ASHE Altoona/PennDOT 9-0





20th Annual Joint Workshop

Monday, April 18, 2022

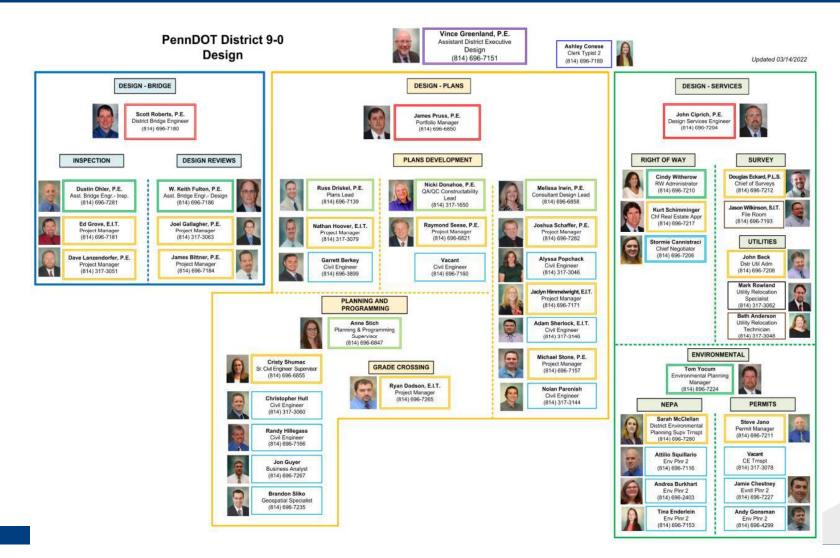


CENTRAL OFFICE ORG CHANGE

- Chief Executive: Jon Fleming
 - Chief Engineer: Gavin Gray
 - Bureau of Maintenance
 - Vacant
 - Safety, Fleet, Tech Leadership, Asset Mgmt
 - Bureau of Operations
 - Vacant
 - OPO, Maint Support, Program Analysis/Metrics
 - Bridge Office
 - Vacant
 - Now includes Inspection
 - Bureau of Construction & Materials
 - Acting
 - Bureau of Design & Delivery
 - · C. Spangler



DESIGN DIVISION





Safety



AUTOMATED WORK ZONE SPEED ENFORCEMENT

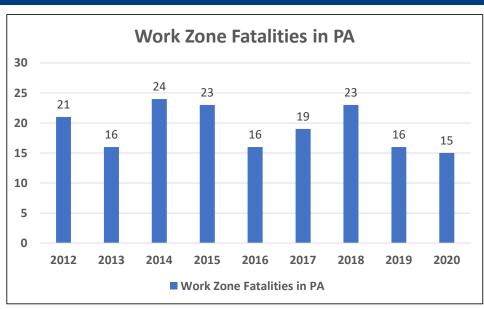
>AWZSE

PROGRAM OUTREACH - PEER-TO-PEER MEETINGS









RESULTS:

Excessive Speeds (>11 mph)

~10% April 2020

<3% June 2021



Automated Work Zone Enforcement Deployments - 2021

Deployed on a total of five District 9 projects:

- > I-99 Turnpike to Sproul
- ➤ US 219 McNally Bridge
- > US 22 Cambria Interchanges
- > US 219 Meyersdale Bypass
- > US 219 Misc Maintenance Work

| | DISTRICT 9 AWZSE DEPLOYMENTS SUMMARY | | | | | | | | | | | |
|---------------------|--------------------------------------|-----|------------------------------|-----|--------------|-------------------------------------|-----------|--------------------------------|--|--|--|--|
| | | | Violations per Deployment | | Percent over | Percent Excessively Speeding* | Excessive | MPH over Threshold Speed | | | | |
| I-99 Section 013 | 37 | 216 | 5.84 | 182 | 11.62% | 0.24% | 73.31 | 2.31 | | | | |
| US 219 Section 46B | 57 | 307 | 5.39 | 266 | 6.23% | 0.22% | 78.27 | 2.32 | | | | |
| US 22 Section 029 | 81 | 57 | 0.70 | 46 | 0.66% | 0.02% | 79.89 | 3.89 | | | | |
| US 219 Sect ion 003 | 79 | 235 | 2.97 | 173 | 10.27% | 0.87% | 68.47 | 2.47 | | | | |
| US 219 Maintenance | 6 | 1 | 0.17 | 1 | 1.60% | 0.02% | 82.00 | 6.00 | | | | |
| Total | 260 | 816 | 3 | 668 | 6.07% | 0.27% | 76.39 | 3.40 | | | | |

