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Pennsylvania State Highway Maintenance Funding

June 2023



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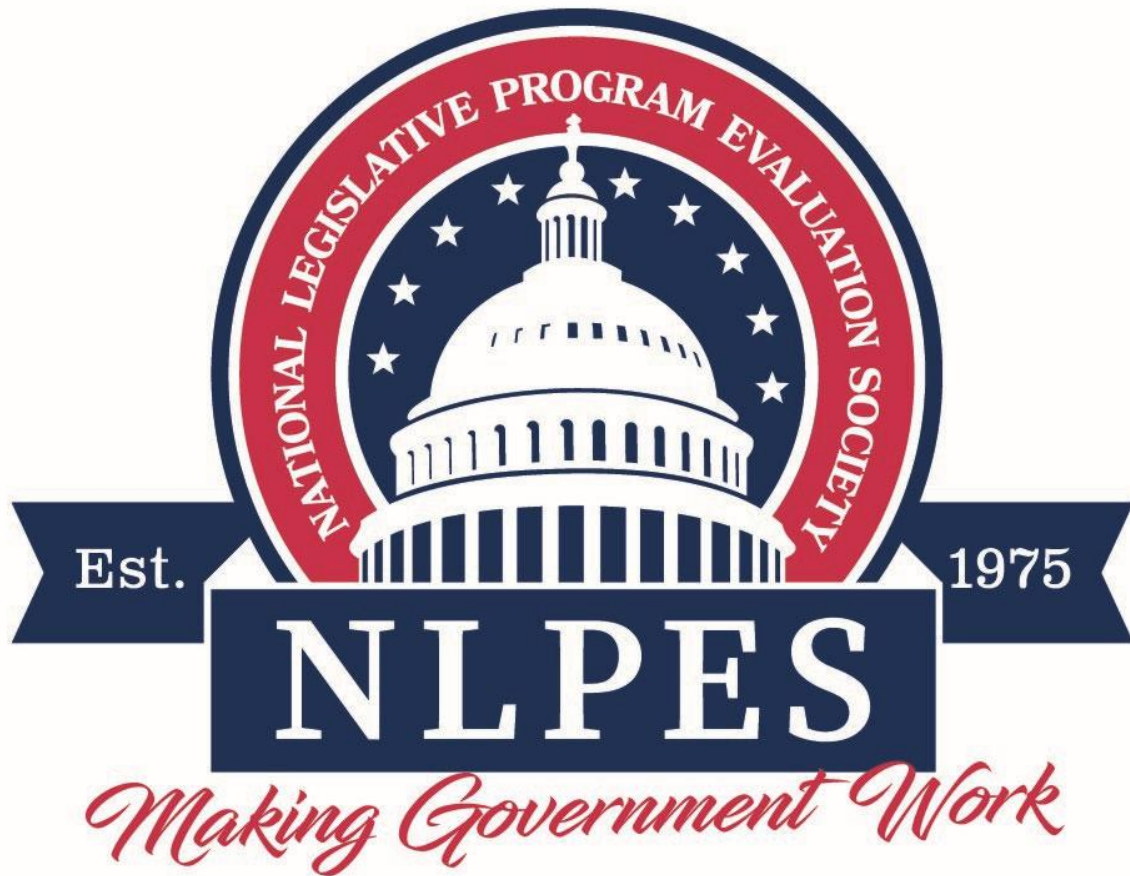
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REPORT SUMMARY



Study Objectives

- ❖ *To determine whether the funding formula has appropriately funded the CMOs based on a review of maintenance needs versus maintenance allocation, including a comparison of the condition of the highways, bridges, and other assets. The determination of the appropriateness of CMO funding shall also take into consideration lane miles and bridges; vehicle miles traveled; and types of highways in the county, including 1997 population and future population projections.*
- ❖ *To identify the distribution of highway maintenance funding directed to major, fixed expenditures, including personnel and benefit costs in each CMO.*
- ❖ *To review state emergency funding totals by CMO for acts of nature such as flooding and landslides.*
- ❖ *To compare PennDOT districts on the effects of winter maintenance.*
- ❖ *To review PennDOT's Road Maintenance and Preservation (RoadMaP) program created in 2016 and its*

Report Overview

The Legislative Budget and Finance Committee generated this report in response to Senate Resolution 2021-53. It primarily focused on the Pennsylvania state highway maintenance funding formula (SHMFF) and its impact on the PennDOT County Maintenance Offices' (CMOs) state highway and bridge maintenance funding. Although PennDOT has a central office in Harrisburg, it is a decentralized organization. The decentralized nature of PennDOT allows each of the agency's Engineering Districts and CMOs to elect to use either internal resources or external contractors to complete maintenance activities.

