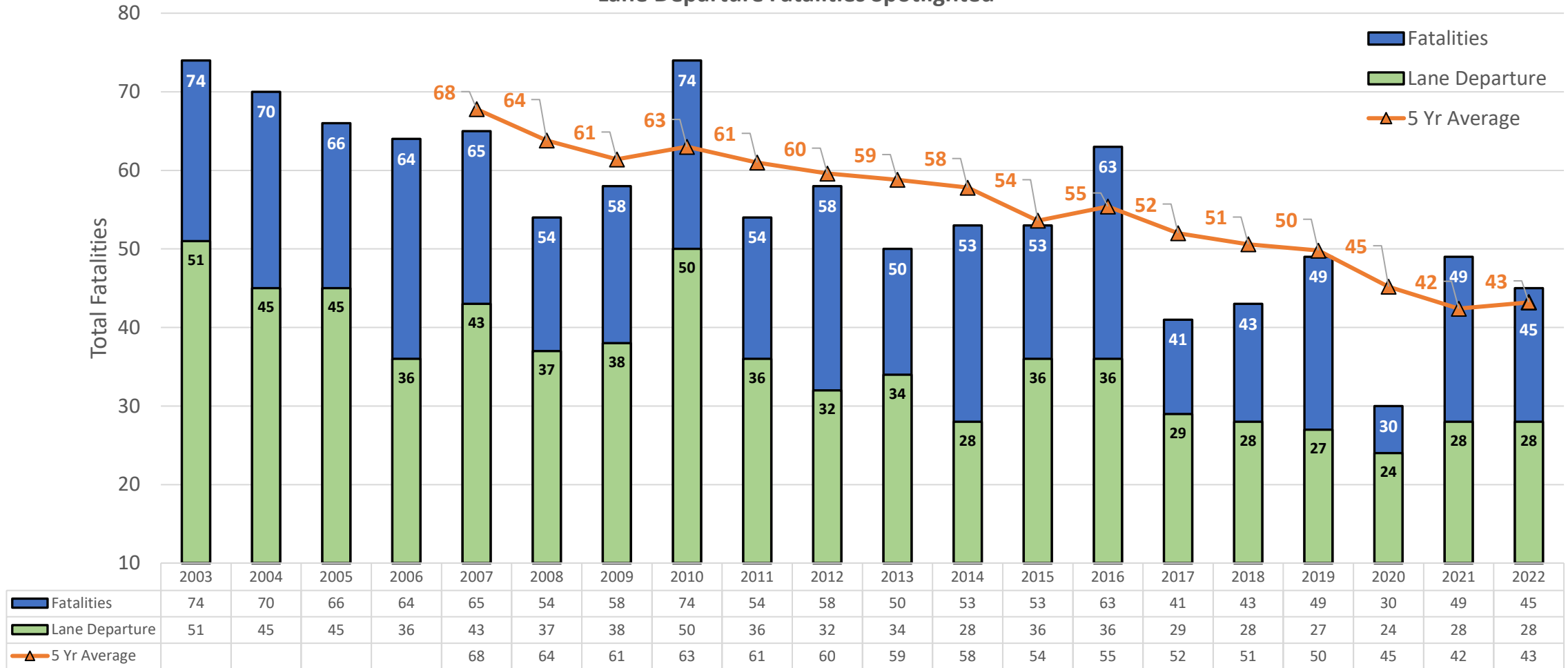


SAFETY

District 10 Fatality Trend

(Armstrong, Butler, Clarion, Indiana and Jefferson Counties)