Vehicles traveling at or over the threshold speed of 11 mph or over the posted speed limit

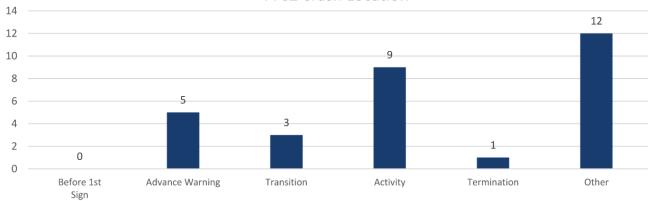
District TTCZ Performance Summary

| D9-0 | 2020 | Trend from '19 | State Avg. | | | | | | |
|----------------------------------|------|-------------------|---------------|--|--|--|--|--|--|
| Safety Metrics | | | | | | | | | |
| TTCZ Crashes per Year | 30 | 1 | 129 | | | | | | |
| Rear-End Crashes | 15 | 1 | 50 | | | | | | |
| Veh. Crash Speed over WZSL | 32% | 1 | 28% | | | | | | |

| Mobility Metrics | | | | | | | | | |
|--------------------------------|----------|------|---|---|--|--|--|--|--|
| Peak Delay (hr.) | 0 | 63K | 1 | 328K | | | | | |
| Non-Peak Delay (hr.) | (1) | 322K | 1 | 1,553K | | | | | |
| % Time Queue >1mi. | * | 26% | 1 | 22% | | | | | |
| TTR: Planning Time Index | mi mi | 1.16 | 1 | 1.20 (on-time arrival TT multiplier) | | | | | |

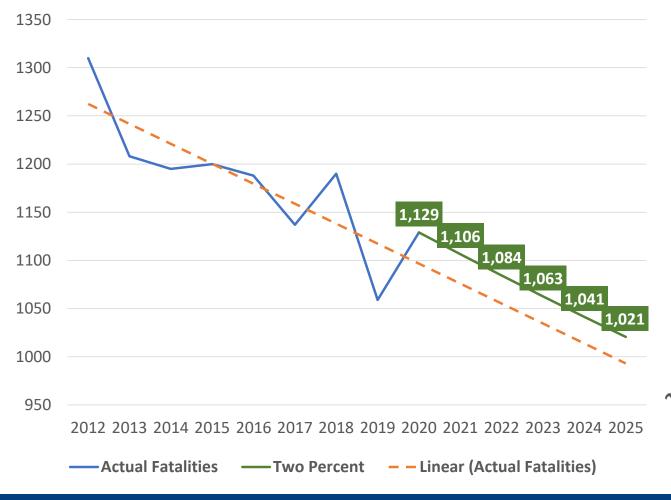
| Management Metrics | | | | | | | | | | |
|-------------------------|-------|----------|--------|--|--|--|--|--|--|--|
| Traffic Control QA/QC | 92 | \ | 90 | | | | | | | |
| Work Zone Intrusions | 10 | ~ | 7.7 | | | | | | | |
| PSP Assist. | \$65K | / | \$387K | | | | | | | |

