

2016

# District 1

# Report Card

## Small Bridges, Big Savings

District Combats Aging Bridges with Innovative Maintenance Unit Bridge Program

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## Hunter Station Bridge Work to Begin

Environmental and Land Issues Resolved

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## Region's First Roundabout a Safety Success

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With an eye on fiscal responsibility and safety, District 1 has been rehabilitating and replacing bridges across the region through a variety of methods. The Sugar Creek Drive Truss Bridge is among those slated for repair during the 2016 construction season.

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## By the Numbers

**\$21.8M**

redirected savings from the **District's Recycled Asphalt Pavement** Program from 2007 to 2015

**5,121**

**ADA curb ramps** installed from 2008-2015

**52**

number of District 1 **Agility Program** work plans with municipal partners

**\$59.08**

funds needed **per segment mile** in District 1, which is one of the lowest amounts in the state

**131 vs. 144**

District 1 overall median IRI score in 2014 versus the state average

**9.1%**

District 1 bridges that are **structurally deficient**, which is below the statewide rate of 14.9%

**\$302,500**

projected savings through the 2015 **Maintenance Unit** precast channel beam bridge program

**\$103.3M**

**maintenance allocation** for all six counties in 2016, up from \$102.6 million in 2015

**83**

average **annual inches of snowfall** in District 1, which is the highest in the state

**\$20.1M**

maintenance costs for the **winter of 2014-2015**, a time period in which Erie County recorded more than 100 inches of snow

**Innovation:** District 1 is very proud of its reputation for being an innovative organization.

We challenge the status quo every day as we work to provide a better transportation system for the public we serve.

We are proud of our:

- Leadership role in developing Recycled Asphalt Paving;
- Advancing Smart Transportation Planning;
- Ongoing efforts to improve and maintain pavement quality;
- Processing driveway permits at one of the fastest turnover rates in the state.

# Message from the District Executive

*"Start by doing what's necessary; then do what's possible; and suddenly you are doing the impossible." - Francis of Assisi*

Act 89 of 2013 sent expectations from our customers into a steep trajectory skyward. However, we have *always* had high expectations of ourselves to provide outstanding delivery of quality products and services. And, it has always been abundantly clear that any real measure of success has been built on the back of our dedicated workforce!

The 2016 Report Card provides you with a modest glimpse into the resources that support our operations, the successes that we are most proud of, and some consideration of the challenges that we and the transportation community face.

The Northwest PennDOT District Office (District 1) supports a six-county region that includes Crawford, Erie, Forest, Mercer, Venango and Warren counties. There are 2,064 bridges and over 3,689 linear miles of roadways that we are dedicated to maintaining. In addition, we also support the operations of nine airports, a Great Lakes Port, eight Rail Carriers, five Public Transportation Authorities and a growing system intended to provide pedestrian and bicycle access to the communities we serve.

The task, at times, is daunting.

Pennsylvanians now pay \$0.505 per gallon in state tax and \$0.184 per gallon in federal tax for their fuel. These monies are used to support our ability to maintain our fragile infrastructure in a difficult environment (easily receiving the most snow of any area in the state), and in the most non-intrusive way possible.

Despite these challenges, our workers have set themselves to task on stretching limited resources and using an entrepreneurial spirit to create extended value through our modest resources. We

have had the smoothest roads in the Commonwealth for 13 of the past 16 years and we have the second-best overall bridge health, based on recent structural deficient bridge data statewide.

We are proud to acknowledge our partnership with AFSCME, which has allowed us to provide a vibrant Recycled Asphalt Program (RAP) that has stabilized our secondary highway system in the furthest reaches of the rural sections of our district. The RAP program in this district exceeds all other districts combined and, in the past eight years, has redirected almost \$22 million back into our maintenance efforts.

This year, we kicked off a precast bridge beam program with our local partners. This program holds the promise of savings for our partners in local governments and provides a platform for future collaborations to move the local bridge system into a healthier condition.

We need to continue to stay focused on our customers and have reached out again this year to ask them how well we have performed and where we need to improve. Our growth and our public perception will both be enhanced with our due diligence and our active listening to our customers... leaving us with a path that we must follow.

We will stay focused. We will provide the value that is demanded of us. And we will support a most promising future for Pennsylvanians through a smart, focused investment plan.

Best regards,

*William G. Petit, P.E.*

District Executive, Engineering District 1

## District Overview

More than 582,000 people live in District 1. Residents have a median age of 43 years and a median annual household income of \$42,018. The District covers 4,370 square miles of land and includes 204 municipalities. On average, vehicles travel 11,150,169 miles every day on District 1 roads.

The District also features:

- **3,689 linear miles** of state highway; sixth most among the 11 PennDOT districts
- **346 miles of Interstate** (center lane); second most among the PennDOT districts
- **9.1 percent** of the District's 2,068 bridges are considered structurally deficient; second lowest percentage in the state
- **8,466 snow miles**; fifth in the state
- **83 inches of snowfall** a winter on average, 104 inches in Erie County; highest in the state



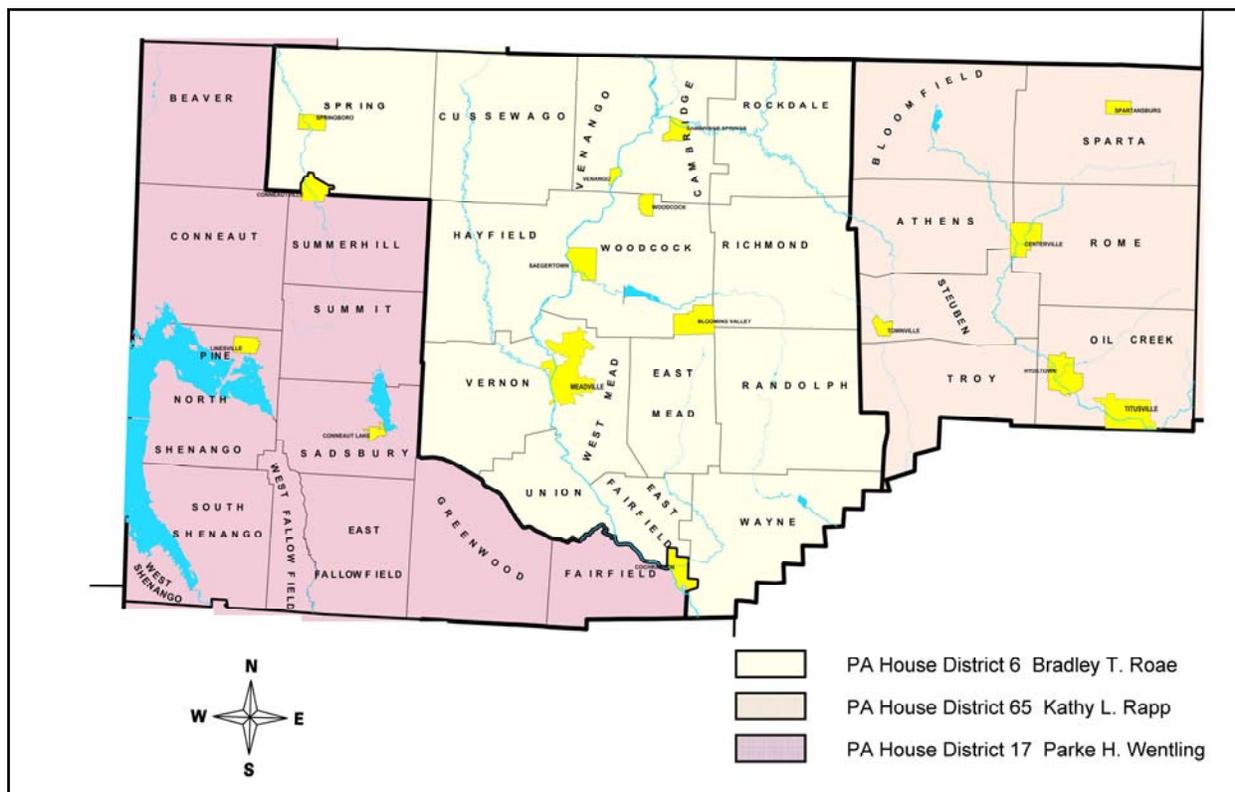
	Crawford	Erie	Forest	Mercer	Venango	Warren	District Total
State Highway Miles	910	779	201	741	529	529	3,689
Interstate Miles	54	146	0	116	30	0	346
National Highway System Miles	65	185	14	97	84	82	527
State Bridges Over Eight Feet Long	499	577	76	423	223	266	2,064
Airports	2	3	0	2	1	1	9
Transit Authority System	1	1	0	1	1	1	5
Welcome Centers	0	1	0	1	0	0	2
Roadside Rest Areas	2	2	0	2	2	0	8
Park-and-Ride Lots	1	1	0	1	0	0	3
Operating Railroads	4	7	0	2	2	2	8 *
Ports	0	1	0	0	0	0	1
Planning District	Northwest RPO	Erie MPO	Northwest RPO	Shenango Valley MPO	Northwest RPO	Northwest RPO	

\* Some railroads run through several District 1 counties

# County Overview

## Crawford County

County population	87,175
Median age of residents/household income	42 years/\$42,504
Land area	1,012.3 square miles with 35 townships, 14 boroughs, and two cities
Average vehicle miles traveled daily	1,844,703 miles
Maintenance building location	Smock Highway, Vernon Township
Staff and equipment	76 operators, 37 plow trucks, seven mechanics, and five stockpiles
Bridges	State-owned — 499 total; 63 structurally deficient (12.6%) Locally-owned — 131 total; 53 structurally deficient (40.5%)
County IRI score	134 overall; 51 for interstates
Average annual snowfall/snow lane miles	90 inches/1,964 miles

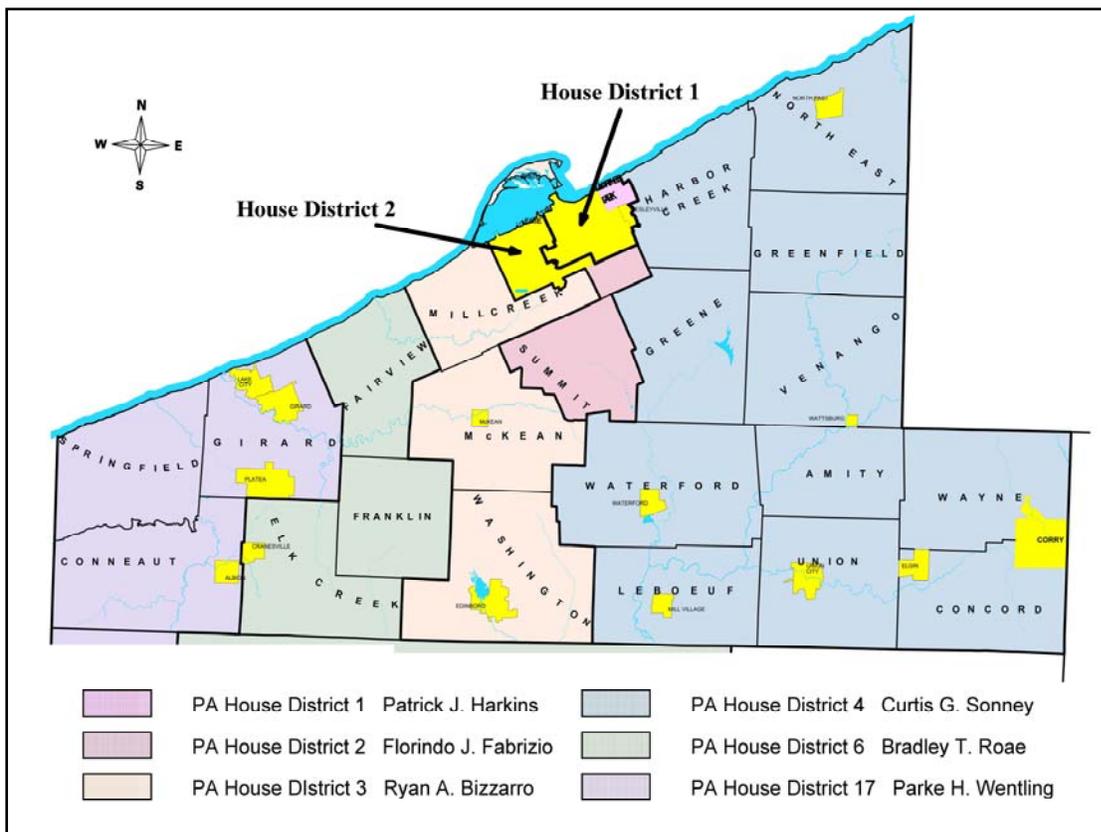


\* A listing of 2016 construction projects scheduled for this county is available in the appendix.

# County Overview

## Erie County

County population	278,443 (most populated in the District)
Median age of residents/household income	39 years/\$45,202
Land area	799.2 square miles with 22 townships, 14 boroughs, and two cities
Average vehicle miles traveled daily	4,140,327 miles
Maintenance building location	Peach Street, Millcreek Township
Staff and equipment	87 operators, 38 plow trucks, seven mechanics, and seven stockpiles
Bridges	State-owned — 577 total; 25 structurally deficient (4.3%) Locally-owned — 118 total; 44 structurally deficient (37.2%)
County IRI	107 overall; 58 for interstates
Average annual snowfall/snow lane miles	104 inches/2,015 miles

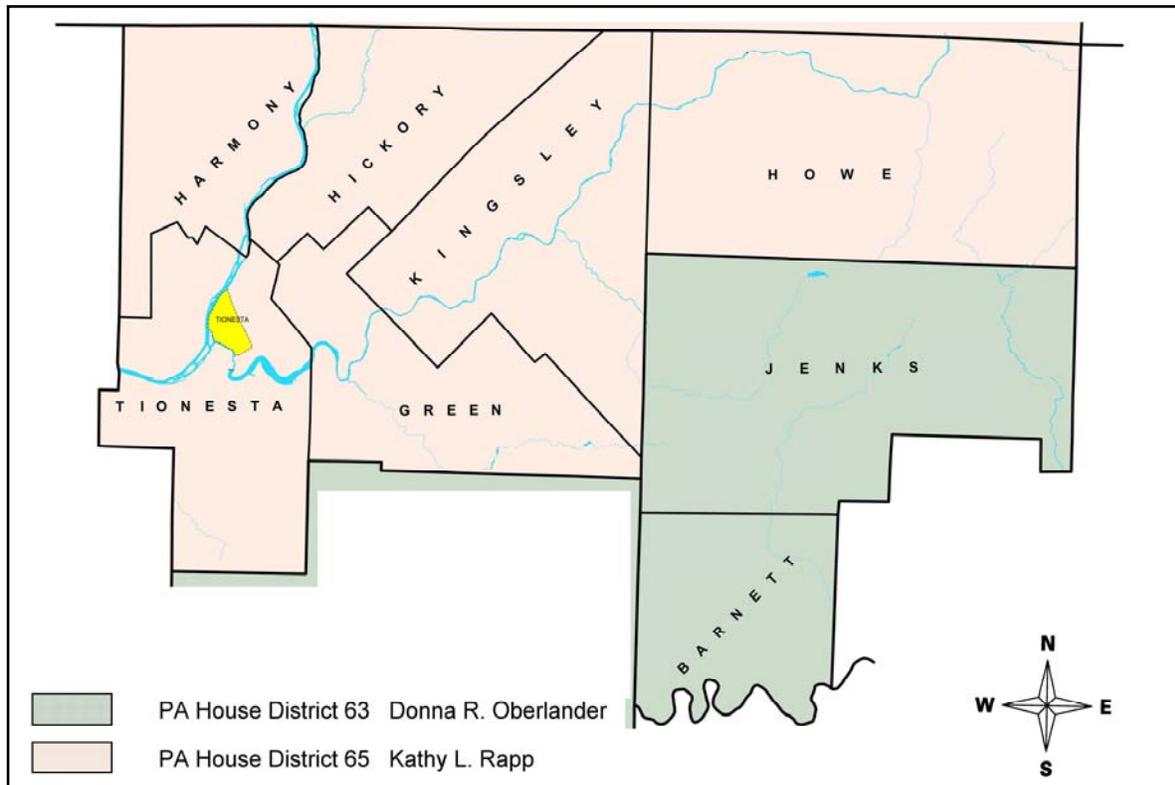


\* A listing of 2016 construction projects scheduled for this county is available in the appendix.