Lane Departure Fatalities Spotlighted



SAFETY

Targeted
High Friction Surface Treatment
locations shown in red



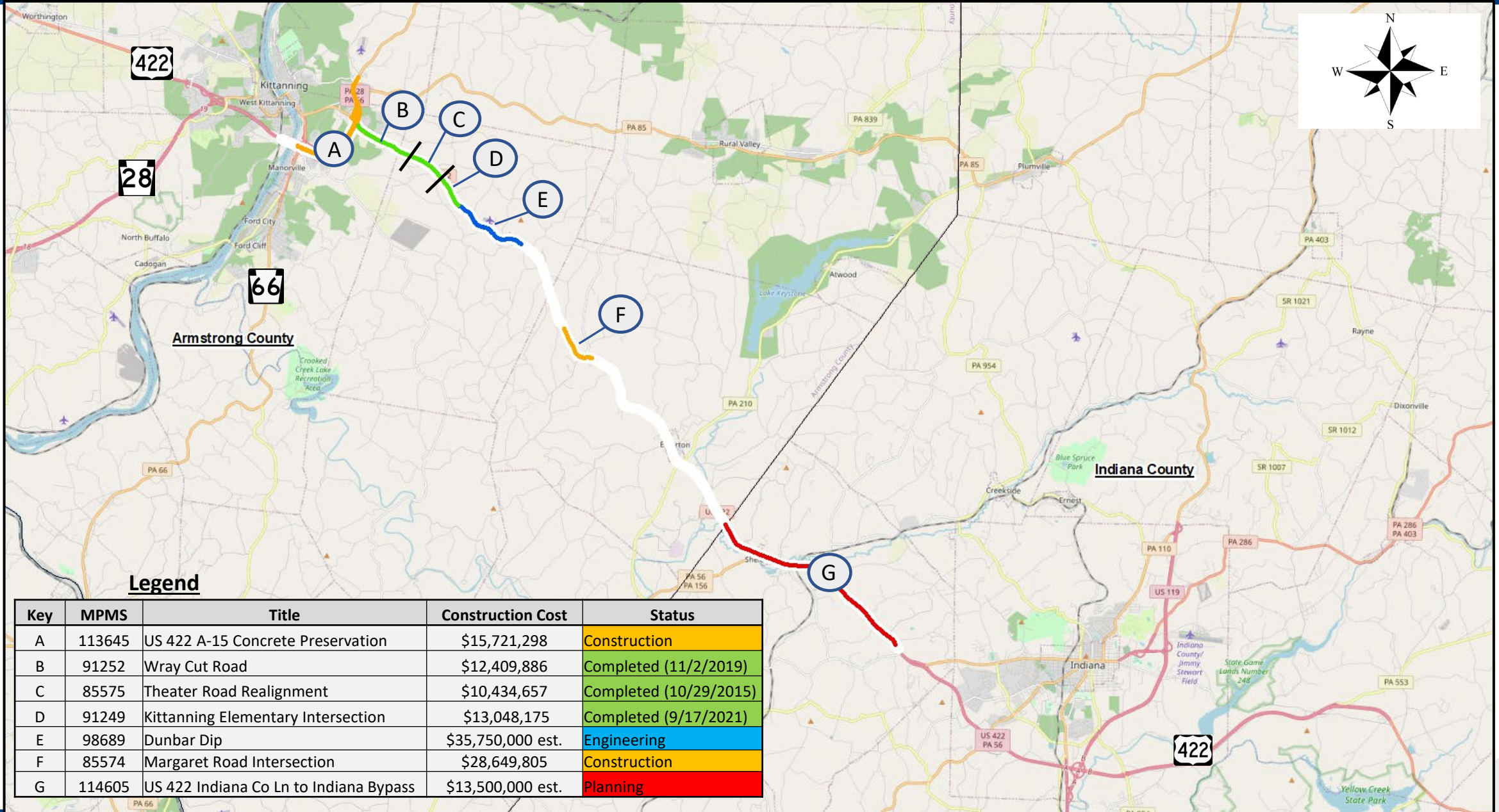
FINISHED PRODUCT



**CORRIDOR OVERVIEWS
AND
2023 CONSTRUCTION
PROJECT HIGHLIGHTS**



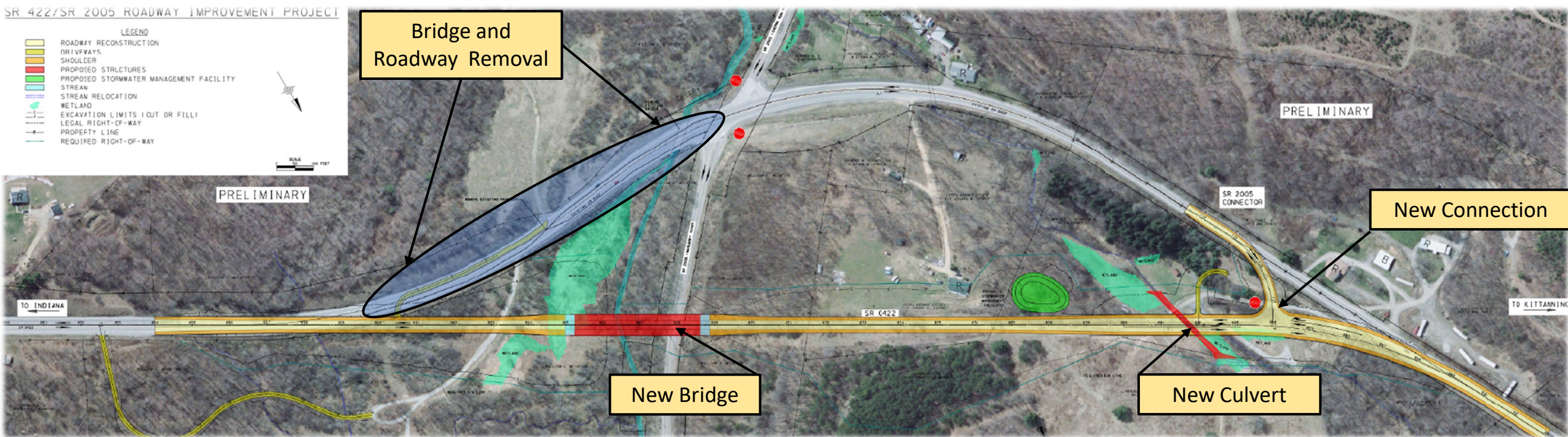
U.S. 422 CORRIDOR (KITTANNING TO INDIANA)



MARGARET ROAD INTERSECTION

U.S. 422 near the intersection of SR 2005 (Margaret Road/Cherry Run Road), Armstrong County

- Major realignment
- 326' long two-span steel girder bridge, 60' height over stream channel
- 236' long, 17' x 7' Precast Concrete Box Culvert
- Significant cut and fill along new alignment