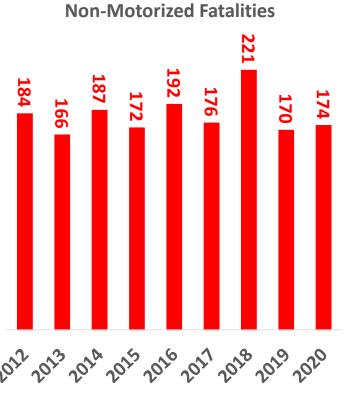






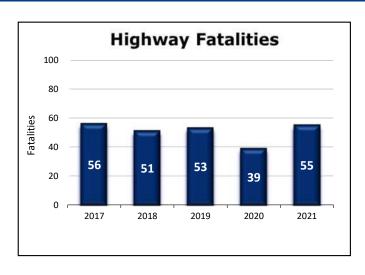
FATALITIES





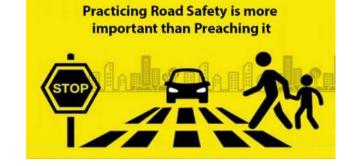


SAFETY



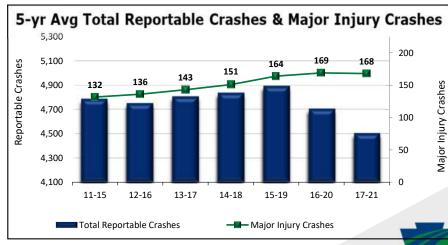


On the Road to a Safer You



District 9

Beginning 2016 injury definitions changed to align with Model Minimum Crash Criteria 4th Edition



District 9 Assets Bridge & Roadway

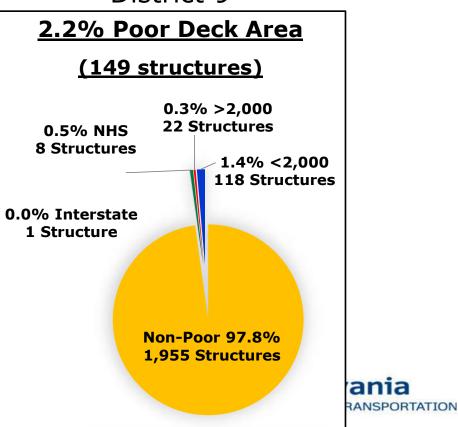


Bridge Assets

Statewide

6.1% Poor Deck Area (2,518 structures) 1.3% >2,000 2.0% NHS 708 Structures **295 Structures** 1.4% < 2,000 1,441 **Structures** 1.4% Interstate **74 Structures** Non-Poor 93.9% 22,926 Structures

District 9

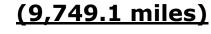


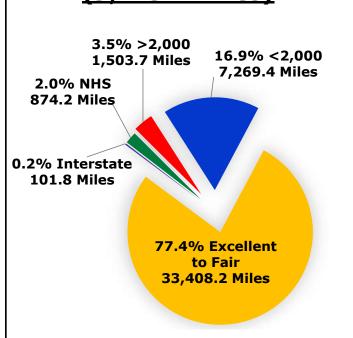
Data from 2020 Annual Performance Measures Reports