# County Overview

## Forest County

County population	7,518 (least populated in the District)
Median age of residents/household income	42 years/\$36,556
Land area	428 square miles with eight townships and one borough
Average vehicle miles traveled daily	151,757 miles
Maintenance building location	Elm Street, Tionesta
Staff and equipment	19 operators, nine plow trucks, three mechanics, and three stockpiles
Bridges	State-owned — 76 total; eight structurally deficient (10.5%) Locally-owned — 13 total; seven structurally deficient (53.8%)
County IRI	178 overall; 98 for NHS non-interstates
Average annual snowfall/snow lane miles	72 inches/405 miles

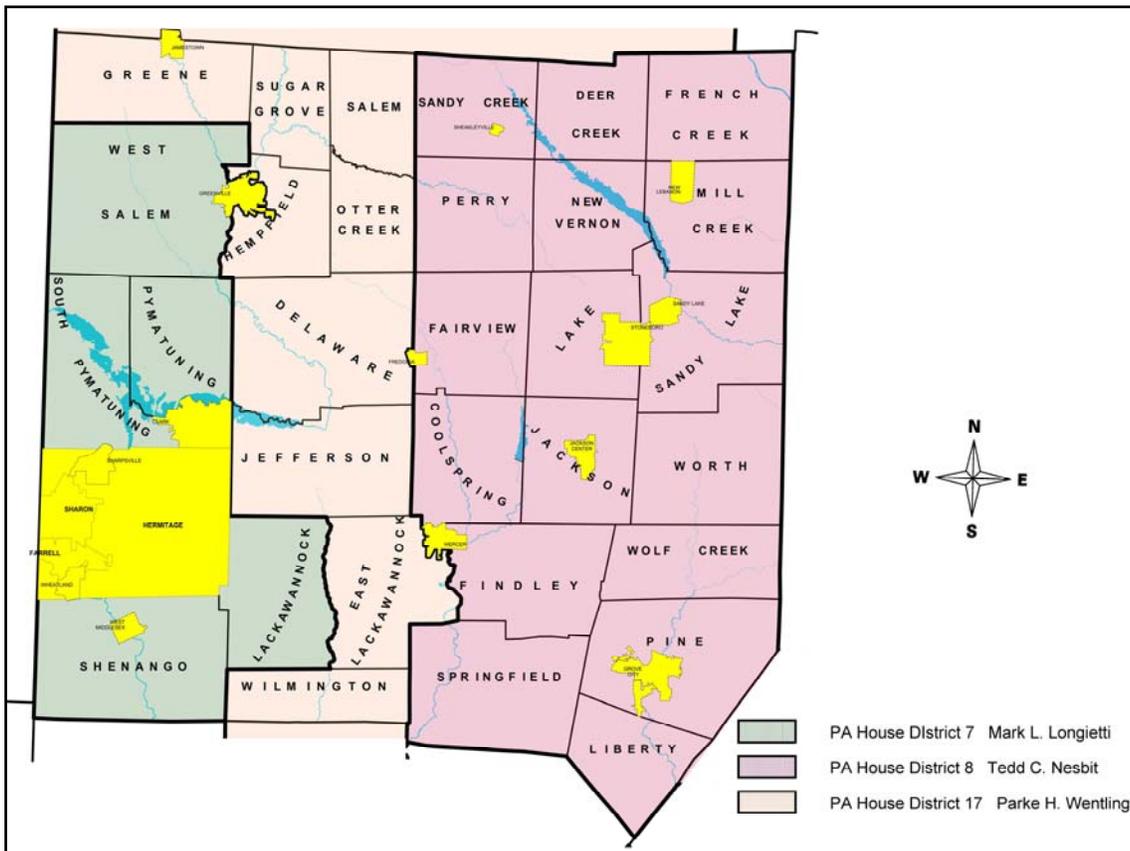


\* A listing of 2016 construction projects scheduled for this county is available in the appendix.

# County Overview

## Mercer County

County population	114,884
Median age of residents/household income	43 years/\$43,589
Land area	672.6 square miles with 31 townships, 14 boroughs, and three cities
Average vehicle miles traveled daily	2,822,025 miles
Maintenance building location	North Maple Street, Mercer
Staff and equipment	79 operators, 34 plow trucks, six mechanics, and five stockpiles
Bridges	State-owned — 423 total; 32 structurally deficient (7.6%) Locally-owned — 173 total; 41 structurally deficient (23.7%)
County IRI	107 overall; 38 for interstates
Average annual snowfall/snow lane miles	39 inches/1,765 miles

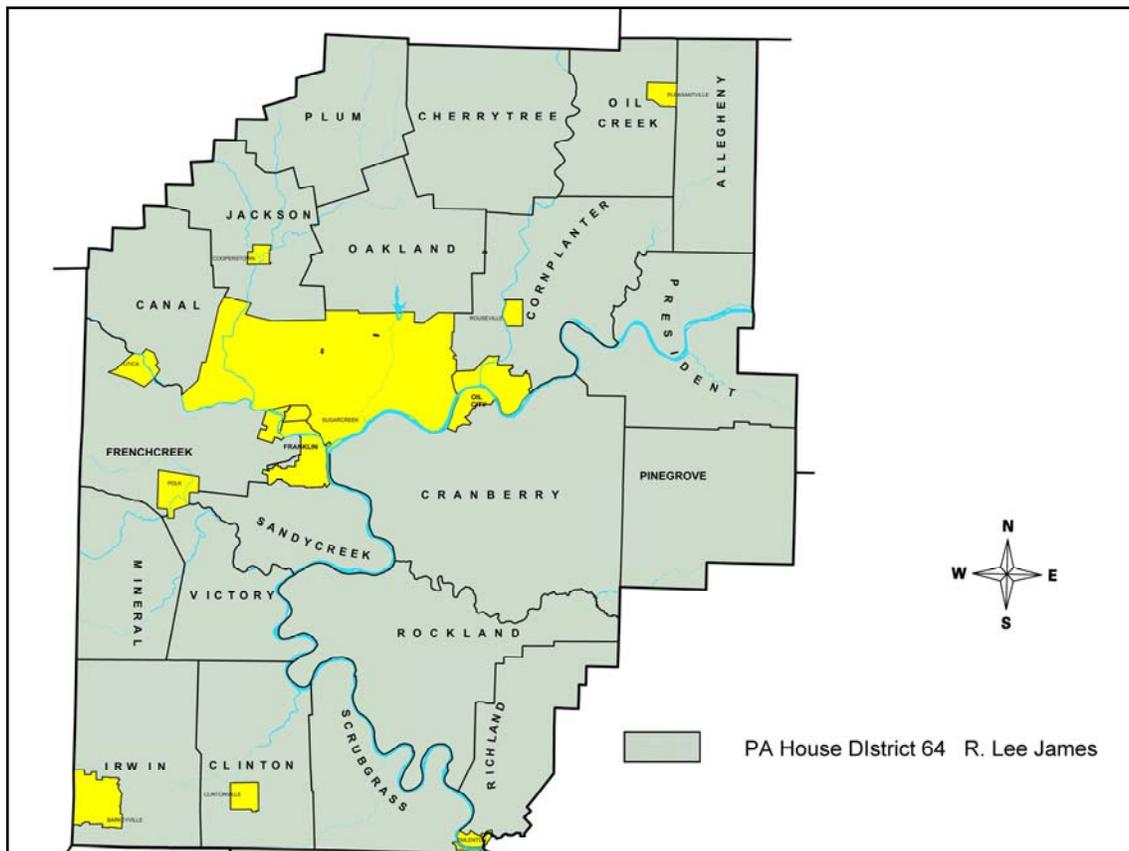


\* A listing of 2016 construction projects scheduled for this county is available in the appendix.

# County Overview

## Venango County

County population	53,529
Median age of residents/household income	45 years/\$41,977
Land area	574.28 square miles with 20 townships, nine boroughs, and two cities
Average vehicle miles traveled daily	1,388,717 miles
Maintenance building location	Pittsburgh Road, Sandycreek Township
Staff and equipment	51 operators, 25 plow trucks, four mechanics, and five stockpiles
Bridges	State-owned — 223 total; 26 structurally deficient (11.7%) Locally-owned — 68 total; 26 structurally deficient (38.2%)
County IRI	147 overall; 65 for interstates
Average annual snowfall/snow lane miles	75 inches/1,195 miles

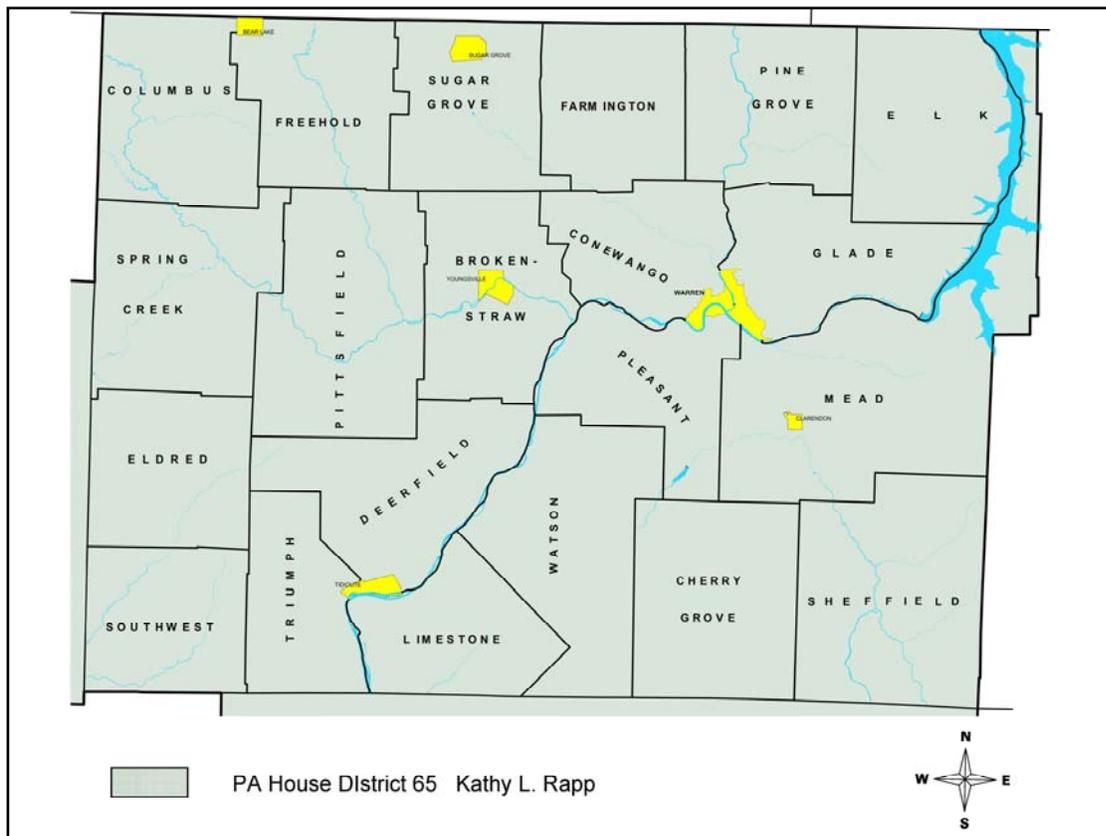


\* A listing of 2016 construction projects scheduled for this county is available in the appendix.

# County Overview

## Warren County

County population	40,703
Median age of residents/household income	46 years/\$43,764
Land area	884.14 square miles with 21 townships, five boroughs, and one city
Average vehicle miles traveled daily	802,640 miles
Maintenance building location	Route 6, Conewango Township
Staff and equipment	51 operators, 24 plow trucks, four mechanics, and six stockpiles
Bridges	State-owned — 266 total; 30 structurally deficient (11.3%) Locally-owned — 66 total; 27 structurally deficient (40.9%)
County IRI	177 overall; 91 for NHS non-interstates
Average annual snowfall/snow lane miles	108 inches/1,122 miles



\* A listing of 2016 construction projects scheduled for this county is available in the appendix.

# Building a Stronger Pennsylvania

**Act 89**, the state’s transportation funding plan, continues to yield benefits to Pennsylvania.

Projected Act 89 changes over five years include the creation of 68,000 jobs by 2019. Funding projections for that same year include \$2.3 billion available statewide for roads, bridges, public transportation, turnpike, and multimodal projects.

## What does that mean for District 1?

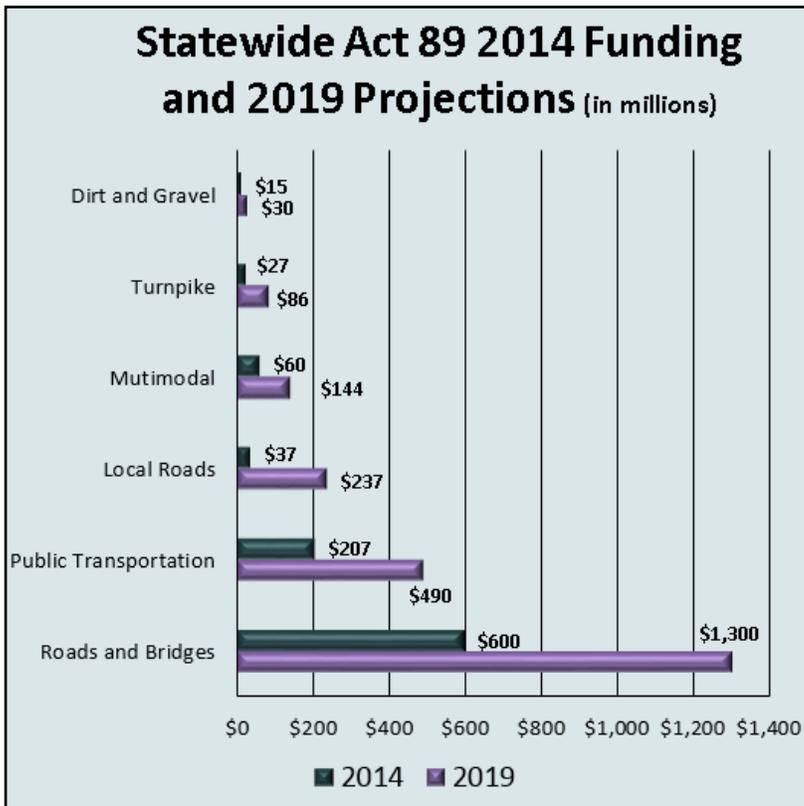
District 1 is on track to award contracts for **74 road and bridge projects** worth an estimated **\$203.2 million** in 2016.