Schedule: Fall 2022 to Summer 2025 Construction Cost: \$28.6 Million



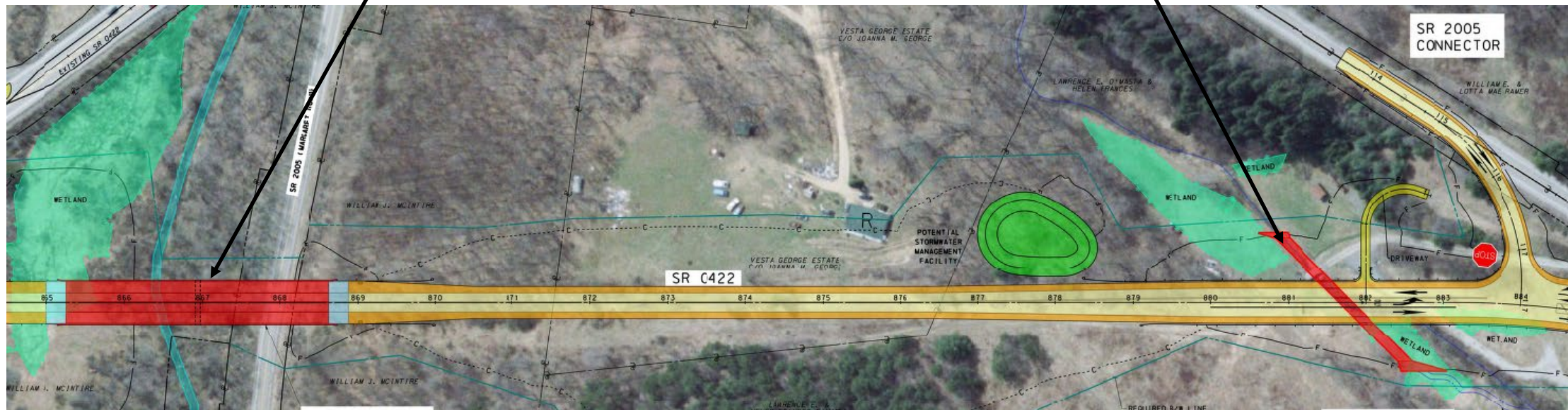
MARGARET ROAD INTERSECTION



Bridge Pier Construction



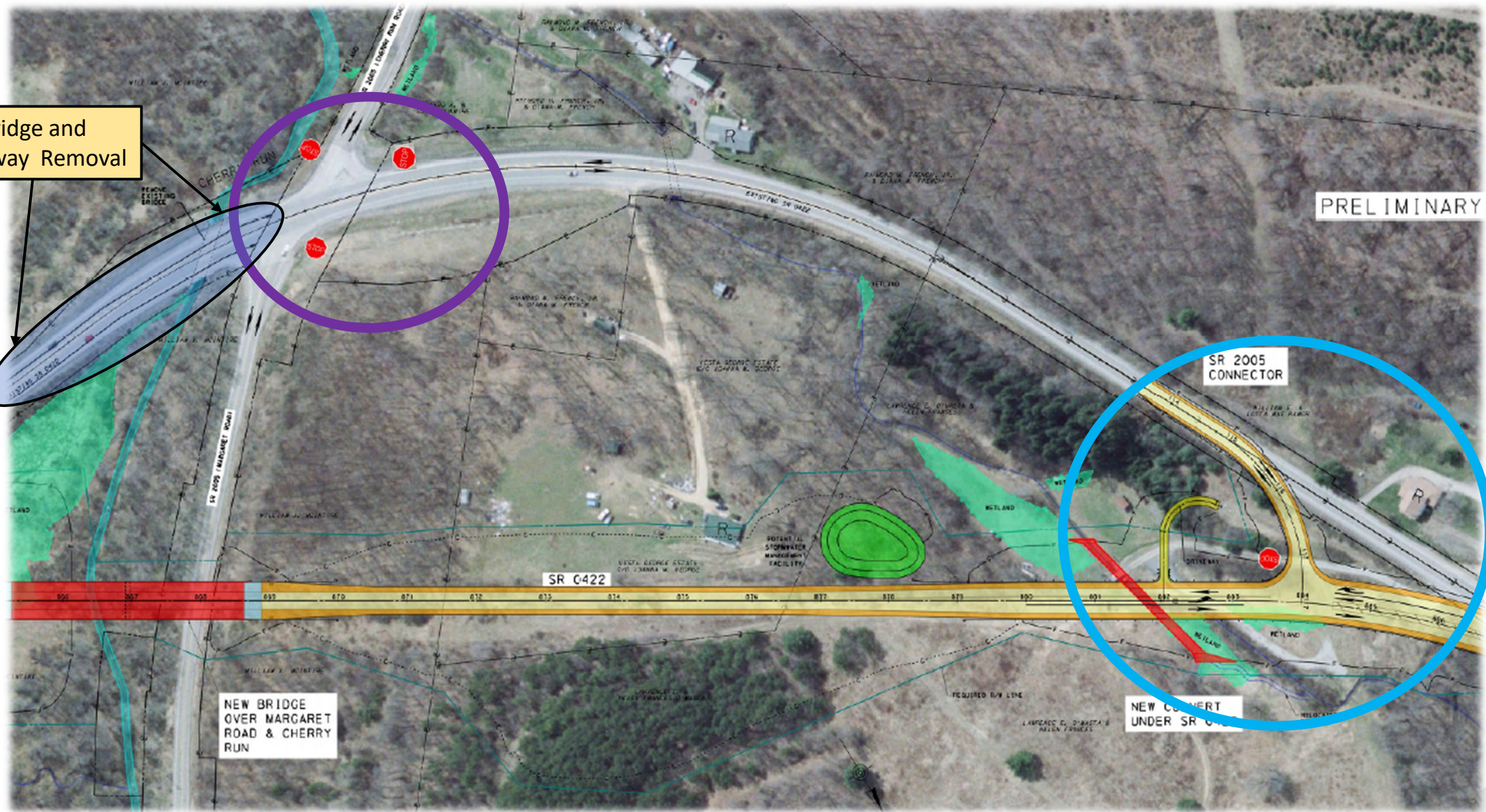
Box Culvert Placement



MARGARET ROAD INTERSECTION

Bridge and Roadway Removal

PRELIMINARY



NEW BRIDGE OVER MARGARET ROAD & CHERRY RUN

SR 2005 CONNECTOR

NEW CONNECTOR UNDER SR 422



MARGARET ROAD INTERSECTION

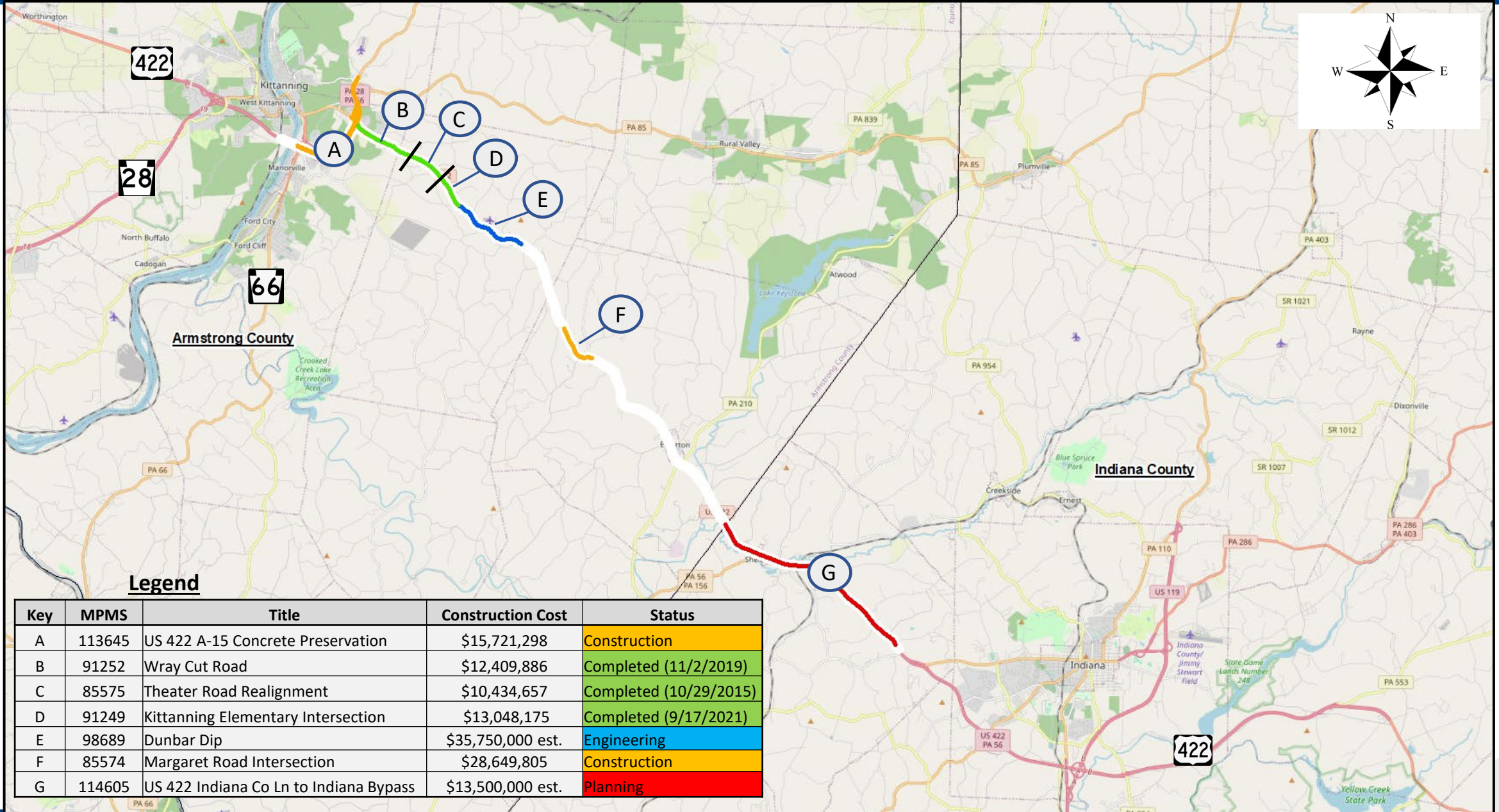
Old

New

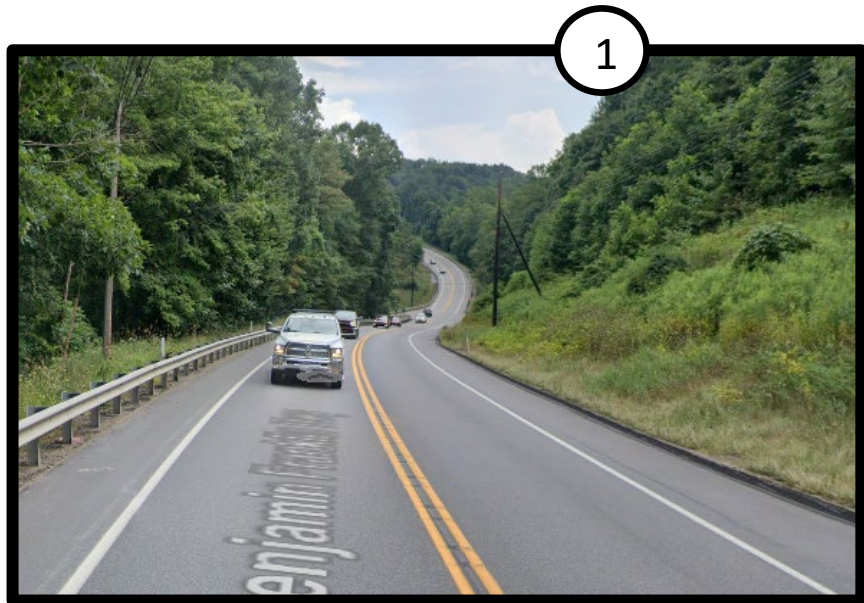
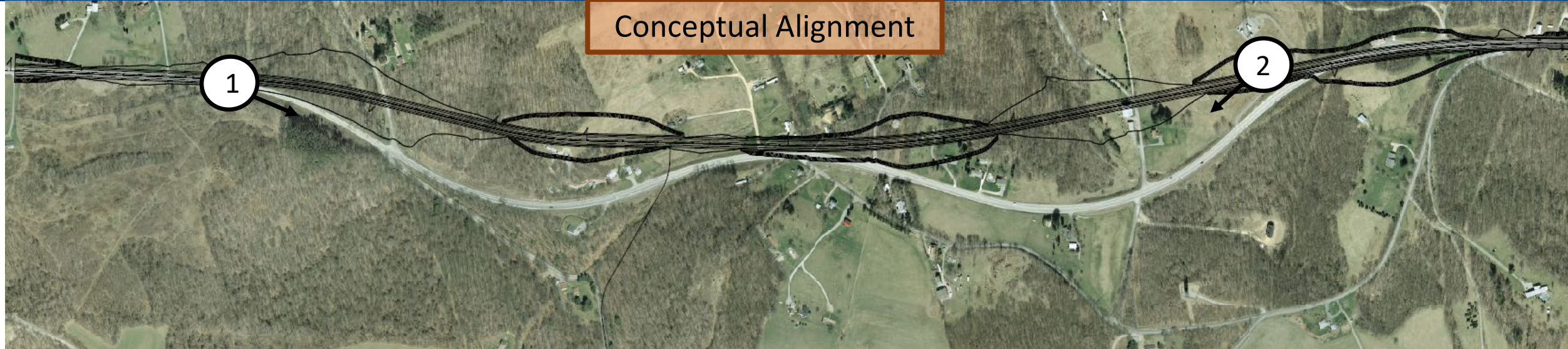
Margaret Road



U.S. 422 CORRIDOR (KITANNING TO INDIANA)