Roadway Assets

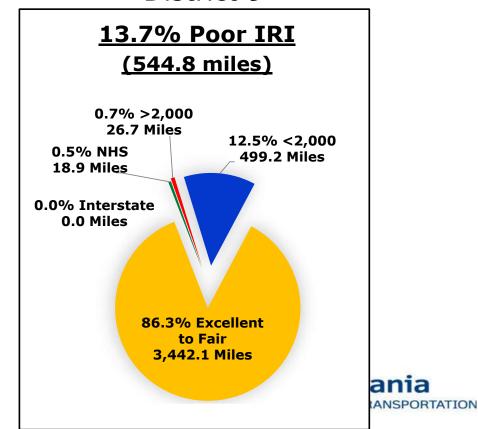
Statewide

22.6% Poor IRI





District 9



Data from 2020 Annual Performance Measures Reports

INNOVATION

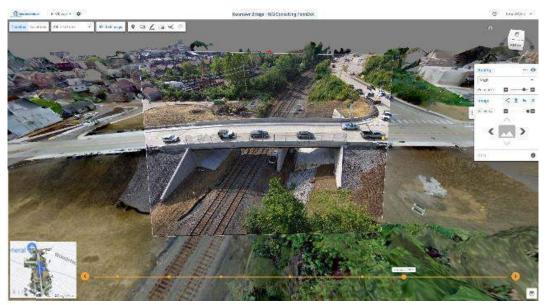


MOVING INTO A VIRTUAL WORLD

Augmented Reality & Virtual Inspections





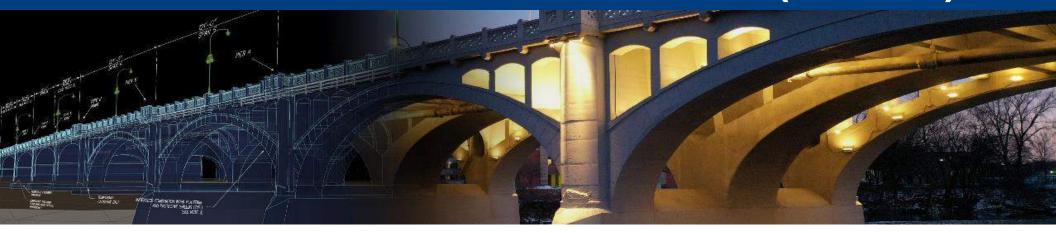


Unmanned Aircraft Systems





DIGITAL DELIVERY DIRECTIVE 2025 (3D2025)



Vision: By 2025, construction projects will be bid using 3D technology and no longer be in a traditional construction plan format.

- Phase II (Development) of the Directive
- Pilot Projects
 - Digital As-Builts/Single Project PDF/Roadway & Bridge Modeling
- Stakeholder Coordination





FUNDING



BIL - BIPARTISAN INFRASTRUCTURE LEGISLATION

"New" Federal Funds

| Year | Current Funding | Highway Funds | Special Bridge | Total Add'l Funds |
|------|-----------------|---------------|----------------|-------------------|
| 2022 | \$1.8 Billion | \$377 M | \$262 M | \$639 M |
| 2023 | \$1.8 Billion | \$421 M | \$294 M | \$715 M |
| 2024 | \$1.8 Billion | \$465 M | \$327 M | \$792 M |
| 2025 | \$1.8 Billion | \$510 M | \$360 M | \$870 M |
| 2026 | \$1.8 Billion | \$557 M | \$392 M | \$949 M |
| | | | | \$3.965 B |

^{*\$1.0} Billion in matching State Dollars



^{*}Must also fund pre-construction phases

2022 FUNDING: BIL

| FFY 2022 IIJA Additional Funding (\$000's) | | | | | | |
|---|----------|--|--|--|--|--|
| Blair MPO | \$4,343 | | | | | |
| Cambria MPO | \$5,920 | | | | | |
| S Alleghenies RPO | \$12,838 | | | | | |
| District 9 | \$24,101 | | | | | |



2023 – 2026 FUNDING: BIL

| | Original Guidance FFY 2023-2026 (\$000's) | IIJA Estimates FFY 2023-2026 (\$000's) | Increase (\$000's) | Increase (%) |
|-------------------|---|--|-----------------------|-----------------|
| Blair MPO | \$44,750 | \$66,222 | \$21,472 | 47.98% |
| Cambria MPO | \$65,669 | \$95,208 | \$29,539 | 44.98% |
| S Alleghenies RPO | \$134,284 | \$197,748 | \$63,464 | 47.26% |
| District 9 | \$244,703 | \$359,178 | \$114,475 | 46.78% |



2023 TIP Financial Guidance

Total FFY 2023-2026 Highway/Bridge Base Funding Allocation (\$000)