Act 89 will enable District 1 to continue making significant progress in resurfacing and reconstructing roads, and rehabilitating or replacing structurally deficient bridges.

Funding for capital projects is prioritized by the District’s three planning partners:

- Erie Metropolitan Planning Organization (MPO) for Erie County;
- Shenango Valley Metropolitan Planning Organization (MPO) for Mercer County;
- Northwest Rural Planning Organization (RPO) for Crawford, Forest, Venango, and Warren counties, along with Clarion County in District 10.

In 2016, an estimated **\$53.2 million** in project contracts are expected to be awarded by the Erie MPO; **\$26.8 million** by Shenango Valley MPO; and **\$96.1 million** by the Northwest RPO. An estimated **\$27.1 million** in District 1 interstate projects are expected to be let by Central Office.



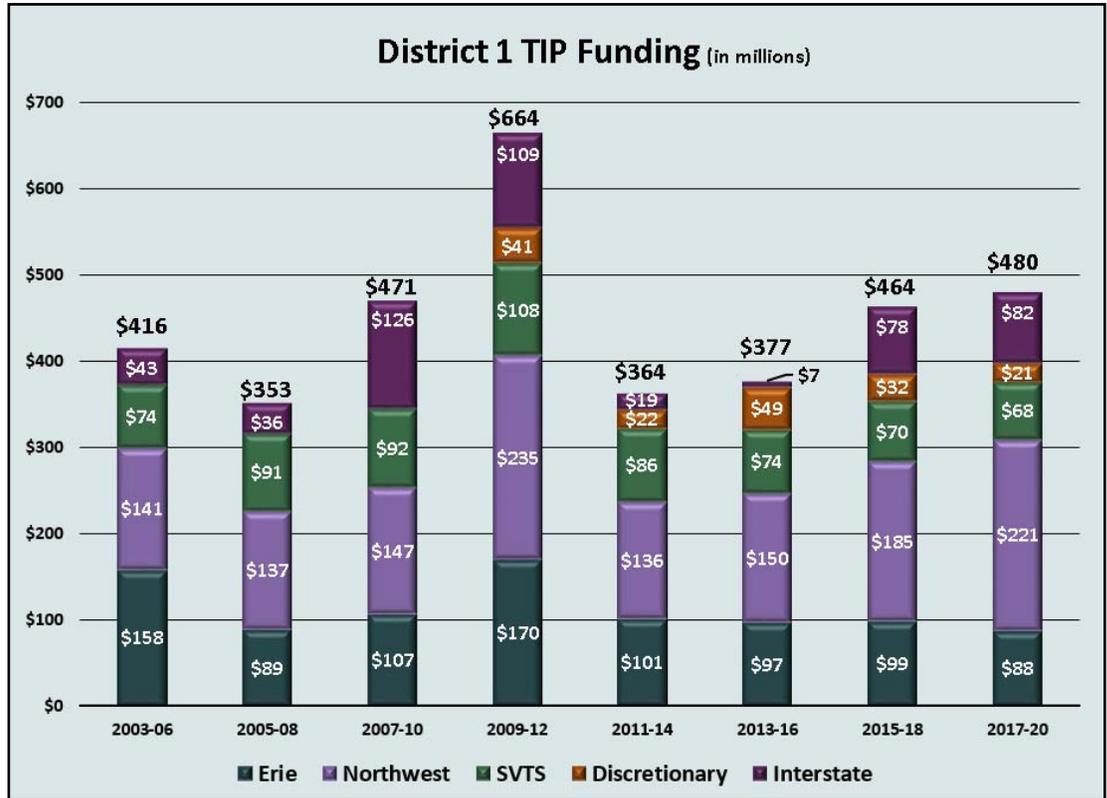
## District 1 Act 89 Funding (Some projects received other funding as well)

	Number of Projects	Act 89 Funding	Total Funding
2014	7	\$11,855,099	\$18,902,277
2015	7	\$10,232,520	\$10,931,327
<b>Total</b>	<b>14</b>	<b>\$22,087,619</b>	<b>\$29,833,604</b>

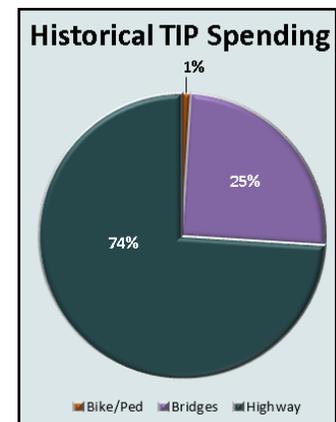
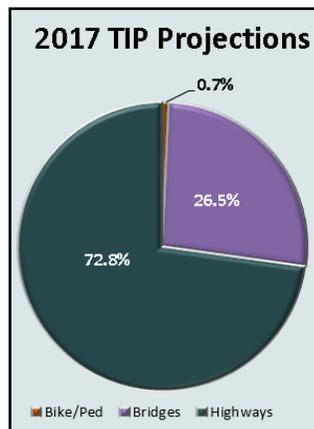
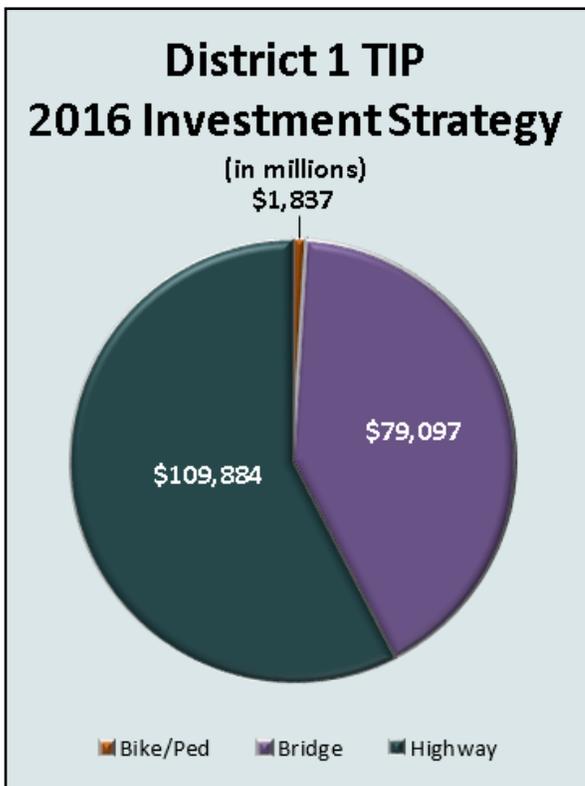
## How We Invest

Before major highway and bridge projects can be built, they first must be included on the Transportation Improvement Program (TIP), a four-year funding plan that is updated every two years.

Each of District 1's planning partners — the Erie MPO, Shenango Valley MPO and Northwest RPO — maintain the TIP for their respective service area and work with PennDOT to set funding priorities.



Source: Multi-modal Project Management System



Source: Multi-modal Project Management System

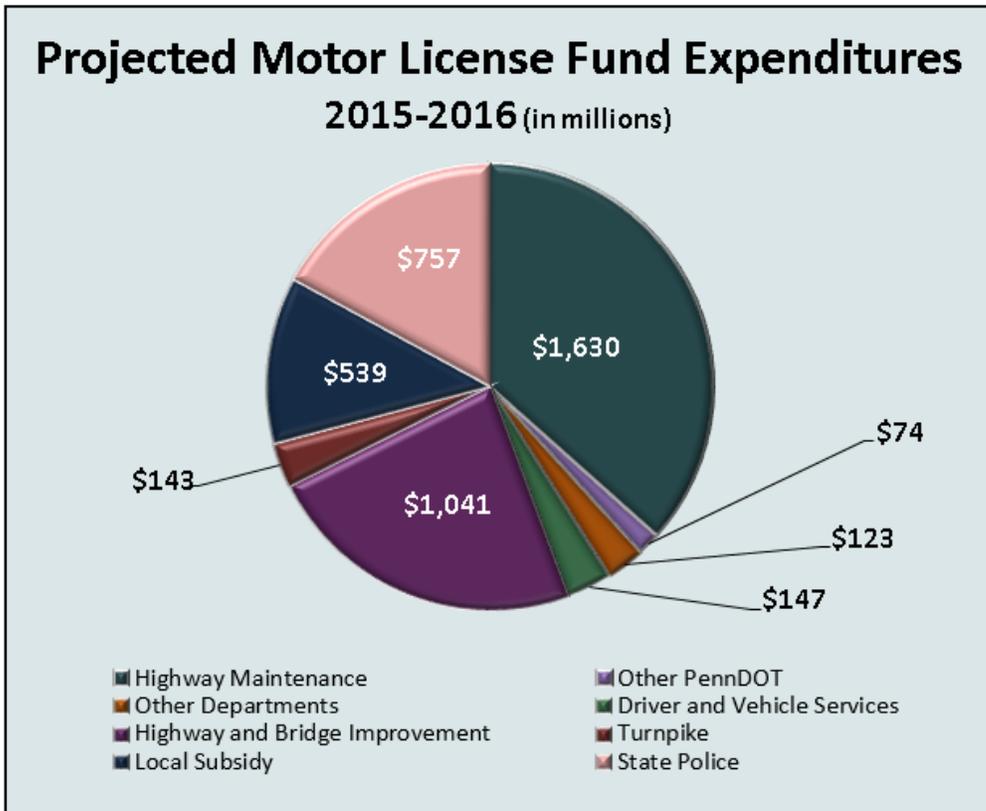
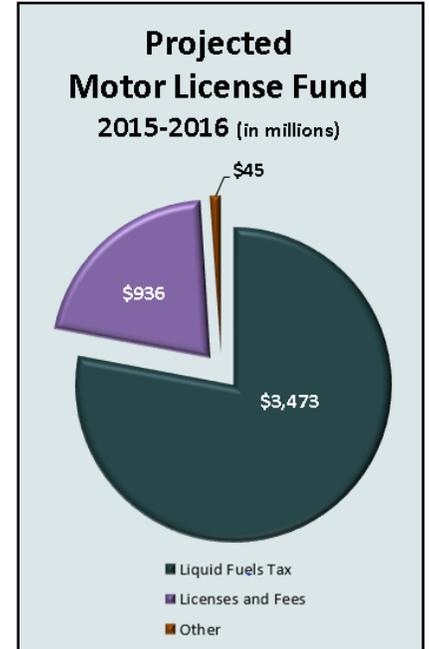
District 1's 2016 investment strategy (left) reflects an unusually high number of large bridge projects this year. The four-year-long investment strategy reflected in the 2017 update of the Transportation Improvement Program is more closely aligned with District's historical investment strategy (above). The strategy seeks to balance the needs of roads and bridges in planning efforts.

# How We Fund Our Highways

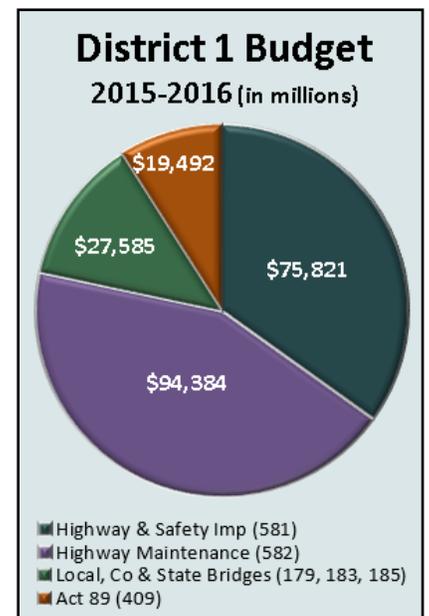
PennDOT receives financing through the Motor License Fund. The majority of the money in this fund is gathered through the liquid fuels tax. Money is also placed in the fund from licenses and fees.

Funds for capital projects — most large highway and bridge projects — are channeled through planning partners, the MPOs and RPOs.

Money for activities such as winter services, pothole patching, drainage, seal coat, some paving work and other maintenance work, is awarded by formula to individual Districts and County Maintenance Units.

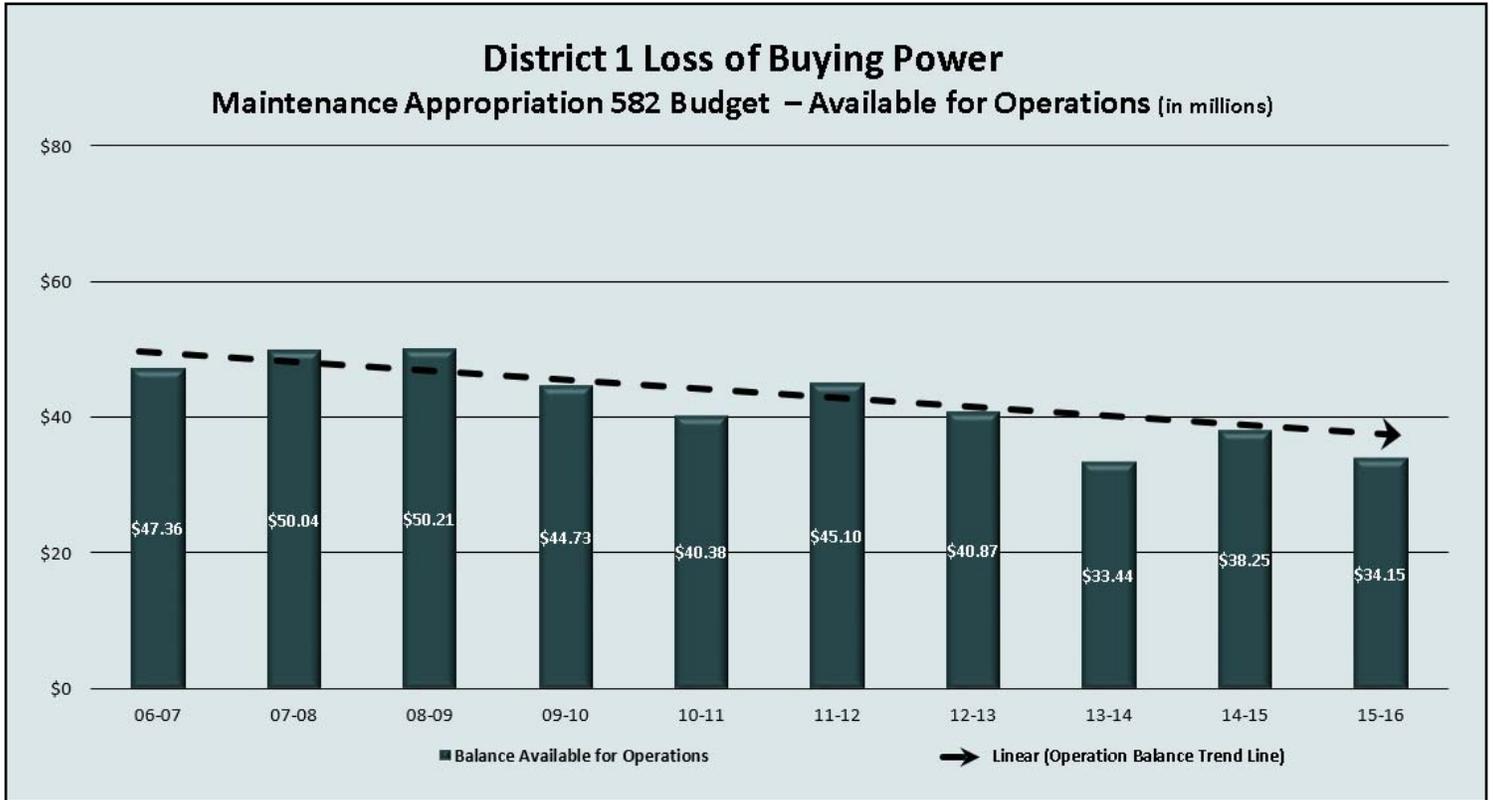


Source: Bureau of Fiscal Management



**While Act 89 provides a much needed infusion of funding, it will not resolve every issue and meet every need of the transportation system. District 1 must continue to employ innovative strategies and practices to stretch its available resources as it works to provide a safe and efficient transportation system to the public we serve.**