U.S. 422 FUTURE NEEDS – DUNBAR DIP



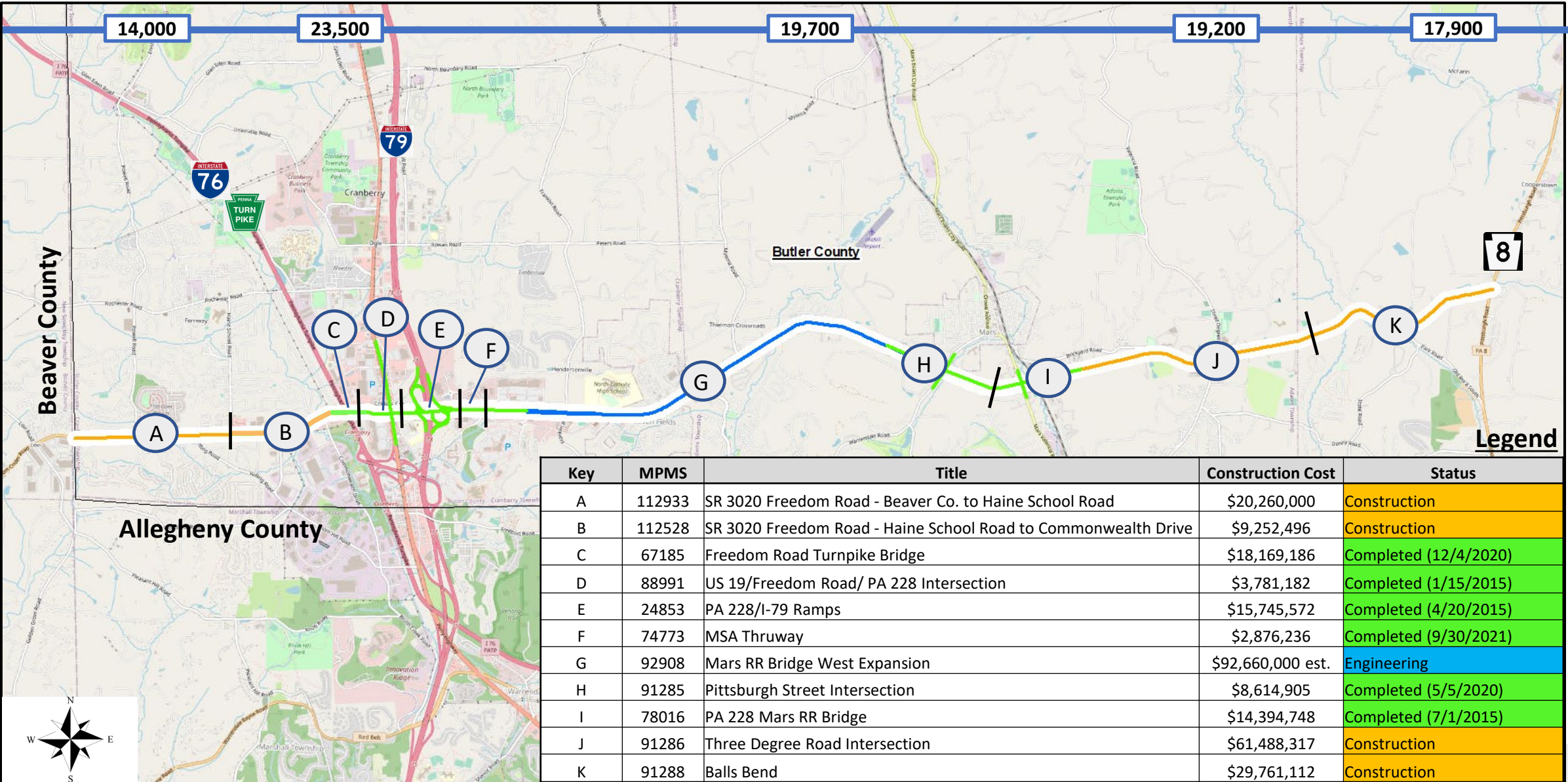
U.S. 422 Dunbar Dip Realignment Project

- Early Preliminary Engineering
- \$37.8 M construction estimate based on conceptual layout



GATEWAY 228 CORRIDOR

Corridor
AADT



Legend



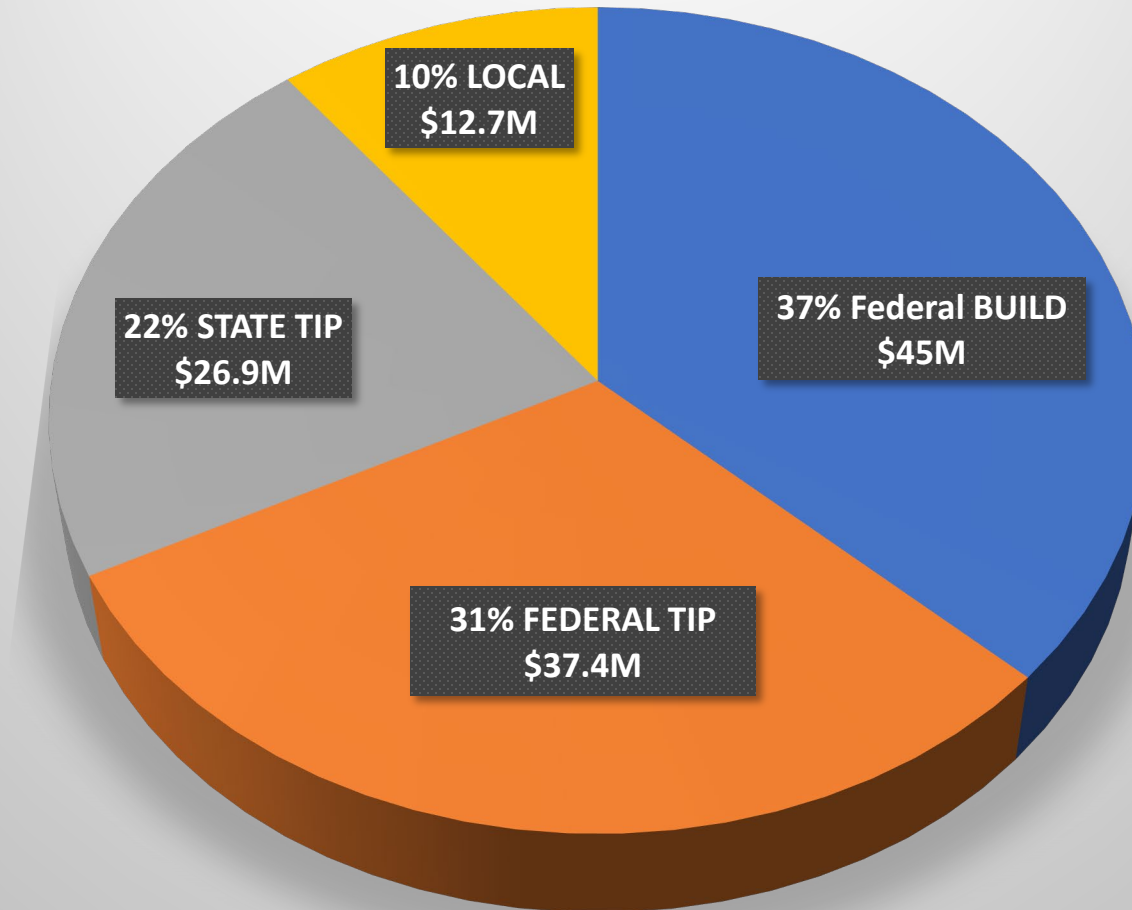
BUILD GRANTS – ROUTE 228 CORRIDOR

- BUILD 2018 - **\$20M Grant**
 - SR 228 Balls Bend Realignment
 - SR 3020 Freedom Road Haine School Road to Commonwealth Drive Widening
- BUILD 2020 - **\$25M Grant**
 - SR 228 Three Degree Road Intersection
 - SR 3020 Freedom Road County Line to Haine School Road Widening

BUILD Projects Funding Distribution

4 Projects - \$122 Million

47% Non-TIP funded



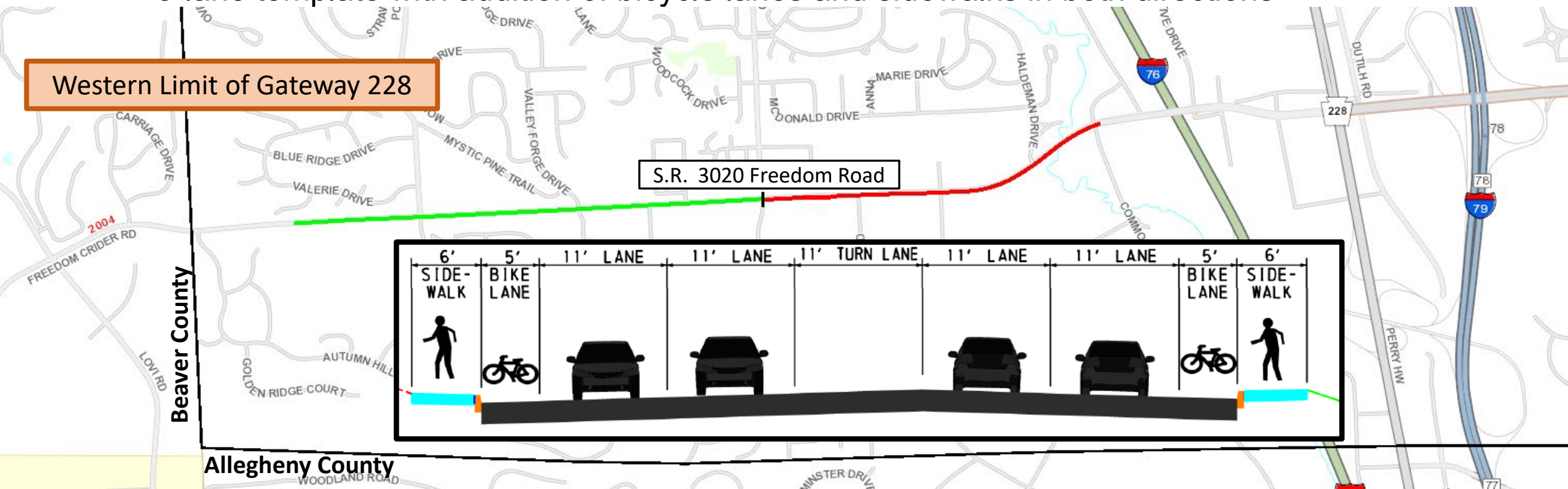
SR 3020 FREEDOM ROAD PROJECTS

Location: SR 3020 in Cranberry Township, Butler County

- 2 projects covering from Commonwealth Drive to east of the Beaver County line ~1.8 miles