| | Flexible | | | Roads | | | Bridges | | | Total | | | | | | | | |
|---------------|-----------|------|---------|-------|---------|-----------|-----------|----|----------|-----------|----|---------|------------|------------|----|---------|----|----------|
| | Original | | IIJA | Dif | ference | Original | IIJA | Di | fference | Original | | IIJA | Difference | Original | | IIJA | Di | fference |
| Blair MPO | \$ 15,166 | \$ | 21,140 | \$ | 5,974 | \$ 14,450 | \$ 15,475 | \$ | 1,025 | \$ 15,134 | \$ | 29,607 | \$ 14,473 | \$ 44,750 | \$ | 66,222 | \$ | 21,472 |
| ССМРО | \$ 23,035 | \$ | 35,113 | \$ | 12,078 | \$ 25,302 | \$ 26,542 | \$ | 1,240 | \$ 17,332 | \$ | 33,553 | \$ 16,221 | \$ 65,669 | \$ | 95,208 | \$ | 29,539 |
| S Alleghenies | \$ 45,707 | \$ | 62,862 | \$ | 17,155 | \$ 43,702 | \$ 45,150 | \$ | 1,448 | \$ 44,875 | \$ | 89,736 | \$ 44,861 | \$ 134,284 | \$ | 197,748 | \$ | 63,464 |
| District 9-0 | \$ 83,908 | \$ 1 | 119,115 | \$ | 35,207 | \$ 83,454 | \$ 87,167 | \$ | 3,713 | \$ 77,341 | \$ | 152,896 | \$ 75,555 | \$ 244,703 | \$ | 359,178 | \$ | 114,475 |

- Approximately 68% of IIJA funding is directed toward bridges
- Approximately 51% of IIJA bridge funding is directed toward bridges off the federal aid system
 - Local bridges
 - Low traveled state roads
- IIJA funding: \$23M Bridges on low traveled roadways vs. \$31M on High priority Routes (NHS)



PROGRAM DISTRIBUTION

| | Cost Based Percentage | | | | | | | | | | | |
|---------|-----------------------|------|------|------|------|------|-------|--|--|--|--|--|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022* | | | | | |
| Highway | 53% | 64% | 60% | 70% | 61% | 71% | 72% | | | | | |
| Bridge | 35% | 21% | 28% | 19% | 24% | 17% | 20% | | | | | |
| Other | 12% | 15% | 12% | 11% | 15% | 12% | 8% | | | | | |

^{*2022} Projected



DISTRICT 9 2023 TIP SUMMARY

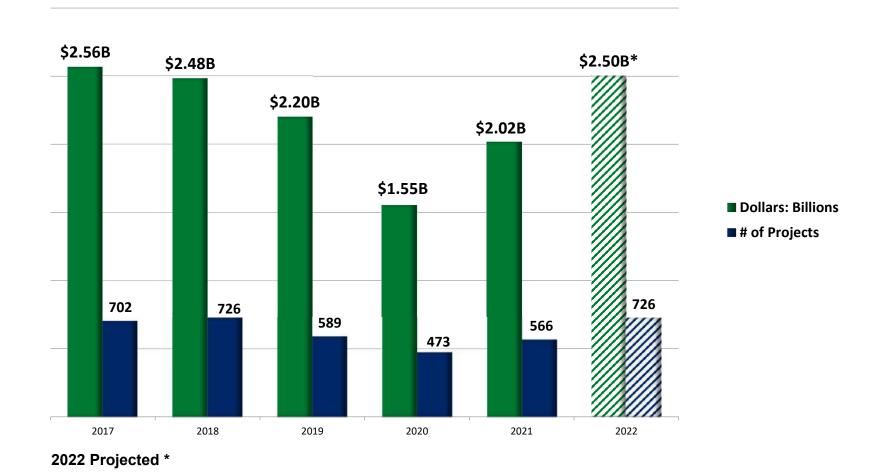
| | (\$000s) | # | (| (\$000s) | # | % of Funding Total |
|--------------------------------|-----------------|--------------------|----|----------|-----|-----------------------|
| | Orię (Decemb | ginal per 2021) | | | | |
| Base Financial Guidance Amount | \$ 244,705 | 171 | \$ | 359,178 | 238 | |
| Roadway Total | \$ 157,490 | 69 | \$ | 203,302 | 80 | 56.6% |
| Raised Pavement Markings | \$ 800 | 6 | \$ | 800 | 6 | 0.2% |
| Safety and Congestion | \$ 27,584 | 11 | \$ | 31,691 | 11 | 8.8% |
| Highway Restoration | \$ 129,106 | 52 | \$ | 170,061 | 60 | 47.3% |
| TSMO (50% match) | \$ - | 0 | \$ | 750 | 3 | 0.2% |
| Bridge Total | \$ 87,215 | 102 | \$ | 155,876 | 158 | 43.4% |
| Bridge Preservation Line Item | \$ 5,077 | 3 | \$ | 5,176 | 3 | 1.4% |
| State Bridges | \$ 59,445 | 68 | \$ | 118,092 | 119 | 32.9% |
| Local Bridges | \$ 22,693 | 31 | \$ | 32,608 | 36 | 9.1% |