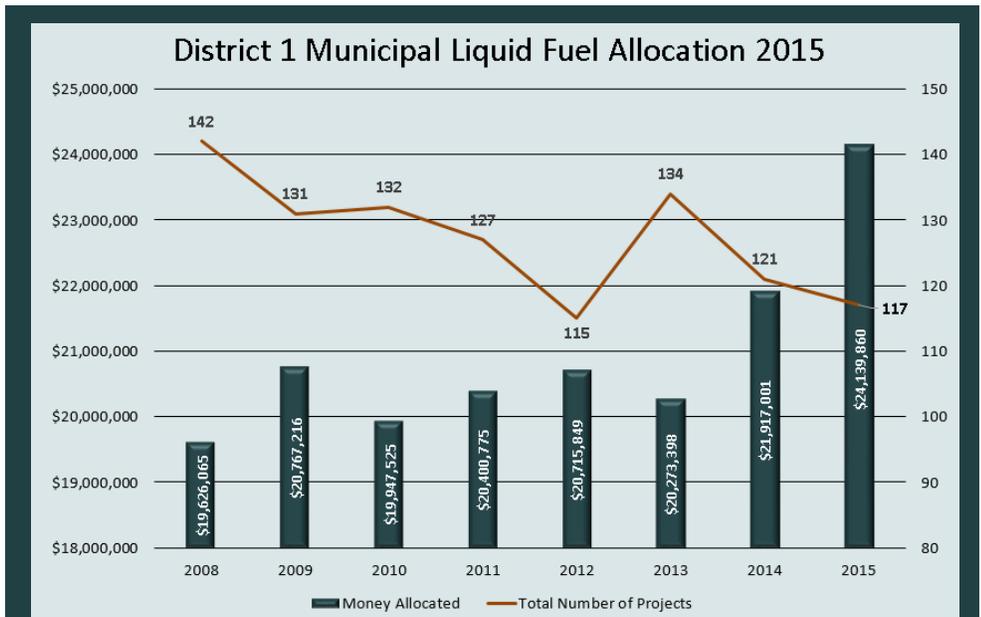
# Maintenance Allocation



Source: SAP

The table above illustrates the reduction in resources available to County Maintenance Units for operations — everything from snow plowing to summer maintenance and paving projects — as a result of inflation and higher costs eroding buying power.

Efforts are underway through PennDOT’s County Transformation Program to seek best practices and innovative measures that counties can develop and employ to help operate as efficiently as possible and help offset at least some loss of buying power.



As the table above shows, municipalities are in line to receive a significant increase in Liquid Fuel Allocations — the money that helps cities, counties, boroughs and townships pave, improve and maintain their streets. Act 89 is expected to push municipal allocations to \$237 million by 2019.

# Interstate Strategic Plan

District 1 is launching its largest construction effort since the interstate highways were built in northwestern Pennsylvania. That effort is the reconstruction and preservation of those interstates.

Included is the reconstruction of 3.5 miles of I-90 from the Ohio line to Route 6N in Springfield Township in Erie County, at an estimated cost of almost **\$40 million**.

It is part of a larger project to reconstruct the 18 westernmost miles of I-90 from the Ohio line to Route 832. The cost of that — an estimated **\$202.7 million**.

And that is only a start toward addressing the region's interstate highway needs.

The District recently compiled a list of needs for northwestern Pennsylvania's interstate highway system for the next 12 years. The estimated price tag for those needs rings up at about **\$1 billion**.

## 2016 Interstate Projects in District 1

- Resurfacing I-79 in Crawford County from near the Geneva/Cochranton exit to near the Conneautville/Saegertown exit
- Rehabilitation of the "Swamp Bridges" on I-79 over Conneaut Swamp in Crawford County
- Continuation of a two-year project to resurface 12.5 miles of I-90 in Erie County. Work this year will extend from the Parade Street exit to the Harborcreek exit
- Pavement restoration on 15 miles of I-80 in Mercer County from the Ohio state line to the Mercer exit



## 12-Year Priority Projects

1. Reconstruct the 18 westernmost miles of I-90 in Erie County
2. Restoration of 15 miles of I-80 from the Ohio/Pennsylvania line to the Mercer exit in Mercer County
3. Preservation of 6.5 miles of I-80 from the Mercer exit eastward to mile marker 12.5 in Mercer County
4. Preservation of eight miles of I-80 between the Clintonville exit and the Emlenton exit in Venango County
5. Preservation of 13 miles of I-79 between the Albion/Edinboro exit to the junction with I-90
6. Preservation of seven miles of I-80 between the Grove City/Sandy Lake exit and the Clintonville exit in Venango County
7. Preservation of 11 miles of I-90 in Erie County between the Harborcreek exit and the New York state line
8. Preservation of five miles of I-79 from the junction with I-90 and the West 12th Street exit in Erie County
9. Preservation of seven miles of I-86 from the New York line westward in Erie County
10. Preservation of the 4.3 miles of Interstate 376 in Mercer County

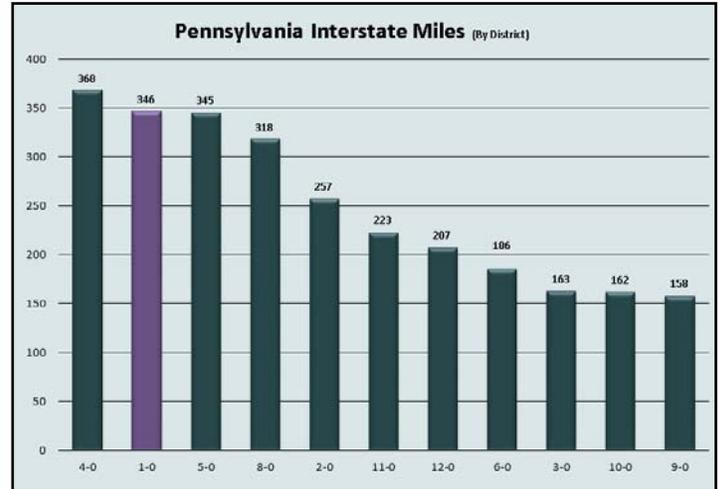
## Working Toward a Smooth Ride

Pennsylvania ranks fifth in the nation with more than **39,799** linear miles of state-owned highways. Only North Carolina, Texas, Virginia, and South Carolina own more roadways. Pennsylvania is the only one of those top five states that has a large number of freeze and thaw cycles.

The highway system is divided into the following four categories:

- Interstates;
- National Highway System (NHS);
- Non-NHS Highways with Average Daily Traffic (ADT) of more than 2,000 vehicles per day;
- Non-NHS Highways with ADT less than 2,000 vehicles.

PennDOT maintains **1,856** linear miles of Interstates, **5,540** linear miles of NHS, and **32,403** linear miles of secondary or non-NHS roadways



\* As measured in Center Lane Miles

categorized by ADT numbers.

Pennsylvania's Interstates carry **24 percent** of all the state's traffic.

## Pavement Smoothness

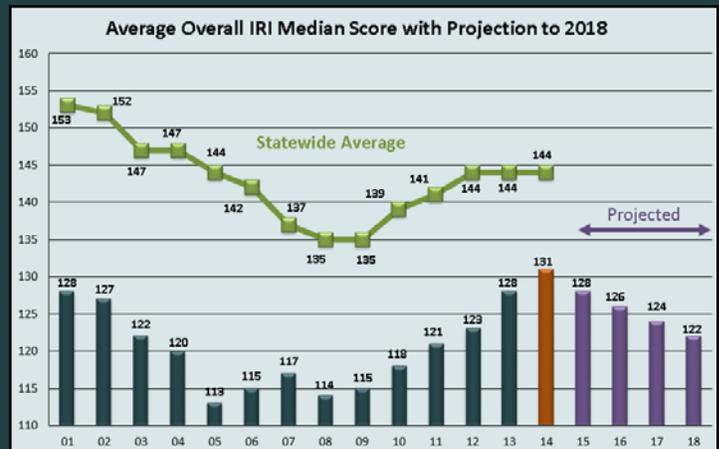
PennDOT and the U.S. Federal Highway Administration measure road smoothness by the International Roughness Index (IRI).

IRI is obtained by using lasers to measure bumps and dips in the roadways. It has four levels of rating: Excellent (<60), Good (60-94), Fair (95-170) and Poor (>171). The lower the number — the smoother the road.

In 1998, Pennsylvania roads measured 168 on the IRI scale. The District 1 score was 148.

After an increase in the liquid fuels tax in 1998, additional funds were available to improve roadways. This helped improve the IRI scores. By 2005, the state IRI number fell to 144 and the District 1 number to 113.

In more recent years, road surface quality has suffered as funding became restricted and District 1 directed as much of its resources as possible to replacing or rehabilitating



Source: 2014 State of the Pavement Smoothness Reports

structurally deficient bridges.

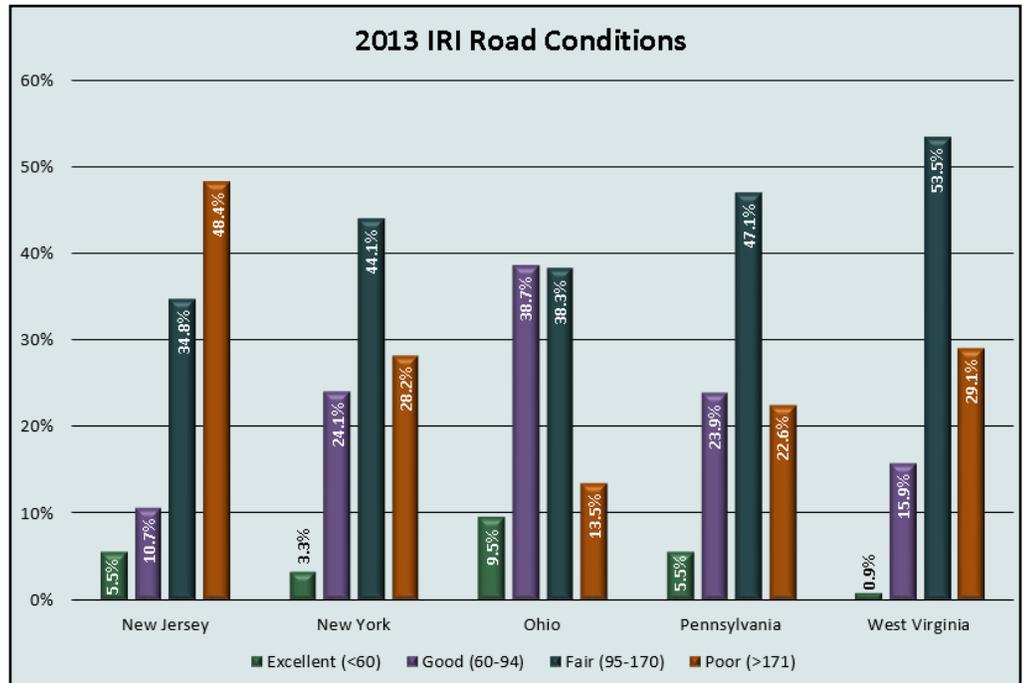
Funding through Act 89 has enabled the District not only to resurface roads, but to begin undertaking cyclic reconstruction work that is required to address road base repairs, drainage and other subsurface issues to help improve road smoothness.

## Comparing IRI Ratings

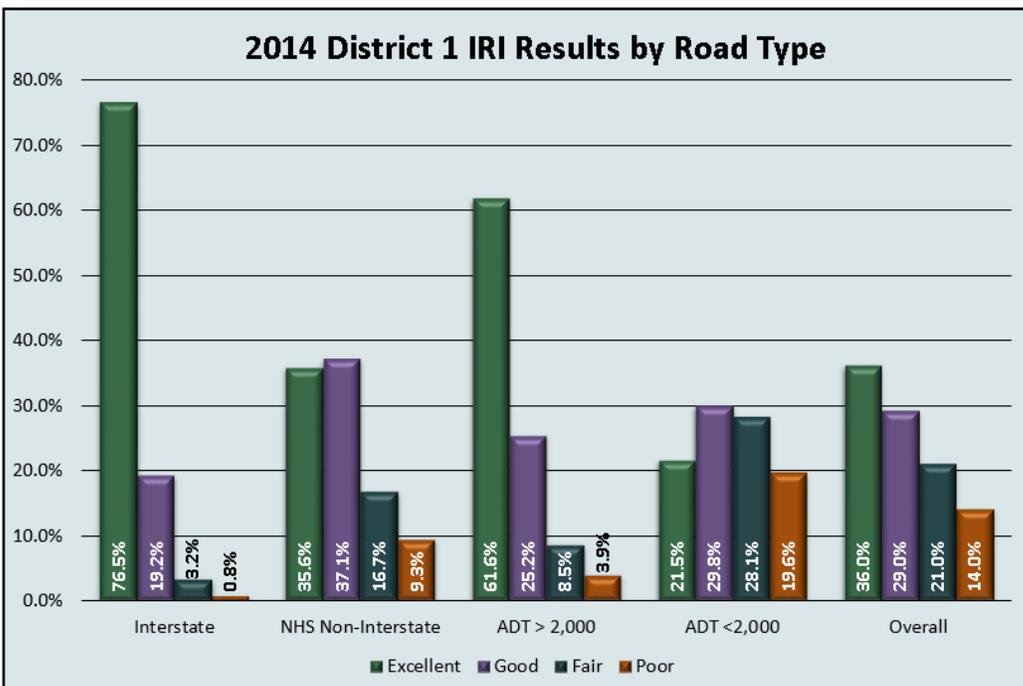
Pennsylvania maintains more miles of state roads than West Virginia, more than twice as many as Ohio, and almost as many as all the New England states, New York and New Jersey combined.