Project Overview:

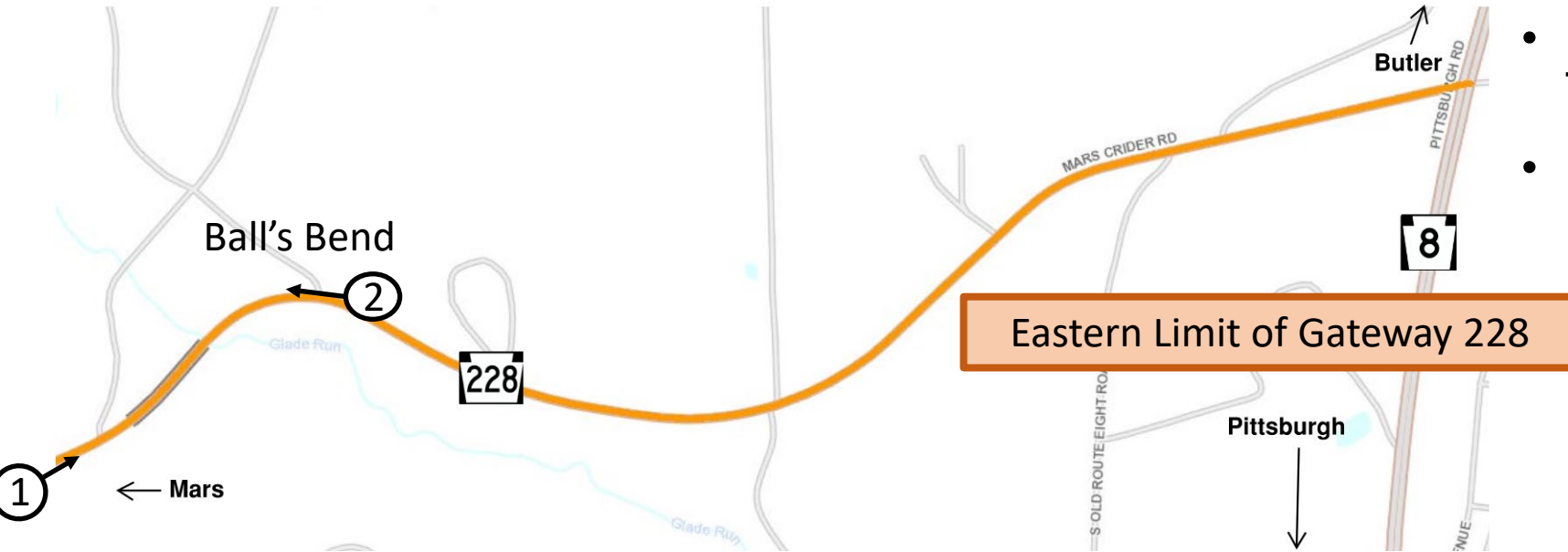
- Major widening project with geometric improvements and signal replacement
- 5-lane template with addition of bicycle lanes and sidewalks in both directions



Schedule: February 2021 to November 2025 Construction Cost: \$29.5 M



BALLS BEND SAFETY IMPROVEMENT



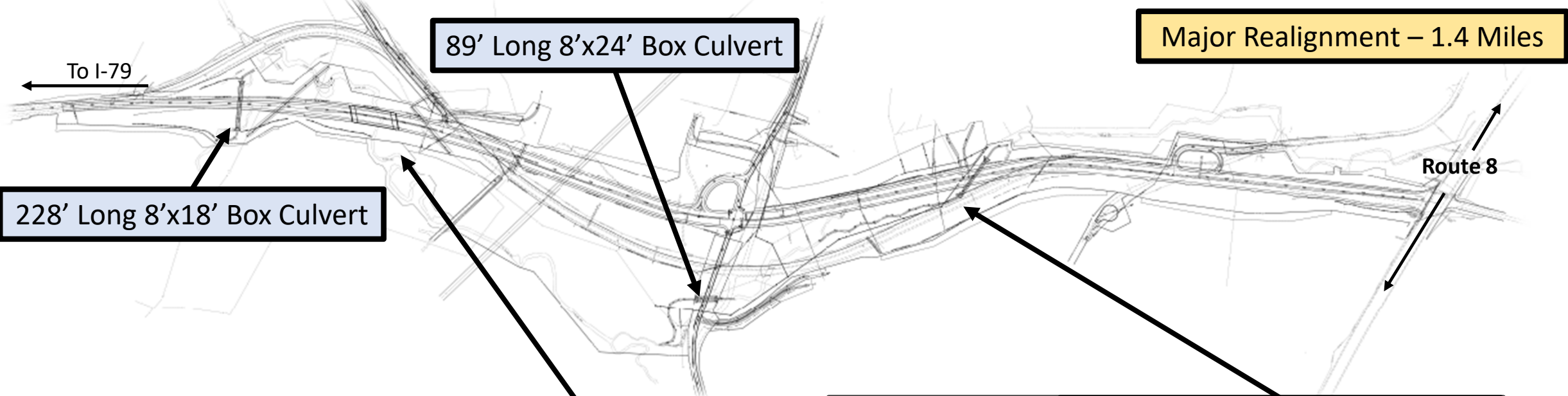
- Location: SR 228 in Middlesex Twp., Butler County
- Project Overview:
 - Major realignment project establishing 5-lane typical section with limited left turn movements to improve safety and mitigate congestion
 - 4 new structures
 - 2 new jug handles
 - 1 new signal