PROGRAM

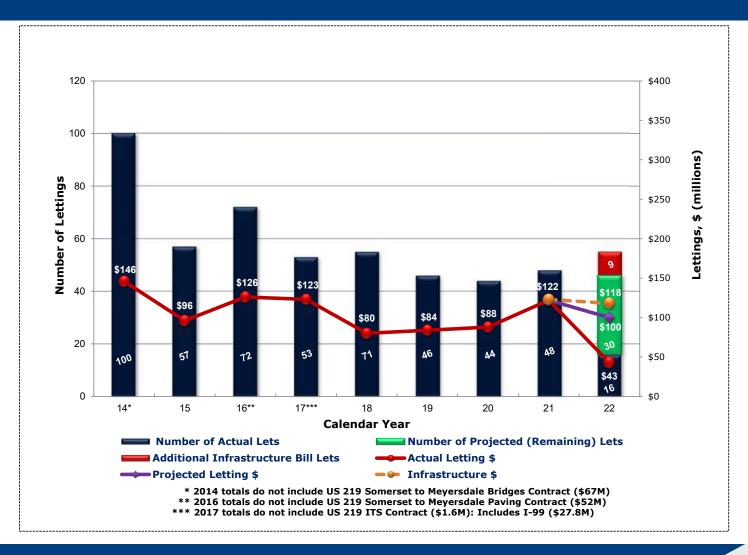


PROJECT LETTING TRENDS





DISTRICT 9-0 PROJECT LETTINGS





2020-2022 CY Lettings District 9-0

| | 2020 | 2021 | 2022 | |
|--------------------------|--------------|---------------|---------------|--|
| Construction Estimate | \$88 million | \$122 million | \$118 million | |
| Project Count | 44 | 48 | 55 | |
| Miles Resurfaced | 73 | 184 | 150 | |
| Number of Bridges | 51 | 45 | 45 | |
| Safety Projects | 8 | 5 | 3 | |



CONCERNS

- Total Projects let to Date: 26
 - Contractors Total Bid to Date: \$75,750,246
 - Design Estimate Total to Date: \$69,171,680
 - Difference to Date: 9.5%



2021 End of Season Meeting Follow-Up Items



Follow-Ups from 2021 End of Season Meeting – still under review

Industry does not feel the special provision for screening of millings to be retained by the Department or, alternately, to provide washed #8s is good for the Department from a cost perspective

Utility delay concerns

Department staff workload and increasing documentation requirements (for both Department and contractor staff) ~ impacts to prompt payments, timely field decisions

Tight projects schedules (permit restrictions, school restrictions, etc.)

Industry recommended that when the Department assigns inspection staff to projects, they attempt to distribute staff evenly to pair staff who are good in the field with staff whose strength is on the documentation end

Industry requested the District consider implementing a tool for contractors to evaluate IICs

Due to on-going supply chain issues, will the Department be expanding the list of stored materials?