While other states support roads with tolling, bond financing and funding from an assortment of taxes, Pennsylvania has relied upon the Motor License Fund, and has operated mostly on a pay-as-you-go basis.

Still, statistics show that Pennsylvania's highway system IRI is very competitive with those of neighboring states.



Source: 2015 State Transportation Statistics Report, Bureau of Transportation Statistics, U.S. Dept. of Transportation



Source: 2014 State of the Pavement Smoothness Reports

**District 1 had the overall smoothest roads in the state for 13 of the last 16 years for which data is available as measured by the IRI.**

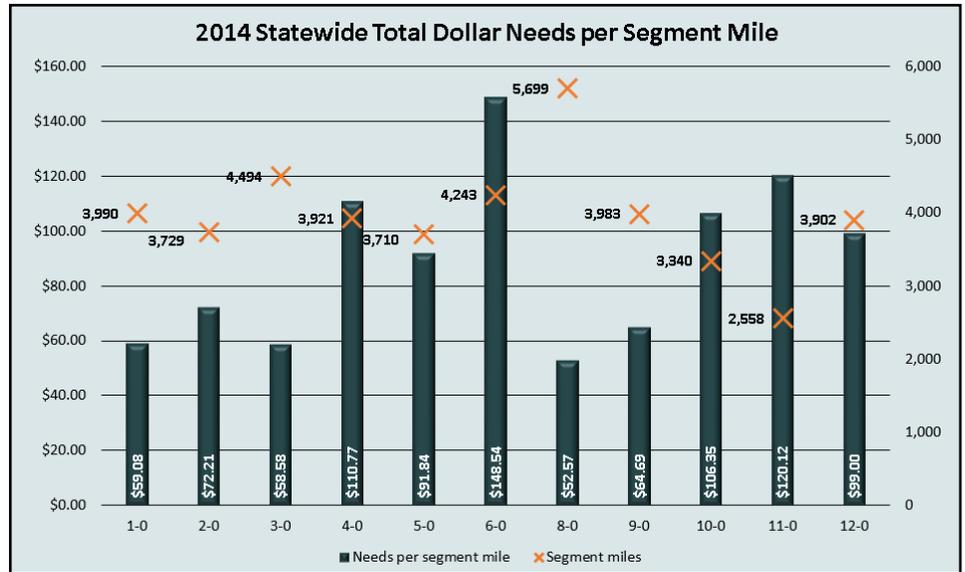
Total Miles of Roadway Owned by States	
Texas	80,323
North Carolina	79,546
Virginia	58,411
South Carolina	41,396
<b>Pennsylvania</b>	<b>39,799</b>
West Virginia	34,407
Ohio	19,266
New York	15,034
New Jersey	2,341

## Managing Resources

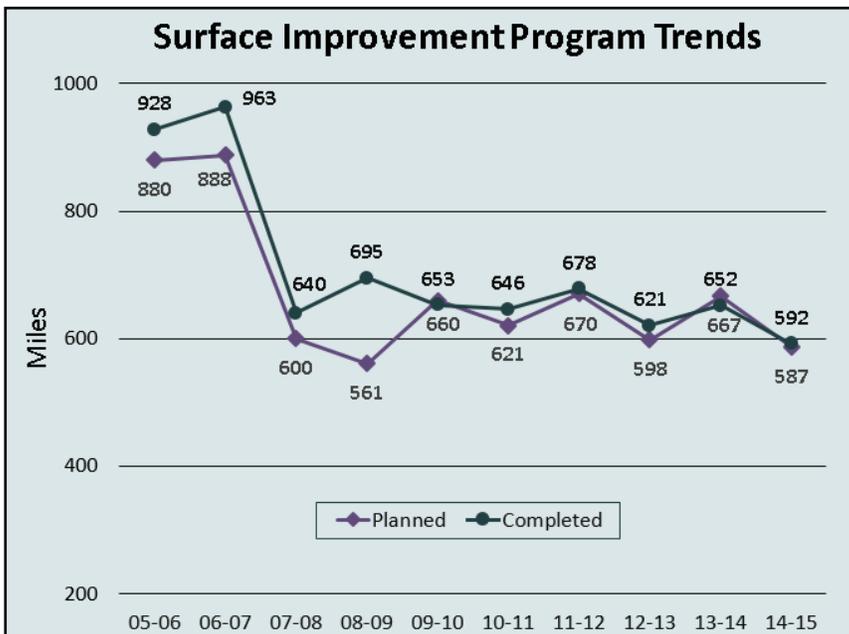
District 1 historically has had one of the **lowest dollar needs per segment mile** in the state, an indicator of how well the District manages resources.

It has become increasingly difficult for the District to maintain this level of dollar needs per segment mile because of continuously increasing costs and the erosion of buying power of the funds the District receives.

Incentive funding may be a way to mitigate this loss of buying power by providing a path that could promote innovation and development of best practices. Performance incentives may be used to lift even “high fliers” to new levels.



Source: 2014 State of Maintenance Backlog Report



The **Surface Improvement Program (SIP)** in District 1 had a significant drop in the past decade due to the rising costs of road construction and resurfacing outpacing increases in the funds to pay for the work.

District 1 will continue to use innovative strategies to stretch valuable resources and increase surface improvement miles.

Two examples of our initiatives include:

- The use of **Recycled Asphalt Pavement** has become a key component of our strategy.
- District 1 has established a **Pavement Quality Task Force** to seek ways to produce more durable pavements. The goal is pavement that last at least 10 years. The group has developed asphalt mix requirements, leading to many firsts for PennDOT, including the use of warm mix in a stone matrix asphalt.

### Total SIP Miles — 592

Seal Coat — 405 Miles  
RAP Paving — 42 Miles  
In-House Paving — 67 Miles  
Miscellaneous — 78 Miles

# Leading the Way to Cost Savings

District 1 pioneered and refined the process of using **Recycled Asphalt Pavement (RAP)** to support its Surface Improvement Program. The District remains PennDOT's leader in RAP.

Recycled Asphalt Pavement is a process that gathers asphalt pavement millings from resurfacing projects, mixes them with cold oil and applies the mixture to low-volume roads and road shoulders at a **fraction of the cost** of hot-mix, virgin asphalt.

The threshold for RAP usage has been **5,000** Average Daily Travel (ADT) with less than **10 percent** truck traffic.

Innovative techniques — such as cold-in-place recycling, RAP base courses, and shoulder construction — have increased the applicability of RAP and expanded its use to some higher volume roadways.

A next step, now under study, would mix the asphalt millings with Portland cement to strengthen the RAP pavement and help it resist rutting and withstand winter freeze-thaw cycles.

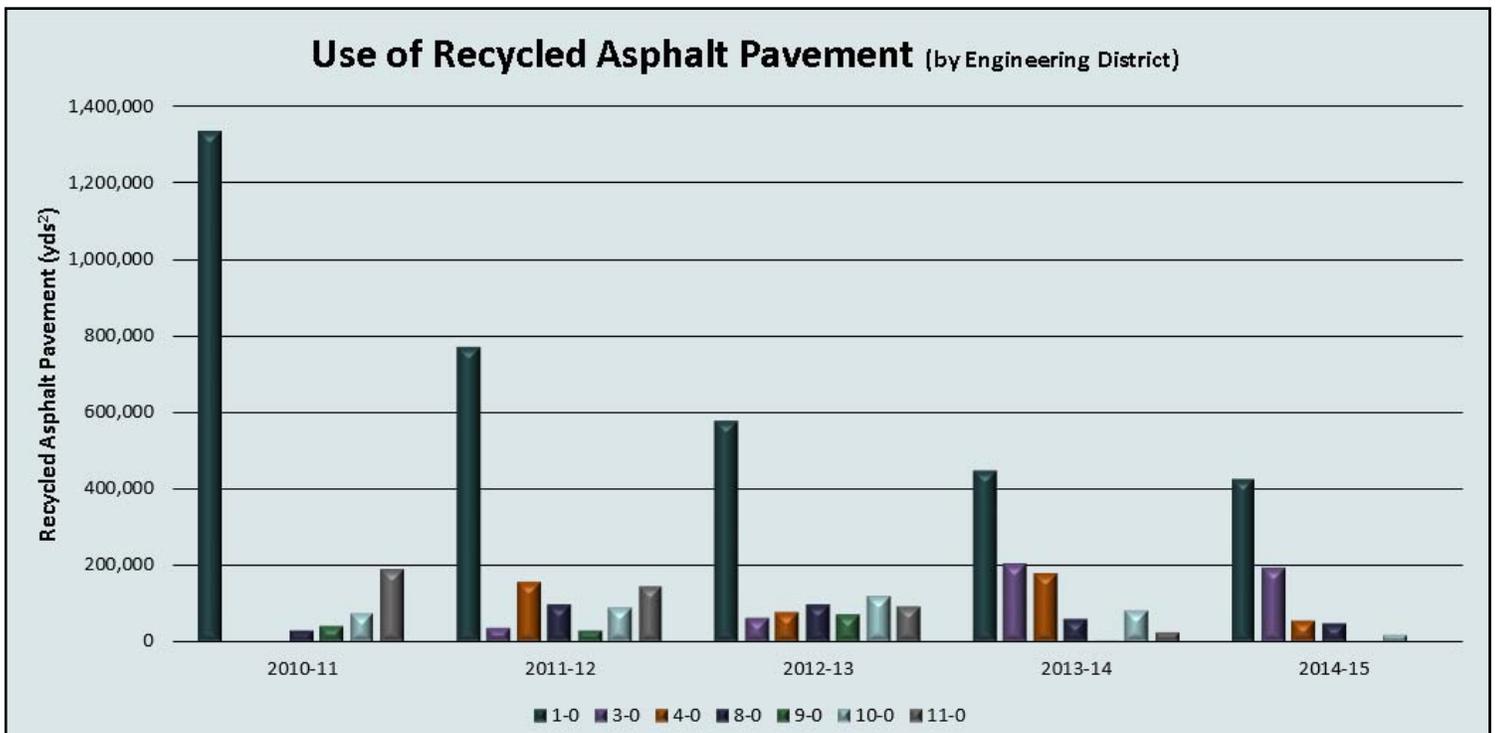
**In 2015, District 1 completed 50.73 RAP miles, using 74,788 tons of millings at a cost of \$31.55 per ton.**

**\$2.66M**

District 1 savings in 2015 by using RAP instead of virgin hot mix asphalt

**\$21.8M**

District 1 savings from 2007 to 2015 by using RAP instead of hot mix asphalt



Source: PennDOT Plant Maintenance Report

## Maintenance Unit Bridges

District 1 Maintenance units use winter dark hours to precast channel beams, hybrid boxes and inlet boxes for county-based bridge crews to use on their projects during the summer construction season.

**District 1 has been promoting the use of its precast expertise to local governments as an economical way of replacing their structurally deficient bridges and culverts.**

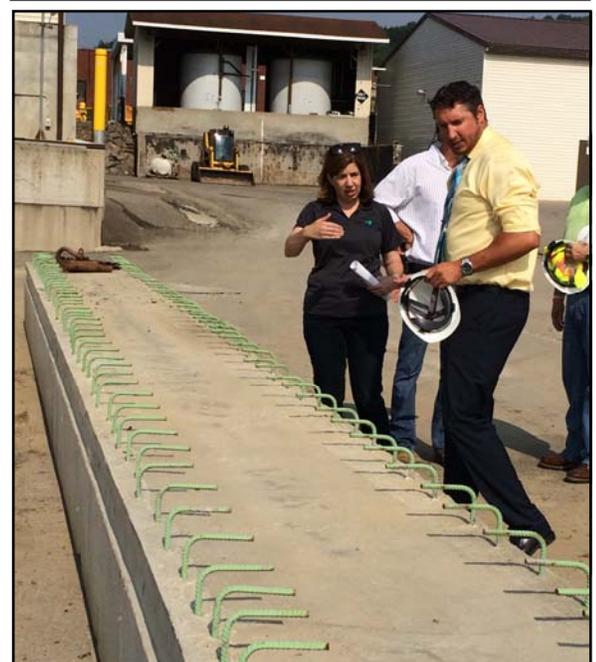
While District 1 maintenance forces have long precast beams for their own use, and even precast some for other PennDOT districts, this year will mark the first time the District has precast channel beams for a municipal partner.

**Sparta Township in Crawford County asked to receive PennDOT channel beams for one of its bridge projects.** Employees in PennDOT's Crawford County Maintenance crew precast them this winter during dark hours when they are not busy clearing ice and snow.

Particular to this project, the Crawford County bridge team agreed to construct the bridge for the township. PennDOT offered engineering and the major portion of construction under a reimbursement agreement that uses state and federal funding.

Several more municipalities have expressed interest in taking advantage of this process over the next few years.

As for state-owned bridges, the District's precast program was reduced somewhat this year due to budgetary limitations. The county maintenance bridge crews plan to precast two box culverts, two sets of channel beams and dozens of inlet boxes to support the 2016 bridge program.



Since 2010, District 1 has used the Maintenance Unit precast program to help complete:

**63 bridge replacements**

**125 preservation projects**

# Little Bridges, Big Savings

Along with being an effective usage of dark hours, the District 1 **Maintenance Unit Bridge Precast Program** is helping stretch limited resources and reduce the number of structurally deficient bridges.

PennDOT District 1 county maintenance crews pre-cast concrete channel beams, wing walls, and other bridge components during the winter for installation on small bridge projects during the summer.

Maintenance Bridge Unit savings are based on the cost of contracts for similar work. The Department further economizes by choosing projects based on complexity and traffic volume.

	Bridge Replacements	Preservation Projects
2010	10	24
2011	14	23
2012	13	16
2013	10	12
2014	9	21
2015	7	29

## Department Force versus Vendors: Channel Beams

- ◆ Vendor Cost — \$278/square foot
- ◆ Department Force Cost — \$226/square foot
- ◆ Comparative Savings — \$52/square foot

**2015 Comparative Cost Savings: \$302,500**

District 1's innovative **Bonded Overlay** program is cost-effective and expected to add at least **50 years** of life to a small bridge.

A bonded overlay involves milling off the existing bituminous pavement from the bridge deck and then removing deteriorated concrete. A new concrete overlay is placed directly on top of an existing concrete pavement. The overlay bonds to the existing concrete to create a solid slab. Crews then add a waterproof membrane and repave the bridge deck.

Bonded overlays increase load capacity of a bridge by 20 to 40 percent by replacing layers of asphalt with structural concrete.

The District has placed bonded overlays on **20 bridges**, and is looking at using the method on 100 more, including **six in 2016**.

Most of the bonded overlays in District 1 are being done by Department Force bridge crews



from county maintenance units.

A bonded overlay costs between \$10,000 and \$50,000. If a bridge was allowed to deteriorate until it needed fully replaced, the cost would be between \$500,000 and \$1.5 million.