- Schedule: December 2020 to January 2025
- Construction Cost: \$29.7 million



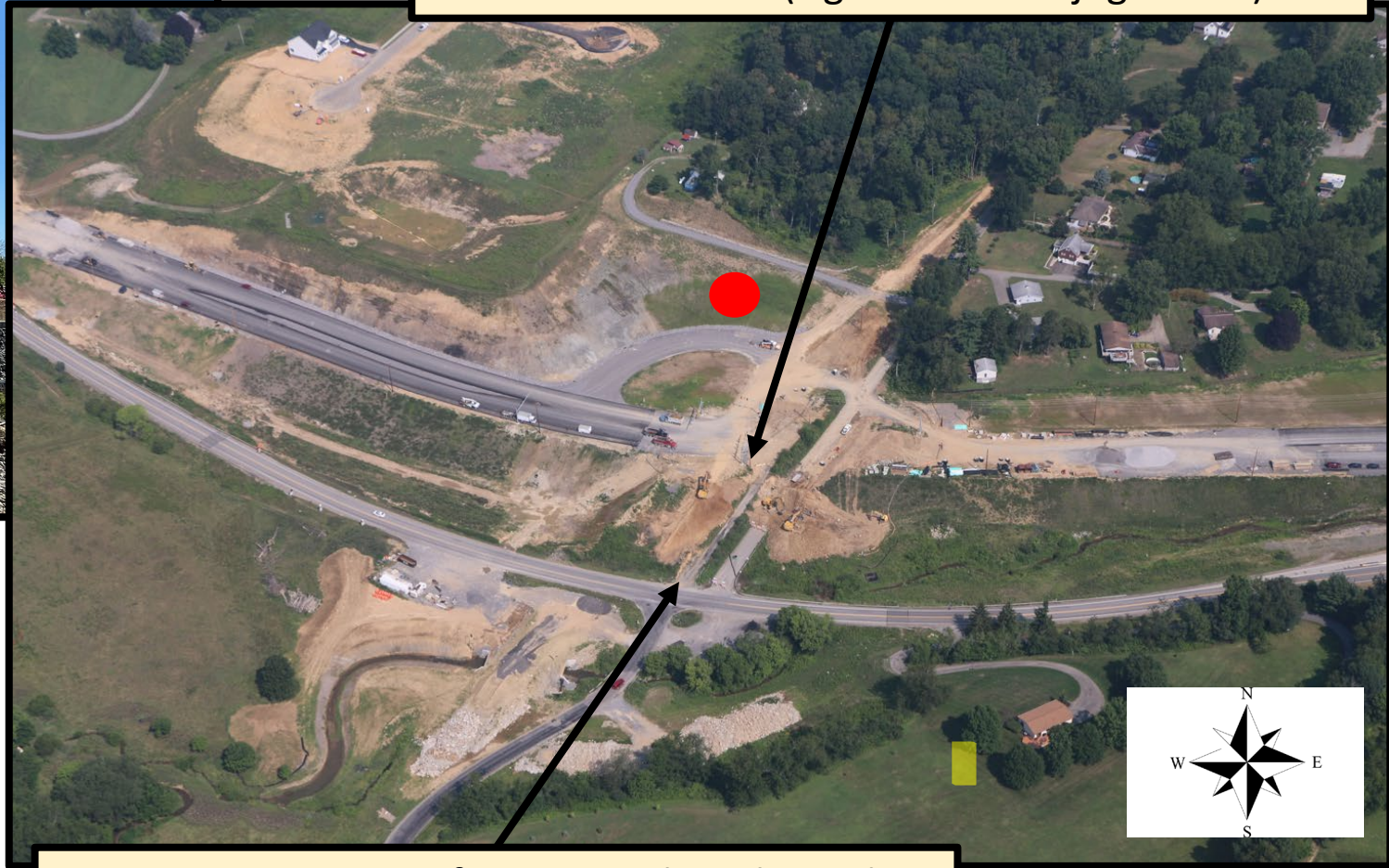
BALLS BEND SAFETY IMPROVEMENT



BALLS BEND SAFETY IMPROVEMENT



Bridge Construction



Proposed Intersection of SR 228 with Park Road and Harbison Road (signalized with jughandle)

Existing Intersection of SR 228 with Park Road and Harbison Road (non-signalized and offset)



BALLS BEND SAFETY IMPROVEMENT

Old

New

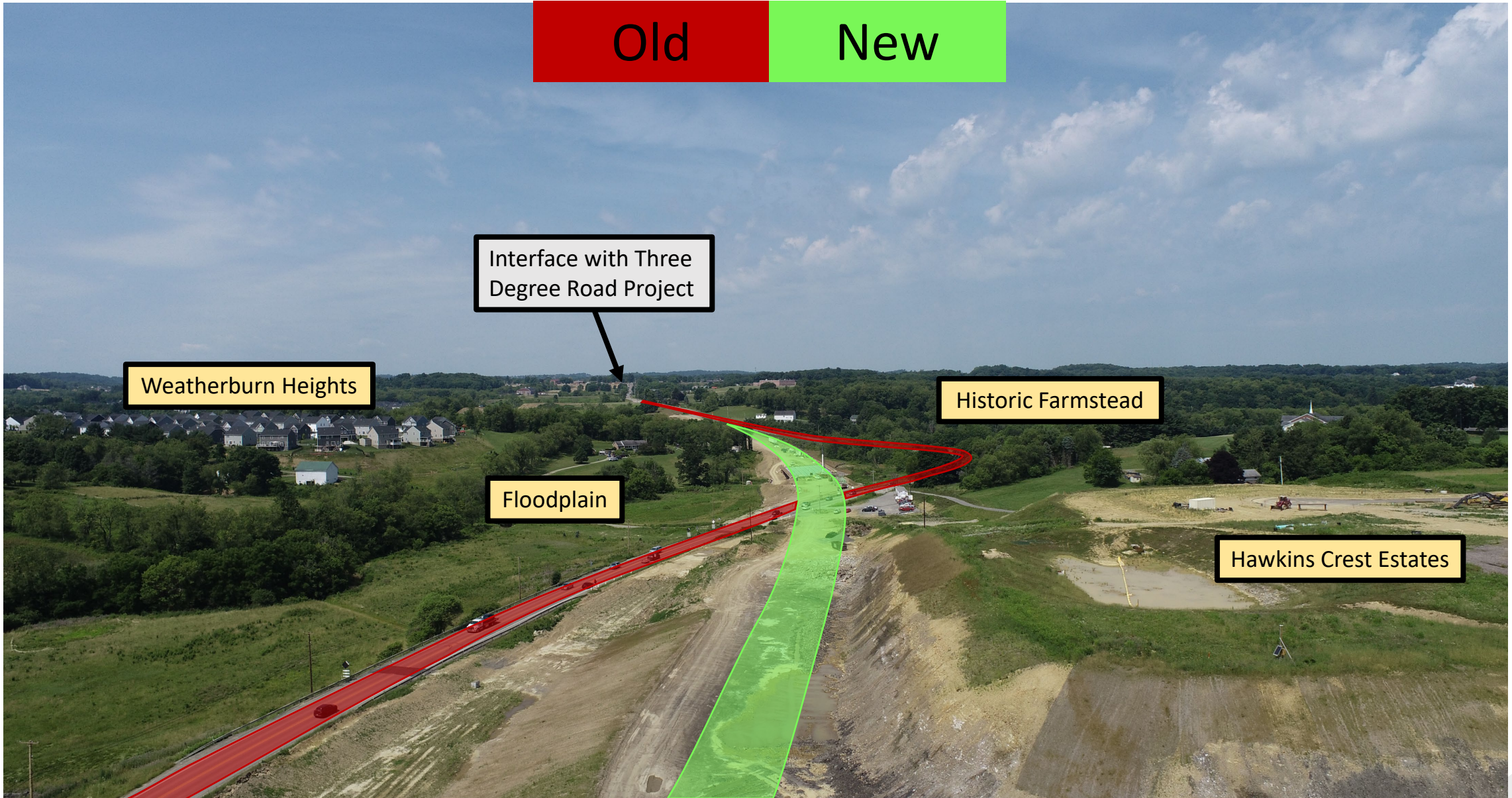
Interface with Three Degree Road Project

