Welcome to Pennsylvania!

Governor of Pennsylvania
Tom Wolf

Secretary of Transportation
Leslie S. Richards

George W. McAuley, Jr., P.E.
Deputy Secretary for Highway Administration
Welcome to Pennsylvania
Welcome to Pennsylvania

PennDOT District Map

Committee on Construction
Pittsburgh Marriott City Center
August 12-16, 2018
PennDOT – By The Numbers

- 40,000 Miles of Roadway
- 25,400 Bridges
- $10.2 Billion Budget
- $2.4+ Billion Annual Construction Contracts Awarded
- 11,375 Employees
- 7,200 Maintenance Employees
- 53 Transit Systems
- 64 Operating Railroads
- 3 Ports
- 128 Public Use Airports
- 10.3 Million Licensed Drivers & ID Holders
- 11.8 Million Registered Vehicles
- 102 Billion Annual Vehicle Miles Traveled
- 2,440 Miles of Bicycle PA Routes

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What’s Hot at PennDOT

- Culture Change
- PennDOT Connects
- Diversity and Inclusion
- Innovation
- Asset Management
- Secondary Road Improvement Initiatives
Collaboration

- Renewed Partnering Effort
- Future Leaders of Industry
- State Transportation Innovation Council (STIC)
  - Technical Advisory Groups (TAGs)
- Transportation Quality Initiative (TQI)
- Industry Quality Improvement Committees
Innovation & Improvement

• P3 Rapid Bridge Replacement
  - Lessons Learned
  - Quality Control and Quality Acceptance
  - Quality Value relative to Handback
  - Risk Transfer and Contracting Mechanisms

• Quality Control
  - Process Capability and Product Consistency
  - Department Force QC efforts
Plastic Post-Tensioning Ducts
Coplay, PA
- County-owned bridge
- Electrically-Insulated Tendons (EIT)
- Plastic Ducts & Protective Sleeves
- Protects post-tensioning tendons from moisture and corrosion

Tybot
- Developed by Advanced Construction Robotics
- Saves time
- Eliminates labor shortages
- Reduces injuries
- Allows laborers to perform other tasks
- Can operate 24/7
Non Destructive Paint Testing

Infrared Camera attached to Steel Girder
- Replaces testing equipment that tests adhesion by suction
- Eliminates the need to repaint test locations

Accelerated Bridge Construction

District 11-0, SR 30 over Bessemer Ave., Allegheny County
- Superstructure Replacement in 57 hrs.
- Raised to increase vertical clearance
- Precast superstructure
- Ultra High Performance Concrete (UHPC)

(Courtesy of Fuchs Consulting, Inc.)
Innovation & Improvement

- Driving Innovation – RD&D
  - More aggressive with new products and innovation
  - Risk assessment
  - Pilot efforts
  - Linkage of Industry to Department research efforts
  - Deployment Plans
• Better predictive models, cyclical preventative maintenance, the right treatment at the right time

• Bridge Asset Management System (BAMS)
  – PennDOT BAMS calculations, reports, & capabilities - December 2018
  – Web based interface - July 2019

• Pavement Asset Management System (PAMS)
  – Developing the upgrade to implement by winter, 2018/19

• Performance Metrics
The Need: Lower-Volume Roads

- **18,000 miles** of PennDOT-owned, low-volume bituminous roadways
- **4,300+ miles (24%)** – No structural resurfacing in 20+ years.
- Below the National Highway System – **27% are rated as “Poor” IRI**
- Typical Project Delivery – Focuses on higher volume network
Secondary Road Improvement

- **RoadMaP**
  - Funding from Motor License Fund with State Police funding adjustment
  - Formula distribution to County Maintenance Organizations

- **Rural Commercial Routes**
  - New Appropriation from adjusted revenue projections
  - Distributed by project
• Low Cost Treatments for the Application
  – Recycled Asphalt Paving
  – High RAP WMA
  – Flexible Base Paving
  – Full Depth Recycling

• All Engineering Districts have candidate routes

• Plans are being developed and deployed
Project Letting Trends

Dollars (Billions) # of Contracts

<table>
<thead>
<tr>
<th>Year</th>
<th>Dollars</th>
<th>Contracts</th>
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<tbody>
<tr>
<td>2013</td>
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<td>2016</td>
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<tr>
<td>2017</td>
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<tr>
<td>2018*</td>
<td>$2.40B</td>
<td>730</td>
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## Contract Distribution

<table>
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<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018*</th>
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<tbody>
<tr>
<td>Paving</td>
<td>63%</td>
<td>59%</td>
<td>69%</td>
<td>56%</td>
<td>65%</td>
<td>61%</td>
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<tr>
<td>Bridge</td>
<td>25%</td>
<td>36%</td>
<td>24%</td>
<td>33%</td>
<td>21%</td>
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<tr>
<td>Misc.**</td>
<td>12%</td>
<td>5%</td>
<td>7%</td>
<td>11%</td>
<td>14%</td>
<td>12%</td>
</tr>
</tbody>
</table>

* Projections

* * Includes Drainage Improvements, Guide Rail, Pavement Markings, Signing, Signals, Lighting, etc.
Asphalt Pavement Initiatives

• Percent Within Tolerance
  – 100% Implementation in 2017
  – Target: Drive product consistency focused on job mix formula
  – Tighter adherence to field density spec. requirements

• Warm Mix Asphalt (WMA)
  – 100% Statewide Implementation

• Paving Extensions
  – P3 RBR
  – Industry Suggestions
  – Date Restrictions
  – Temperature and Precipitation
  – 5-Year “Guarantee”
• Long Life Concrete Pavement - Section 530 Included in Pub. 408 Change No. 1 (Effective October 7, 2016)

• LLCP vs RPS Section 506 - Potential Advantages

• Unbonded Concrete Over Concrete (UCOC)

• Bonded Concrete Over Asphalt (BCOA)

• Bonded Concrete Over Concrete (BCOC)
Enjoy Your Visit to Pittsburgh!