# Structurally Deficient Bridges

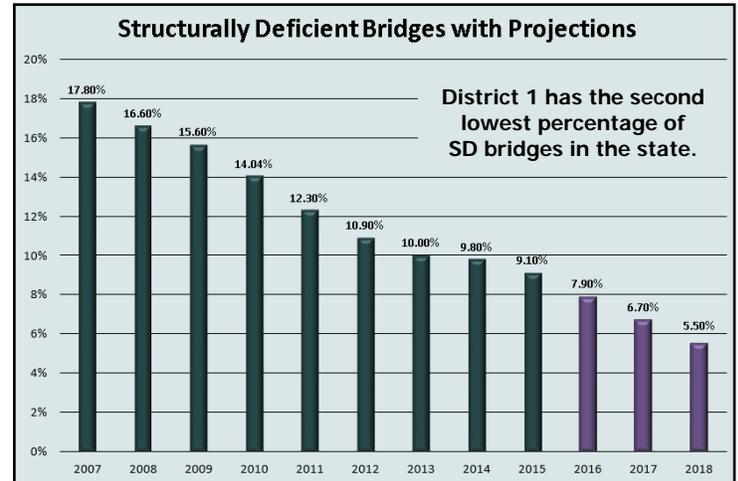
Pennsylvania ranks ninth in the country for the number of state-owned bridges with **25,390**.

The average age of Pennsylvania bridges is **54 years** versus the national average of **43 years**. With modern construction techniques and materials, PennDOT is now building new bridges that are expected to last 100 years, but the challenge is replacing aging bridges fast enough.

About **300** more bridges statewide fall into the Structurally Deficient (SD) category every year.

Federal law requires all bridges 20 feet or longer to be inspected at least every two years. SD bridges are typically inspected more often, require significant maintenance and repairs, and eventually need to be rehabilitated or replaced.

In District 1, the health of state-owned bridges is relatively strong. But the local bridge system is in need of support. The number of PennDOT-owned SD bridges in District 1 remains below the statewide rate of **14.9 percent**, while locally-owned bridges in five of the six counties in District 1 exceed the local-bridge statewide average of **33.68 percent**.



\*As of February 16, 2016

Through Department Force maintenance, bridge waterproofing and other projects, District 1 **replaced or rehabilitated 16 SD bridges in 2015**. The number of SD bridges in the District dropped to 188.

The District has waterproofed 958 of 1,510 bridges (68 percent, up from 63.1 percent in 2014).

By waterproofing newer bridges, their service life is extended by 20 to 25 years.

	Number of State-Owned Bridges	Percentage SD
District 1	2064	9.1%
District 2	2185	17.5%
District 3	2890	4.3%
District 4	2094	19.6%
District 5	2147	17.5%
District 6	2761	16.5%
District 8	3393	14.5%
District 9	2084	11.4%
District 10	1623	20.4%
District 11	1802	17.7%
District 12	2343	20.1%

## Rating our Bridges

**Structurally Deficient (SD)** — A SD rating does not mean a bridge is unsafe. It means the bridge has deterioration to one or more of its major components — the bridge deck, superstructure, and substructure. Although deterioration is present, a SD bridge is safe. Weight restrictions may be posted if the bridge can only carry certain loads safely.

**Functionally Obsolete** — This means the bridge is no longer, by design, functionally adequate for its task. It does not indicate anything of a structural nature. A bridge may receive this designation if it does not have enough lanes to accommodate traffic flow, space for emergency shoulders, or clearance for oversized vehicles.

**Bridge Closure** — A bridge will be closed if it is deemed to be unsafe for travel.

# Upcoming & Ongoing Bridge Work

Plans for the 2016 construction season call for work on 49 bridges, including 16 replacements, 14 rehabilitations, one removal and 18 preservation projects.

Among the replacement projects scheduled for 2016 is **Hunter Station Bridge in Forest County**. The \$30 million project is expected to extend into 2017.

Other notable projects to be done in 2016 include **Smock Bridge in Crawford County** and the **Wyattville Bridge in Venango County**.

The year's construction plans also include the first of its kind dismantling, galvanizing and reassembly of a truss bridge — slated to happen at the **Sugarcreek Drive Truss Bridge in Venango County**.

Removal of the **Sanford Road Bridge over I-90 in Erie County** is also scheduled for 2016.

Work also continues on the **Mead Avenue Bridge in Crawford County** and the **Center Street Bridge in Venango County** — two projects started in 2015.

The **Rapid Bridge Replacement (RBR) Project** will reach District 1 in 2016. Nine bridges will be replaced through a Public Private Partnership program with Plenary Walsh Keystone Partners. In all, 24 bridges in District 1 are included in the overall program to replace 558 small, structurally deficient bridges statewide in three years.

## District 1 RBR Bridges in 2016

<b>Crawford</b>	Route 6, two bridges Route 408, two bridges Mosiertown Road (Route 4011)
<b>Forest</b>	Route 666
<b>Mercer</b>	Route 318
<b>Warren</b>	Route 27 Spring Creek Road (Route 3010)

\* As of February 7, 2016

## Mead Avenue Bridge Replacement Project

Built over French Creek, the old Mead Avenue Bridge was two historic truss bridges in one.

It was closed in 2007 due to deterioration. The old bridges were purchased by a private buyer

as part of a preservation project.

Work on a new, pre-stressed concrete bridge started in 2015 with an expected opening date in 2016. The project costs an estimated \$6.9 million.



# Bridges to the Region's Past

Sometimes old bridges are more than just old bridges.

Sometimes they are part of the historic legacy of a region.

Northwest Pennsylvania has a wealth of historic bridges and District 1 makes efforts to preserve as many of them as possible.

Most recently, two bridges in District 1 — **Carlton Truss Bridge in Mercer County** and **Mead Avenue Bridge in Crawford County** — were purchased by a private party for disassembly, preservation, and relocation.

Also, the **Quaker Bridge in Mercer County** was preserved and acquired by a private agency.

Historic bridges that cannot be preserved are photographed and their significance documented before they are replaced.

District 1 is scheduled to rehabilitate several historic



## New Roof on Covered Bridge

The Barney Road Bridge on Route 3003 over Marsh Run in Conneaut Township, Erie County is the last remaining state-owned covered bridge in northwestern Pennsylvania. A steel roof was added to replace cedar shakes that were damaged by vandals and the bridge was supported by steel plating.

bridges during the 2016 construction season, including the following:

- Center Street Bridge, Oil City;

- Sugarcreek Drive Truss Bridge, Sugarcreek Borough;
- Marsh Road Truss Bridge, Fairfield Township.

## Remnants of Truss Bridges Sold

Three cranes were used to move the formerly state-owned Carlton Truss Bridge (right) in Mercer County off its piers. It was then



disassembled for preservation. The Mead Avenue Bridge (left), which was owned by Crawford County, was disassembled by contractors on site. The two historic bridges were purchased by a private party. They were disassembled for preservation work and will be relocated to other sites.



## Planning for the Future

It takes partnerships to build and maintain a transportation network, and PennDOT District 1 is striving to work more closely and effectively with its partners in northwestern Pennsylvania.

The district has been involved in such activities as a study of transportation needs on **Erie's Bayfront** and development along the busy **Route 322 corridor** in Crawford County.

The district's studies have looked at improvements as specific as **Depot Road in Harborcreek Township** to as broad as long-range exploration of the feasibility of an **intermodal railroad terminal in Erie County**.

Past studies have laid the basis for improvements on the **Route 19 corridor in Erie County** (including the Waterford roundabout) and on **State Street in Sharon**.

District 1 works with metropolitan planning organizations in Erie County and Mercer County and a rural planning organization that serves Crawford, Venango, Forest and Warren counties, along with Clarion County from District 10.

Community development organizations, transit providers, airports, the Port of Erie, chambers of commerce, municipalities, counties, business groups, advocacy groups, environmental



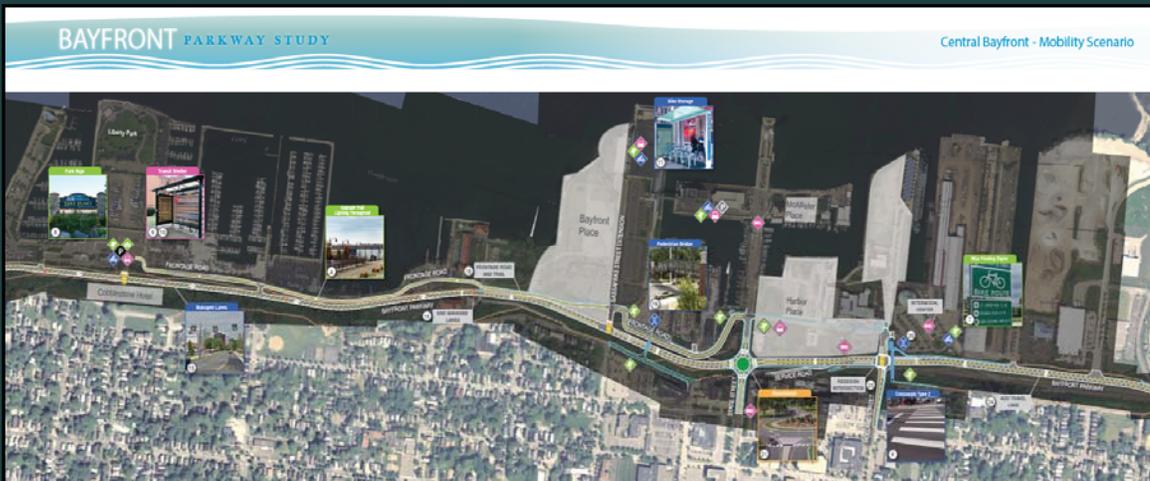
The Route 322 corridor in Vernon Township — the busiest road in Crawford County — was the focus of a recent District 1 highway corridor planning study, which examined potential commercial development and road improvements to accommodate it.

organizations and regulatory agencies — District 1 works with all of them as it builds and maintains the northwest region's transportation network.

Now, to enhance its ability to work with partners, District 1 has added a **Transportation Planning Specialist Supervisor** position.

This position is intended to serve as the primary administrator of planning and programming functions and act as the primary liaison with the District's regional planning partners.

This is a new position for PennDOT, and a position that District 1 sees as essential toward its intention to work with partners toward providing the best possible transportation network for the region.



Development has blossomed on Erie's Bayfront, and more is on the way. District 1 funded a study on the impact development will have on the transportation system, and how to plan a corridor that will meet the community's needs.

## Winter Services

Whether the winter is mild or harsh, District 1 focuses on controlling costs and managing winter services. During storms, the primary focus is on the interstates and major routes. **The goal is to provide safe and passable roads.** Roads will not be free of ice and snow while precipitation is falling.



District 1 uses salt brine, road salt and anti-skid material to treat the roadways. Salt and salt brine are used on the roadways with a higher traffic volume and anti-skid material on roads with a lower traffic volume.

The cost of salt rose for the second consecutive year with **increases from 11 to 20.8 percent.** Prices are set for each county individually and vary from \$65.53 to \$73.27 a ton.

During the winter of 2014-2015, District 1 used **82,500 tons of salt.**

District 1 has **366 operators, 31 mechanics, 167 plow trucks,** 40 loaders, 31 stockpiles, nine anti-icing trucks, five graders and three tow plows to maintain **8,466 snow lane miles.**

The maintenance crews work 12-hour shifts during winter-weather events to keep the equipment running 24 hours a day.

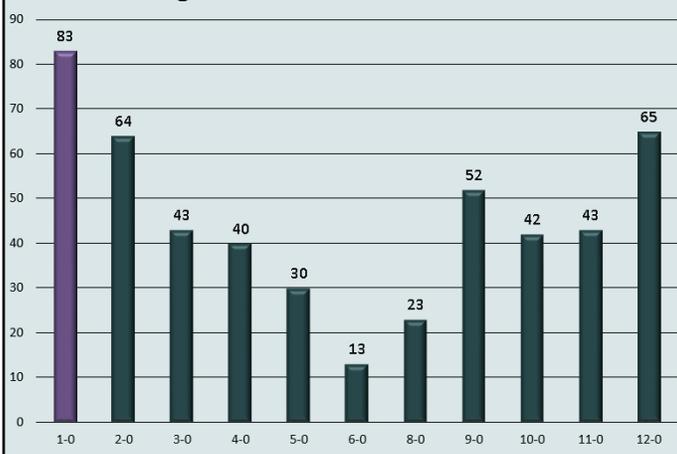
It is needed for District 1's winters, which include an average snowfall of 104 inches in Erie County.

Snowbelt communities see even more. In the past 20 years, **Edinboro has averaged 156 inches of snow a winter,** according to Edinboro University.

### Maintenance Total Budget and Winter Costs

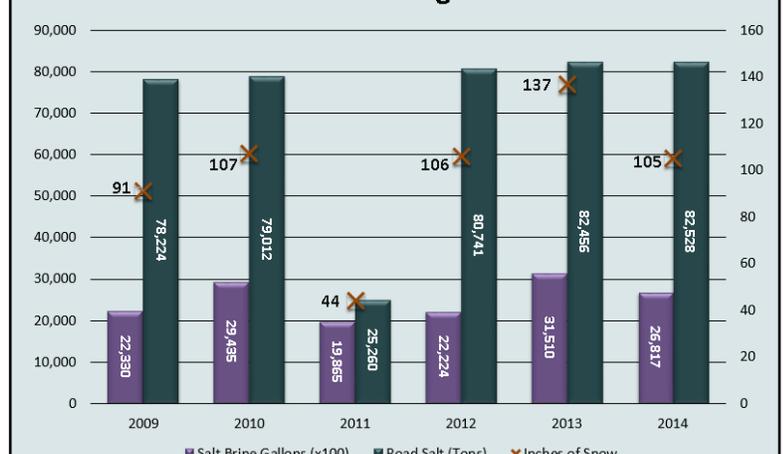
<b>Crawford</b>	\$19,629,661	\$3,749,401
<b>Erie</b>	\$23,019,209	\$5,952,490
<b>Forest</b>	\$5,024,218	\$875,979
<b>Mercer</b>	\$18,633,429	\$4,128,692
<b>Venango</b>	\$16,780,221	\$2,889,799
<b>Warren</b>	\$12,986,851	\$2,532,924

Average Annual Snowfall in Inches (by District)



Source: PennDOT Winter Service Guide

Materials used during last six winters



Source: Plant Maintenance

## Summer Services

PennDOT's County Maintenance employees are the most visible faces of the Department.

County maintenance managers and field crews plan the paving, patching, cleaning and other tasks on the region's roads and bridges.

They are also trained to react to changing weather conditions, like winter storms that bring ice and snow, as well as floods, wind damage, and other disasters.

Individual County Maintenance Offices operate independently from each other on most routine bridge and highway maintenance projects.

Equipment, salt, and other supplies are housed in permanent satellite facilities, called stockpiles. They are located across each county and serve as home base for field crews.