Weatherburn Heights

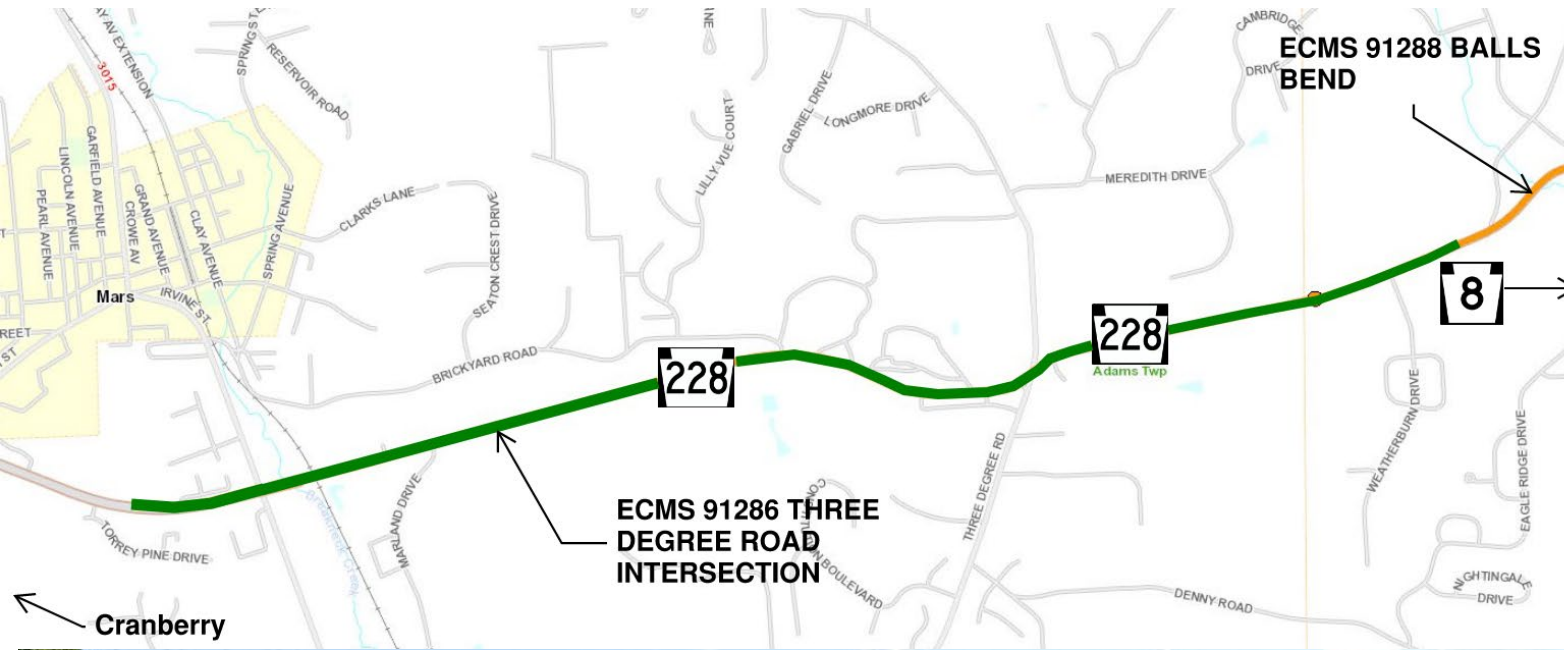
Historic Farmstead

Floodplain

Hawkins Crest Estates



THREE DEGREE ROAD INTERSECTION

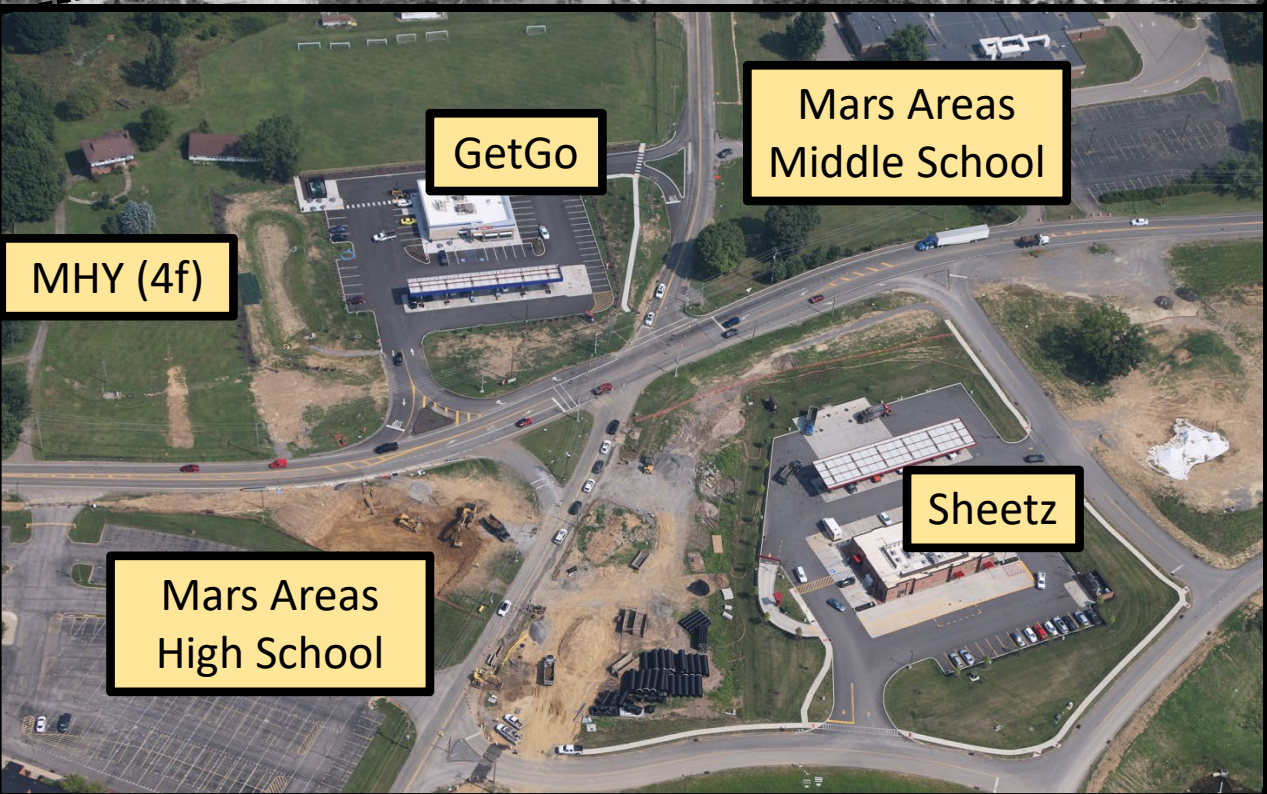
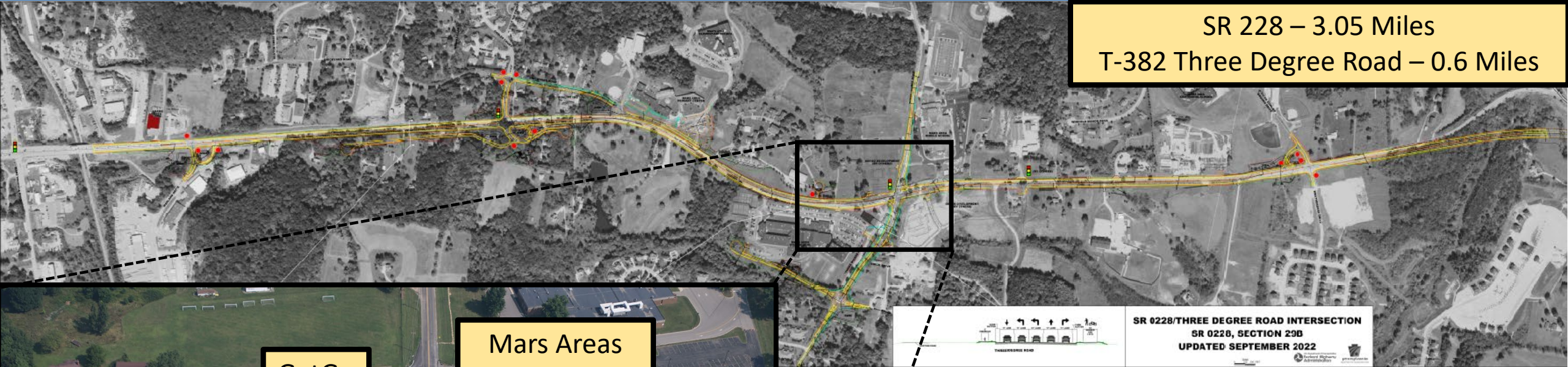


- Location: SR 228 Adams and Middlesex Twps., Butler County
- Project Overview:
 - Safety and congestion management project
 - Widening to a 5-lane typical section with geometric improvements
 - Significant secondary road infrastructure changes to provide improved access
- Schedule: December 2022 to November 2026
- Construction Cost: \$61.5 million



THREE DEGREE ROAD INTERSECTION

SR 228 – 3.05 Miles
T-382 Three Degree Road – 0.6 Miles



Adjacent Development

- Significant and expanding commercial and residential development
- GetGo – Opened <5 mo. prior to PS&E
- Sheetz – Opened <1 yr. prior to PS&E
- Extensive coordination with developers



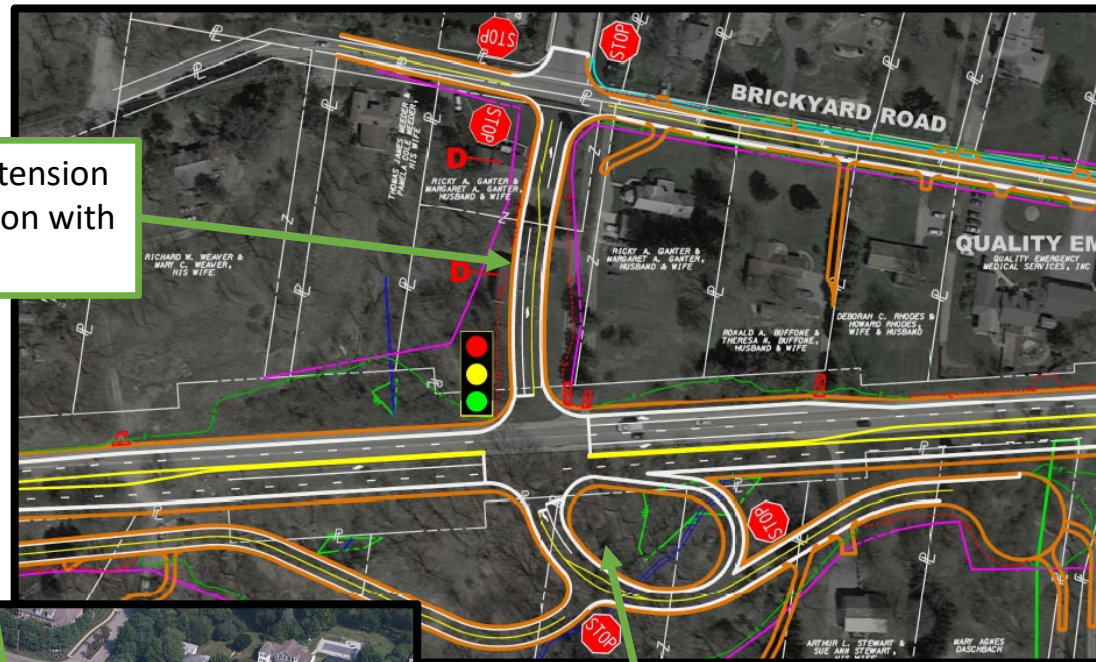
THREE DEGREE ROAD INTERSECTION

Safer and more efficient access

Weatherburn Drive (access to highly developed residential area)