Example Follow-Ups from 2021 End of Season Meeting

Concerns were raised about tight projects schedules

- ➤ Industry looking more for flexibility on calendar timeframes/ windows, not necessarily durations
- Limit night work requirements due to staff shortages and associated costs

❖ 2021 Breakdown:

48 Contracts Let

11 Contracts had some form of compression (+8hr day, +5 day work week, etc)

11 Contracts had night work

24 Contracts had RULD, A-Bx, etc

❖ 2022 Breakdown:

55 Contracts Let

4 Contracts have some form of compression (+8hr day, +5 day work week, etc)

5 Contracts had night work

21 Contracts had RULD, A-Bx, etc

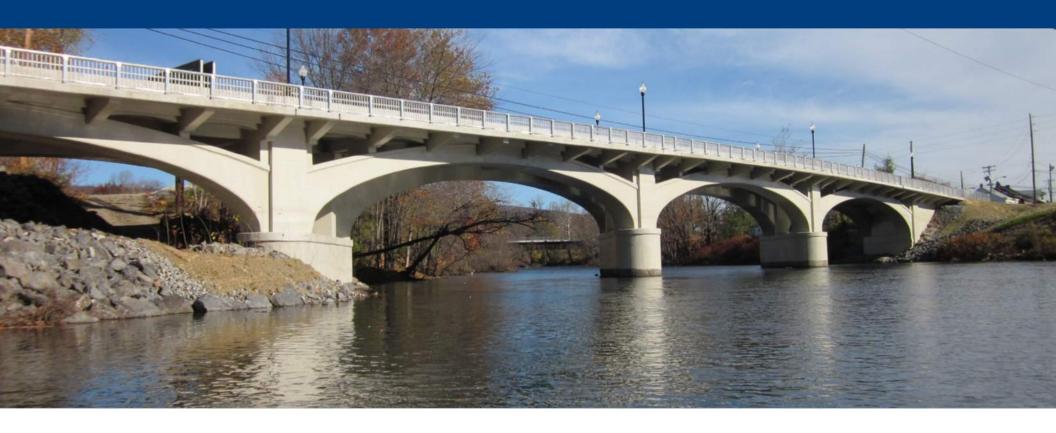
Example Follow-Ups from 2021 End of Season Meeting

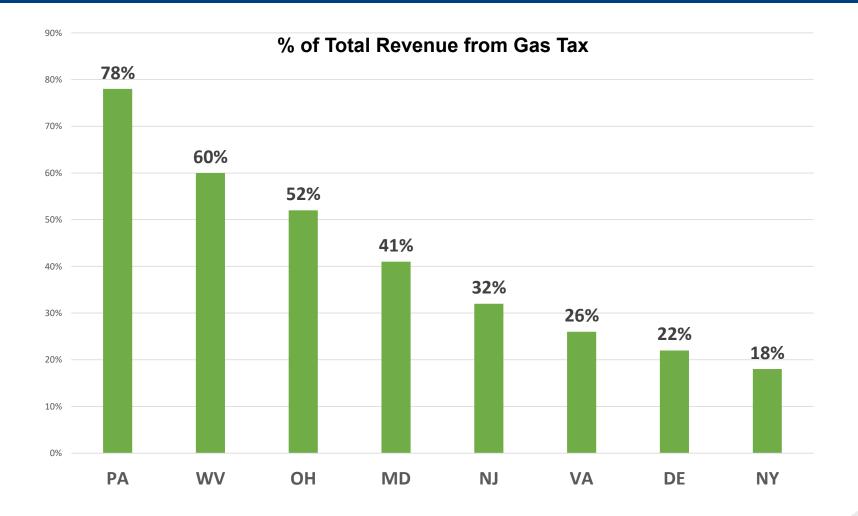
Improvements are needed in answering ECMS questions during bidding, particularly 'bid as is' type answers

- District reviewed all ECMS bid questions answered from 12/1/20 to 11/30/21 (268 total)
- 18 responses (6.7%) included verbiage such as the following:
 - Bid per plan
 - Bid as indicated
 - Bid in accordance with contract documents
- District opinion is that 9 of these responses were appropriate in the context of the question asked (5 also contained additional clarification explaining the 'bid as is' response)
- District does agree that 9 could have contained additional detail/ clarification to better explain the 'bid as is' answer
- These questions & responses have been reviewed with District Project Managers to stress that 'bid as is' type answers need to be minimized but, if such response is appropriate, any additional clarification explaining the response should be included

TRANSPORTATION REVENUE OPTIONS COMMISSION









BE SAFE ON OUR ROADWAYS!



Thank You – Questions?