### Districtwide 2015 Summer Activities

Patching — 14,435 tons  
 Seal Coating — 1,576,540 gallons  
 Crack Sealing — 792 miles  
 RAP Paving — 74,788 tons  
 Shoulder Cutting — 1,070 miles  
 Ditch Cleaning — 1,001,831 feet  
 Pipe Replacement — 18,032 feet  
 Side Dozing — 127,546 feet  
 Bridge Cleaning — 1,204 bridges

### Sharing Resources, Saving Funds

District 1 has a formalized **equipment sharing program** among its county maintenance units.

**The program creates a savings of more than \$350,000 a year.**

Once done through a more informal process, the current system requires counties to schedule usage of specialized pieces of equipment, such as pavers, chippers, pugmills, rollers, oil distributors, graders and loaders.

Planning and scheduling is the key to making equipment sharing work and that process starts in the fall. Equipment is assigned as needed and schedules are adjusted to resolve conflicting needs.

The system also includes the ability to reconfigure schedules due to bad weather or equipment breakdowns.



PennDOT maintenance forces take every opportunity to patch potholes. It is typically done through one of two processes.

**Cold patch** — asphalt mixed with soap, water, and fine stones — is used to temporarily repair individual holes as needed.

**Hot mix** — combination of virgin asphalt, fine stones, course stones, and crushed recycled asphalt — is placed straight from the plant to the roadway. It cannot be stockpiled.

# Permits & Posted Roads

**Highway Occupancy Permits (HOP)** are required for any encroachment upon Interstate Highways, US Routes or State Highways. HOPs are issued to utility companies, municipal authorities, developers, builders, and private citizens.

District 1 issued 707 permits in 2015:

- Utility permits issued — 493
- Driveway permits issued — 195
- Miscellaneous permits issued — 19

The District 1 Permits Unit has one of the fastest paperwork processing rates in the state. On average, **the review time for a permit in District 1 is 6.7 days**. The statewide average time is 11.5 days.

**Utility Permits** may be issued to install, repair, replace, connect, remove, or disconnect privately, publicly or cooperatively owned lines, facilities and systems which directly or indirectly serve the public or any part thereof.

**Driveway/Local Road Permits** may be issued to install, alter, or remove a driveway, street or other means of passage of vehicles between the highway and abutting property.

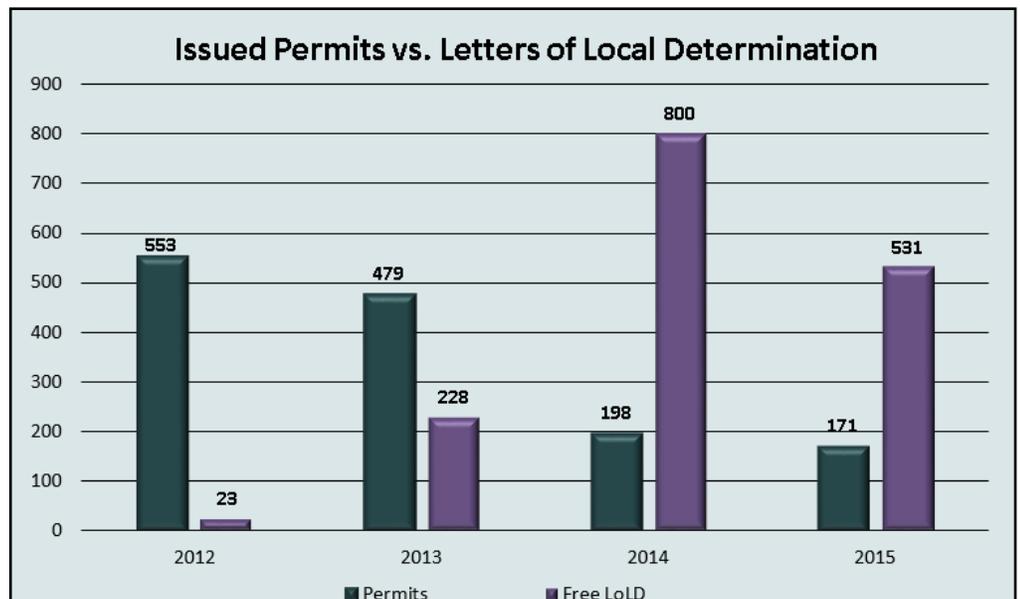
**Miscellaneous Permits** may be issued to perform seismograph testing, embankment alterations, surface openings, roadway improvements; construct, replace, or remove curb and/or sidewalk; connect to Department drainage facilities; open test holes; install, repair, replace or remove non-utility structures, tipples, conveyors, pedestrian overhead crossings, subways, mines or pedestrian underpass crossings.

## Posted and Bonded Roads

Act 89 has dramatically changed the way we do business in Posting and Bonding. Small haulers that are less likely to cause damage have been exempted on most posted roads.

District 1 has historically had a large number of small haulers in the timber, aggregate, and shallow gas/oil industries so our workload has shifted from issuing permits that required bonding and damage repairs to issuing a large number of free Letters of Local Determination (LoLD). LoLD-holders typically haul less than 700 loads per year on a posted road. They are not required to bond the road and cannot be assessed damages.

To illustrate the differences, the chart below shows the number of permits and LoLDs issued from 2012 to 2014. Discretionary funding has helped offset some of the damage repairs needed in 2013 and 2014.



Source: District 1 Permit Department

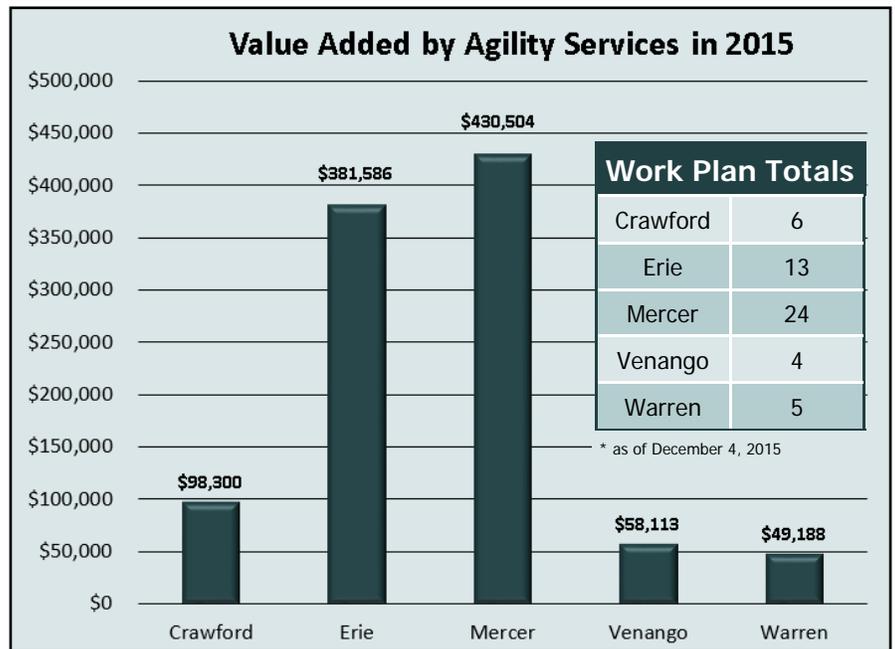
# Community Relationships

Caring for all the roadways and highways in District 1 requires cooperation with the local municipalities. Through PennDOT's **Agility Program**, the state builds and strengthens relationships with local communities and governments by coordinating maintenance efforts.

Through Agility agreements, PennDOT, the municipalities, and organizations share human resources, equipment and knowledge without exchanging money. These innovative partnerships better serve customers and employees.

The Agility Program participants include local governments, locally-funded organizations, state and federal agencies, educational partners, and labor groups.

District 1 has **52 Active Work Plans** in the Agility Program, as of December 4, 2015. Of those, **90 percent** include repeat participating groups. District 1 work plans make up 23 percent of all such arrangements statewide and have a service value of nearly **\$1 million**.



Source: District 1 Municipal Services

## Path of Cooperation

PennDOT works with municipalities to provide a safe place for pedestrians and bicyclists to travel alongside state-owned roadways and bridges.

As part of construction projects, the District considers the need for new or updated walkways, and includes such features into the design and construction costs.

**Though the District is tasked with building the sidewalks, it falls to the city, borough, or township to provide ongoing maintenance.**

It takes the cooperation of the District and local governments to provide pedestrians with the safe walkways they deserve.

District 1 has been working to comply with the Americans with Disabilities Act (ADA) to make the region's curb ramps more easily navigated by the disabled. This includes the installation of 5,121 curbs since 2008, including 1,569 in the City of Erie, 505 in the City of Meadville and 60 in Millcreek Township. **The total cost of ADA ramp construction since 2008 is \$25,605,000.**

Municipality	Number of Ramps	Cost
Erie	233	\$1,165,000
Crawford	235	\$1,175,000
Mercer	256	\$1,280,000
Venango	76	\$380,000
Warren	7	\$35,000
<b>District Total</b>	<b>807</b>	<b>\$4,035,000</b>

# Environmental Stewardship

After years of studies and small-scale relocation trials, thousands of **Northern Riffleshell and Clubshell mussels** were shipped from the Allegheny River at Hunter Station Bridge near the border of Venango and Forest counties to new homes in 2015. The site has the largest known reproducing population of the two federally-listed endangered species.

Since 2008, about **57,000** non-endangered and endangered mussels have been scooped out of the river and moved to other waterways in Pennsylvania, as well as Kentucky, Indiana, West Virginia, Ohio, New York and the Seneca Nation within New York.

In 2015, **\$300,000** was spent on the relocation effort. That cost is expected to climb to **\$750,000** by 2017, as more mussels must be moved.

Each mussel that was plucked from the river was tagged with one of three markers to give scientists and PennDOT the ability to track some of the animals and do further studies of how they adapt and thrive in their new environments.

The multi-year process of relocating the mussels has been a joint effort of PennDOT, the Pennsylvania Fish and Boat Commission, United States Fish and Wildlife, and U.S. Geological Survey. It continues in 2016, but is nearing completion.



Wildlife surveys have become a more routine part of the PennDOT construction process. If a project area is determined to have the potential to impact a threatened or endangered species, the District's environmental department works with various federal and state organizations to ensure proper measures are taken. This can include a biological assessment, fencing off habitats, or planning and carrying out an approved relocation plan.

## Unearthing Native American Artifacts

PennDOT is concerned not only with what is on the surface, but also what lays beneath the ground. When the situation warrants, the District environmental unit will do archeological studies at potential worksites, especially bridges.

Two studies done in recent years unearthed relics of former Native American villages.

- **Hunter Station Site** — Remnants of arrowheads, fire pits, and stone tools dating

back as much as 9,000 years; study started in 2009.

- **Swartz Site, Carlton** — Remnants of fire pits, stone tools, and storage pits dating back to 1160-1480; study done in 2013 by a contractor.

Relics are cleaned, cataloged and returned to the property owner. With permission, the artifacts can also be donated to a state museum.

# Mitigating Our Impact

PennDOT works alongside federal, state and local environmental groups to ensure that region’s natural beauty and wildlife remain for generations to come.

One of the method of preservation is the Wetland Bank program.

In District 1, there are three Wetland Banks – two in Venango County and one in Crawford County. Within each bank is a combination of land featuring emergent vegetation, shrubbery vegetation, open water, or large trees.



Polk Wetland Bank	Polk Woodcock Habitat Initiative	Houghton Wetland Bank
<ul style="list-style-type: none"> <li>• State Game Lands #39, Polk Cutoff Road, Venango County</li> <li>• Constructed in 2004</li> <li>• 4.92 acres</li> <li>• <b>First bank in District 1</b></li> <li>• Used to mitigate the impact of the Route 8 project and in the Upper Allegheny River Watershed</li> </ul>	<ul style="list-style-type: none"> <li>• State Game Lands #39, Polk Cutoff Road, Venango County</li> <li>• Constructed 2008</li> <li>• 10.392 acres</li> <li>• <b>Pilot location for woodcock habitat enhancement program</b></li> <li>• Partners with Ruffed Grouse Society, PA DCNR, PA Game Commission, US Fish and Wildlife, National Fish and Wildlife Foundation</li> <li>• Used to mitigate impact in the Upper Allegheny River Watershed</li> </ul>	<ul style="list-style-type: none"> <li>• Beaver Center private property, Crawford County</li> <li>• Constructed 2007</li> <li>• 14 acres</li> <li>• <b>Habitat changing to include more shrubbery</b></li> <li>• Used to mitigate impacts in the Lake Erie Watershed</li> </ul>

## Managing Storm Water Drainage

The state highway system includes a large number of storm water management facilities constructed by PennDOT to capture drainage.

The facilities installed vary on a case-by-case basis. Examples include ditches, detention basins, and rock check dams.

There is a constant need to maintain BMPs to ensure proper functionality and minimize the risk of failure.

In 2010, Pennsylvania revised its policy to further mitigate the impact of highways and storm water drainage on the environment.

There have been 13 storm water management plans established in District 1 since that time. As a result, there are 345 BMP facilities the District is required to maintain in the following counties:

- Crawford — 23

- Erie — 98
- Forest — 15
- Mercer — 83
- Venango — 126

In cities and boroughs, it is the local government’s responsibility to maintain drainage facilities.

Within townships, PennDOT works with the local government to determine responsibility for facilities. Along highways, the duty falls to PennDOT.

# Right Sizing the System

As part of PennDOT's ongoing efforts to make the best use of allotted resources, the state examines all bridges slated for replacement based on purpose and need, which now also answers the question: **Is this bridge still needed?**

Bridges are evaluated based on proximity to other bridges, rate of vehicular traffic, emergency service needs, and, at times, replacement costs.

Based on these characteristics, PennDOT officials may identify a bridge as **redundant**. The designation does not automatically lead to removal.

PennDOT officials first seek input from members of the community.

If a bridge is determined to be no longer necessary, it is removed only after its useful life has expired or an emergency arises.

Platz Road Bridge in Erie County was demolished after being hit by a tractor-trailer. It was later determined to be a redundant bridge and was not replaced.

The **Sanford Bridge over I-90 in Erie County** will be removed this year, as it was deemed redundant and has reached the end of its useful life.

The **McBride Viaduct in the City of Erie** has been designated a redundant bridge and is slated for removal.

The planning organizations for counties within District 1 have

## Redundant Bridges Demolished since 2012

District 1	2
District 2	3
District 3	2
District 4	6
District 5	3
District 6	3
District 8	4
District 9	3
District 12	5

begun to follow the same process for identifying redundant bridges owned by counties and local municipalities.

## Reducing Lanes, Increasing Safety

Capacity expansion was the thrust of many roadway projects in the 1950s and 1960s.

And that meant adding lanes.

Moderately busy two-lane roads often grew into four-lane highways.

Now planners are rethinking the need for those added lanes.

More of those expanded roads are being put on a **road diet**, which reconfigure roads to reduce the number of lanes.

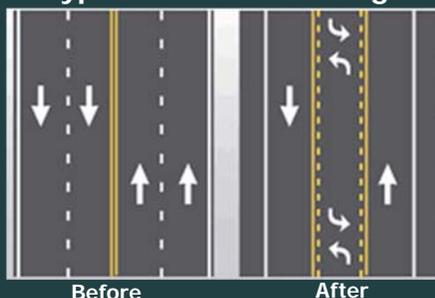
A typical road diet converts a four-lane road to two lanes and

a center turn lane – which maintains capacity and traffic flow and improves safety.