Officer Edwards Brooks Drive (Bus access to MASD)

Gables Court extension to new connection with Route 228



Elimination of non-signalized left turns through corridor

- 3 New Parallel Local Service Roads
- 2 Local Road Extensions
- 3 New Jug Handles
- 1 New Roundabout (Local Road)



Significant fill in location of proposed jug handle and new parallel twp. road interface



THREE DEGREE ROAD INTERSECTION

Stormwater Management

- 5 Surface Basins
- 5 Subsurface Storage Areas
- 18 Soil Supplement Areas



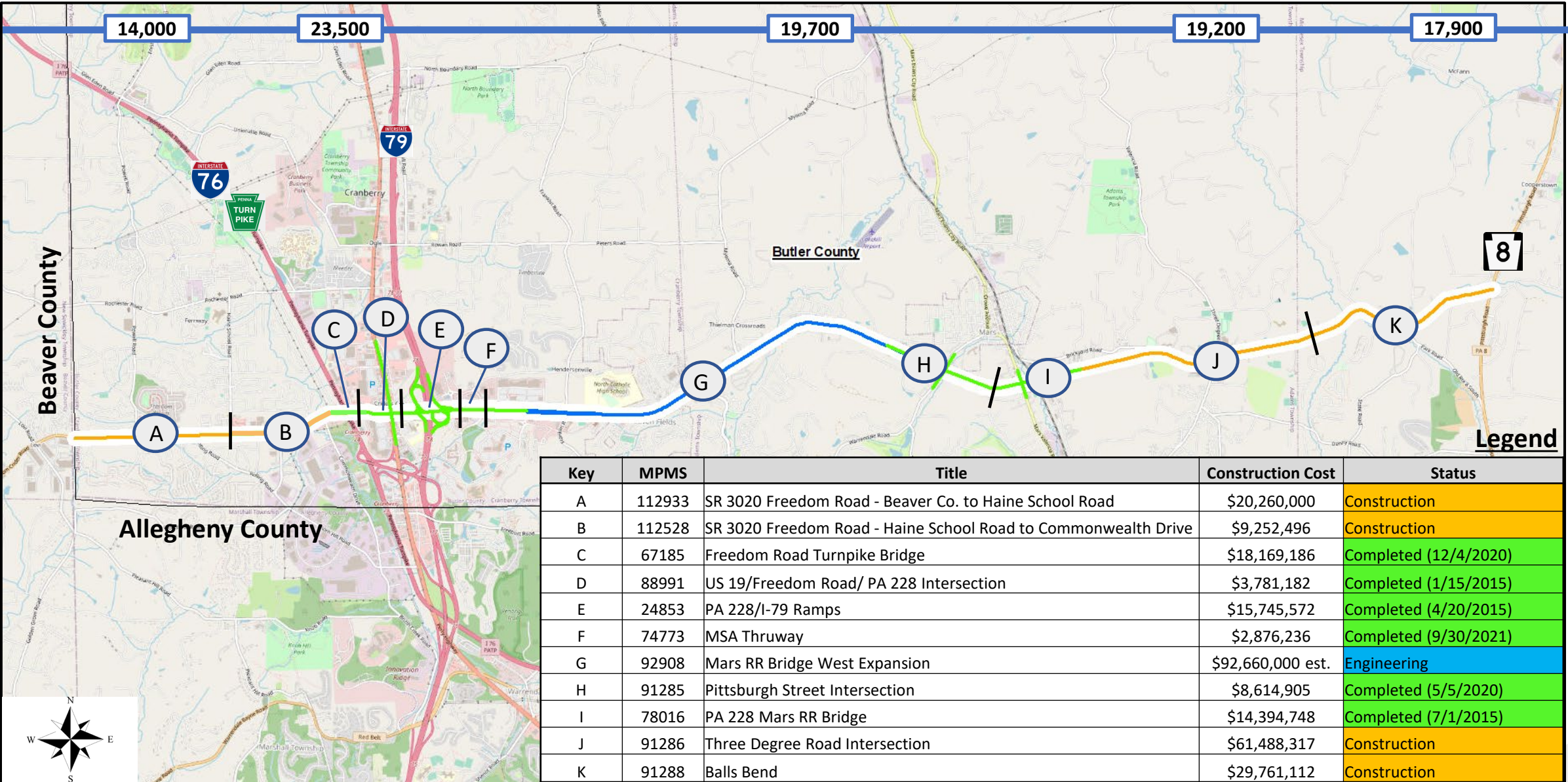
Retaining Wall

- Soldier Pile and Lagging
- 246 feet long
- Max height 14 feet



GATEWAY 228 CORRIDOR

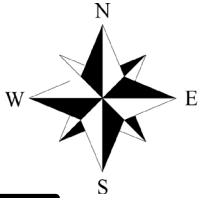
Corridor
AADT



MISSING LINK – 228 CORRIDOR

SR 228 Mars RR Bridge West Expansion

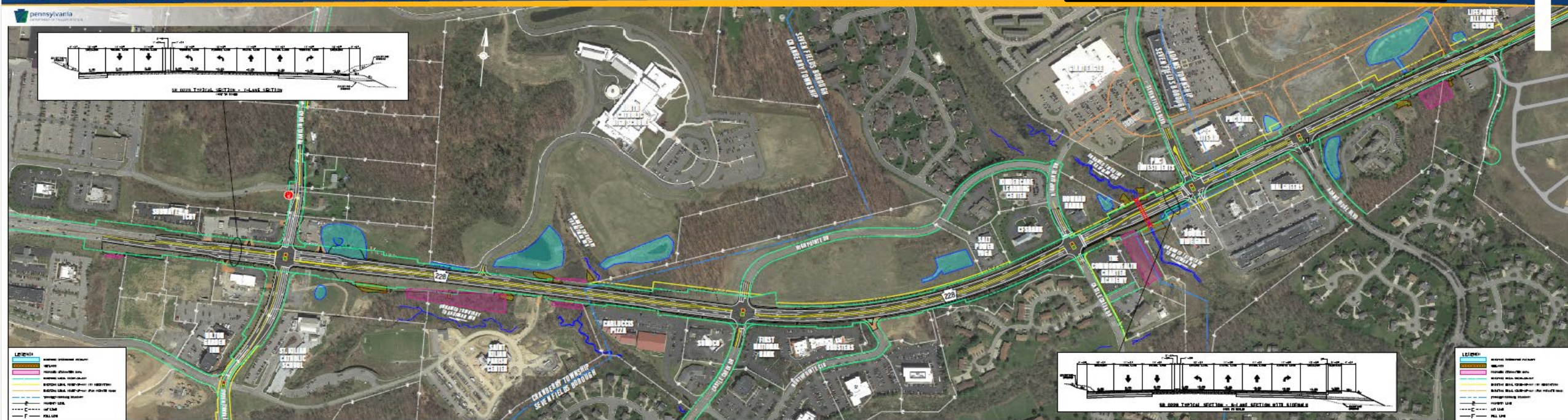
- Remaining section of SR 228 in need of expansion between I-79 and SR 8
- Major widening of SR 228 from 2 lanes to 5 lanes in Cranberry Township, Adams Township and Seven Fields Borough, Butler County
- Currently in Preliminary Engineering



Project Length– 3.3 Miles

1

WRA ROUTE 228 RR BRIDGE WEST EXPANSION PROJECT



**Thank
You**