But road diets work for other lane configurations as well.

Road diets are designed to reduce traffic speeds and crashes, reduce maintenance

### Typical Road Diet Design



costs, and improve safety and accessibility for pedestrians, bicyclists and motorists.

District 1's experience with road diets includes West 12th Street in Erie and Route 62 in Oil City.

**The portion of Erie's West 12th Street that was put on a road diet in 2007 experienced an 11.3 percent reduction in crashes when comparing the eight-year periods before and after.**

Currently a section of State Street in the City of Hermitage is in line for a road diet.

# Roundabouts

**The first roundabout constructed in District 1 has produced a significant improvement in highway safety.**

The roundabout opened to traffic on August 20, 2014 at the southern intersection of Route 19 and Route 97 in Waterford Township, Erie County.

In the first year after the roundabout was open, the intersection was the site of two reportable accidents with no injuries. Both accidents involved single vehicles with motorists in their 20s, one of whom had an elevated blood alcohol level.

In the five years before the roundabout was built, 25 people were injured, three seriously, in 27 reportable crashes, at the intersection, including three head-on and 10 angle crashes.

**Compared to a similarly sized signalized intersection, studies show single-lane roundabouts experience:**

- 90 percent fewer fatal crashes
- 75 percent fewer serious injury accidents
- 40 percent fewer pedestrian accidents
- 10 percent fewer bicycle crashes

Roundabouts carry about 30 percent more traffic

## Costs: Roundabout vs. Signals

Sometimes roundabouts cost more to build, sometimes signalized intersections cost more. It varies project to project. The Waterford roundabout cost \$1.98 million. A signalized intersection would have likely cost \$2.4 million.

during peak flow conditions and reduce delays.

Four more roundabouts are planned in District 1:

- **Erie County** — A single-lane roundabout is planned at the intersection of **Route 5 and Millfair Road** in Fairview and Millcreek townships as part of the Millfair Road Improvement Project, which begins in 2017.
- **Crawford County** — Two single-lane roundabouts are to be built in the Saegertown area intersections — one at **Routes 6/19 and 198** and the other at **Routes 198, 6, 86 and State Street**. Work starts in 2016.
- **Mercer County** — A single-lane roundabout is to be built at **Connelly Boulevard and Broadway Avenue** in Sharon. Work is expected to begin in 2016.



In the coming years, the Saegertown Borough area will be home to two roundabouts. Work on one (pictured to the left) is included with plans to rehabilitate the Route 198 Bridge over French Creek.

The other will be built at the intersection of Routes 198, 6, 86 and State Street.

Work on both projects is expected to get underway in 2016 and continue in 2017.

# Multimodal Initiatives

Act 89 created a new Deputate for multimodal transportation at PennDOT responsible for programs in ports, freight rail, passenger rail, bicycle and pedestrian, public transportation, and aviation. It is the goal to:

- Improve freight and passenger mobility
- Maximize the benefits of capital investment
- Promote safety
- Spur economic development
- Improve the effectiveness and efficiency of the transportation network

## PennDOT Multimodal Transportation Fund Awardees in District 1 for 2014-15 and 2015-16

<b>Economic Progress Alliance of Crawford County</b>	Completion of a 85-car unit train loop track to insure favorable long-term rail freight transportation pricing. A \$450,000 match will be provided by Deerfield Farms Service.	\$1,050,000
<b>Erie Regional Airport Authority</b>	Erie International Airport terminal building improvements	\$700,000
<b>City of Franklin, Venango County</b>	Improvements for safety, accessibility, and efficiency at two busy signalized crossings in downtown — 13th and Liberty streets and the mid-1200 block of Liberty Street	\$100,000



In 2015, Pennsylvania ranked as the 12th most bicycle friendly state by the League of American Bicyclists. This is up from 19 in the year before and 42 in 2010.

The City of Franklin in Venango County was named a bronze-level Bicycle Friendly Community by the League in 2014.

The Erie to Pittsburgh Trail Alliance (EPTA), with the help of other groups, continues the effort to further develop a bicycle trail between the cities of Erie and Pittsburgh that cuts through District 1 in Crawford, Erie and Venango counties.

### Airport Support

PennDOT provides support for the region's nine airports by providing subsidies for building and runway improvements. From 2010 to 2015, **\$2,772,068** was granted for seven projects done through the District.

The funding helps ensure the airports can continue to host 100,000 annual flights in and out of the District.

**The Port of Erie** is the only inland port in Pennsylvania that can accommodate ocean vessels. Shipping traffic on Lake Erie is among the highest on the Great Lakes.

The port received a **Pacesetter Award** from the U.S. Department of Transportation's St. Lawrence Seaway Development Corp. for increasing its international cargo tonnage during the 2014 navigation season.

As part of the five-year plan, port officials are working with Donjon Marine to upgrade the facilities to capture additional winter work and accommodate expanded shipbuilding and repair opportunities.

# Public Transportation

When it comes to providing cost-effective public transportation, PennDOT has challenged transit authorities statewide to look beyond the city and county limits and start thinking regionally.

In District 1, five of the six counties, Crawford, Erie, Mercer, Venango and Warren, offer public bus services. All those counties, as well as Forest County, offer shared-ride programs.

In the 2013-14 fiscal year, the Crawford Area Transportation Authority (CATA) contracted with the Erie Metropolitan Transportation Authority (EMTA) to have the CATA buses serviced by EMTA transit mechanics. The results are higher quality, lower costs, and faster turnaround for repairs.

In 2016, CATA entered in agreement with Venango County to take over administrative duties of the VenanGo Bus fixed-route program the following July. The partnership could save the two groups an estimated **\$500,000** over the next 10 years.

Representatives from the two groups have said the move to consolidate was prompted by PennDOT's call for a regionalized public transportation system that serves Crawford, Forest, Venango and Warren counties, as well as Clarion County in District 10.

## EMTA Expansion

The Erie Metropolitan Transit Authority (EMTA) is in the midst of a multiyear infrastructure expansion thanks to a PennDOT grant.

The \$62 million project, when finished, will give the EMTA a facility double the size of its former headquarters.

PennDOT provided \$40 million for the project, which includes the following phases:

- **Phase 1** — Maintenance facility and small bus storage; opened in October 2015.
- **Phase 2** — Public parking deck, administration building, large bus storage; construction starts in 2016.
- **Future Phases**— Transit center, retail space, natural gas fueling station; to be complete by 2020.

### PennDOT Transportation Alternative Program (TAP) Applicants in District 1 for 2016 — under review

City of Erie Erie County	Little Italy Neighborhood Sidewalk Reconstruction	\$175,745
Crawford County Commissioners Crawford County	Conneaut Lake Revitalization — Phase 2	\$300,000
City of Meadville Crawford County	Porter Street Pedestrian Bridge Revitalization	\$219,940
City of Oil City Venango County	Wye Bridge Trail Construction	\$552,414
Mercer Borough Mercer County	Route 19 Upgrades	\$705,322

# Safety & Technology

**Fixed Automated Spray Technology (FAST)** systems automatically spray de-icing brine on a bridge when icing conditions are about to occur. The FAST system monitors weather conditions and helps PennDOT identify when additional salt or brine should be spread.

The first such anti-icing system in District 1 was retrofit onto the Route 6 bridge in Conewango Township, Warren County in 1999.

There were 25 crashes on the bridge in the two years before the system was installed; no accidents were reported during the first winter that the system became operational.

Since that time, additional FAST systems have been installed on four bridges in Erie County — the I-79 bridge over the railroad tracks between West 12th and West 26th streets; the Bayfront Connector’s Wintergreen Gorge Bridge and Zurn Viaduct Bridge; and the I-79 bridge over Route 6 near the Edinboro Exit.



Images from 17 highway cameras in northwest Pennsylvania are fixed on the large display board in District 1’s traffic dispatch center in Oil City. PennDOT employees staff the center 24 hours a day from November through March. They monitor cameras, weather forecasts and other data as they dispatch and coordinate the district’s efforts to keep roads safe and passable during winter months.

## Updated & Online Traffic Information

PennDOT uses technology to help keep the public informed of road conditions. Through the statewide website [www.511PA.com](http://www.511PA.com), people are able to view routes with active work zones, find weather alerts, live stream the view from traffic cameras perched along interstates and more.

In District 1, there are **17 cameras** at five locations, mostly along Interstates 79, 80, and 90. This includes 14 cameras in Erie County and three in Mercer County.

The website’s latest addition is the **Automated Vehicle Location (AVL)** system. Within District 1, **31 plow trucks** are equipped to send out a cellular signal to show where a plow truck is located at any given time and the route they have followed for the past two hours. Also, PennDOT managers can see how much material is being spread. Statewide, more than 500 trucks are hooked into the system.

A free 511 mobile app can be downloaded from Googleplay or the iTunes store.



## Customers & Communication

The Internet gives PennDOT the ability to communicate with customers at an ever-increasing pace. Traditional information distribution through television, radio and print media, is supplemented with the use of a district-run Twitter account (**511PAerie**) and webpages on the new statewide website **www.penndot.gov**. Those efforts are further supported by the statewide Facebook (**Pennsylvania Department of**

**Transportation**), Instagram (**pennsylvaniaidot**), and YouTube (**PennsylvaniaDOT**) accounts.

This leads to greater access for and greater expectations from our customers. Grievances are sometimes posted on social media accounts before any direct notification is given to the County, District or Central Office.



Regardless of how the report is made, customer concerns and issues are placed in the **Customer Care Center** system, assigned to a PennDOT employee, and resolved in a timeline appropriate to the complaint.

Motorists are also given an opportunity to give feedback through the annual **Customer Survey**.

More than 600 people completed the questionnaire in 2015, rating the importance of different transportation initiatives and programs.



**Work zone safety** ranks high among the concerns for PennDOT workers. In 2014, there were 20 crashes within work zones throughout District 1. Those crashes resulted in 14 injuries and one fatality.

The following were typical of **work zones intrusions** recorded in 2015:

- *July 24, 2015 — A vehicle failed to stop at Venango County flagger, holding a stop paddle. The vehicle was stopped by the foreman.*
- *September 21, 2015 — An Erie County crew was performing a ditching operation. The flagger had two vehicles stopped. A third vehicle (motorcycle) stopped. A fourth*

*vehicle was approaching very fast when the driver skidded to a stop, however the 5th vehicle wasn't able to stop hitting the 4th vehicle, which in turn struck the motorcycle, throwing the driver off the motorcycle. PSP and EMS were called to the scene.*

To promote work zone safety, the Mercer County Maintenance crew hosted the **Traveling Worker's Memorial**, as part of the 20th annual **Mercer County Open House**.

Other safety efforts in District 1 included the spring **Teen Driver Competitions**, which expanded to four counties, and **Teen Driver Safety Week** tour that went to five schools in five days in October.

# Competitive Enterprise

**Vision:** Shaping the Future of Transportation Built on Customer Service Excellence.

**Mission:** To advance our commitment to excellence and continuous improvement while encouraging and promoting innovation, creativity and entrepreneurialism.

The District 1 Competitive Enterprise program was started as a way to create greater internal focus on exceeding customer expectations, an innovative process, and a transparent organization.

Since the creation of the Competitive Enterprise, the District has developed surveys, focus groups, training and other means of gathering feedback and communicating with employees and customers.

These methods include the following:

- Dashboard and Scoreboard Districtwide performance metrics were redeveloped in 2015.
- External focus groups have been conducted three times since 2011 with sessions in Erie, Venango and Mercer counties. The results showed satisfaction and communication was improving, and education was important.
- Surveys of external customers and stakeholders helped identify areas the District needed to address in order to improve products and services Districtwide.
- Internal Communication Survey, completed for the seventh time in 2015, continues to serve as an avenue for employees to give input on the District operations.
- Leadership Training was developed and conducted for and by in-house staff.

## Eight Realization Indicators

- Excellent Customer Service — *Working Toward a "Thank You"*
- Enhanced Use of Data — *Accurate Data Drives Our Decisions*
- Quality and Value Add — *Quality is Non-Negotiable*
- Empowered Employees — *Our Employees Make a Difference*
- Transparency — *What I Know, You Know*
- Continuous Improvement — *We Challenge the Status Quo Every Day*
- Succession Planning — *You Are PennDOT's Future*
- Open Communication — *Communication is a Two-Way Street*

# Learning to Speak PennDOT: Common Acronyms

- **AADT** — Annual Average Daily Traffic
- **ADT** — Average Daily Traffic
- **ADTT** — Average Daily Truck Traffic
- **BMS** — Bridge Management System
- **BOMO** — Bureau Of Maintenance & Operations
- **BRADD** — Bridge Automated Design and Drafting
- **CMAQ** — Congestion Mitigation and Air Quality
- **DT** — Declaration of Taking
- **EA** — Environmental Assessment
- **EIS** — Environmental Impact Statement
- **EJ** — Environmental Justice
- **EJC** — Estimated Just Compensation
- **FFY** — Federal Fiscal Year (October 1 - September 30)
- **FHWA** — Federal Highway Administration
- **FMV** — Fair Market Value
- **GIS** — Geographic Information System
- **GF** — General Fund
- **ITS** — Intelligent Transportation Systems
- **LDD** — Local Development District
- **LOS** — Level Of Service
- **LRP** — Long-Range Plan
- **LTAP** — Local Technical Assistance Program
- **MLF** — Motor License Fund
- **MPMS** — Multi-Modal Project Management System
- **MPO** — Metropolitan Planning Organization
- **NHS** — National Highway System
- **NHTSA** — National Highway Traffic Safety Administration
- **NTP** — Notice To Proceed
- **OSHA** — Occupational Safety and Health Administration
- **PE** Planning and Engineering
- **PHMC** — Pennsylvania Historical and Museum Commission
- **PI** — Project Inventory
- **PL** — Planning
- **PSA** — Public Service Announcement
- **PTC** — Pennsylvania Turnpike Commission
- **PVC** — Polyvinyl Chloride (pipe)
- **QA** — Quality Assurance
- **RC** — Reinforced Concrete or Cement
- **RFP** — Request For Proposal
- **RI** — Road Information
- **RTAP** — Research Technical Assistance Program
- **RTK** — Right To Know
- **RV** — Recreation Vehicle
- **R/W** — Right of Way
- **SAL** — Single Axle Load
- **SAMI** — Safety and Mobility Initiative
- **SCSC** — State Civil Service Commission
- **SIP** — Safety Improvement Program
- **SIP** — State Implementation Plan
- **SIP** — Surface Improvement Program
- **SR** — State Route
- **STC** — State Transportation Commission
- **STIP** — Statewide Transportation Improvement Program
- **TAC** — Transportation Advisory Committee
- **TCP** — Traffic Control Plan
- **TIP** — Transportation Improvement Program
- **TLP** — Traffic Line Paint
- **TR** — Traffic Route
- **TYP** — Twelve Year Program
- **VPH** — Vehicles per Hour
- **WO** — Work Order

Contact our  
Community Relations Coordinator

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