We reviewed data and information covering the period from 1997 through 2021, emphasizing Fiscal Years (FYs) 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, and 2021-22.

Background

PennDOT Responsibilities, Mission, and Goals

The Pennsylvania Department of Transportation (PennDOT) oversees the Commonwealth's overall transportation system. PennDOT is statutorily responsible for constructing, reconstructing, maintaining, and repairing all highways in the state highway system, along with administering the Aviation Code, the State Highway Law, the Public Transportation Law, the Vehicle Code, and other transportation-related laws and regulations.

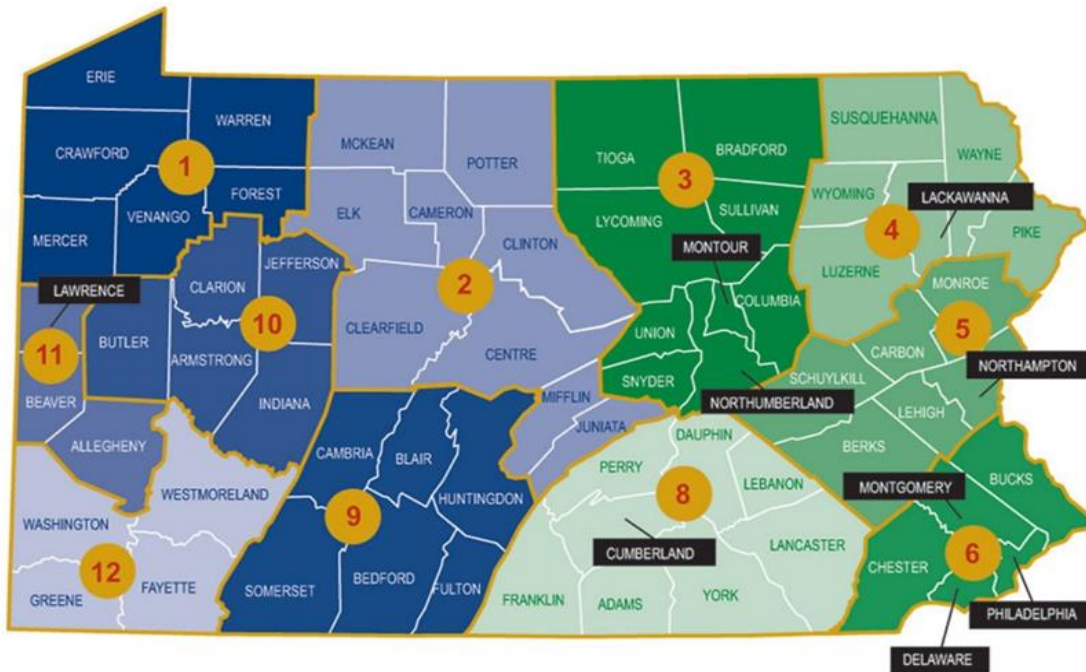
- The mission of PennDOT is to enhance, connect, and add value to the communities by providing a sustainable, equitable transportation system and quality services for all. PennDOT programs and goals include the goal: *To provide a safe and efficient state-administered highway network through road and bridge improvement, as well as through ongoing maintenance activities, including winter traffic services.*

Engineering Districts and County Maintenance Offices

This report primarily focuses on the Pennsylvania SHMFF and its impact on the PennDOT County Maintenance Offices' (CMOs) state highway and bridge maintenance funding. Although PennDOT has a Central Office in Harrisburg, it is a decentralized organization.

The following map shows PennDOT's 67 CMOs, divided geographically among 11 Engineering Districts (regional offices) across the Commonwealth, numbered one through 12 (with no number 7). Each Engineering District consists of and is responsible for between three and nine CMOs.

PennDOT Engineering District and CMOs



Source: PennDOT.

PennDOT maintains over 83,000 state 12' equivalent lane miles, approximately 40,000 linear miles, and over 25,000 state bridges. PennDOT's Engineering Districts and CMOs are responsible for the overall maintenance of these state highways and bridges to ensure their safety, quality, and longevity.

State Highway and Bridge Maintenance

Maintenance. For purposes of distributing funding to the 67 CMOs based on the Pennsylvania SHMFF, the term "highway maintenance" is defined as follows:

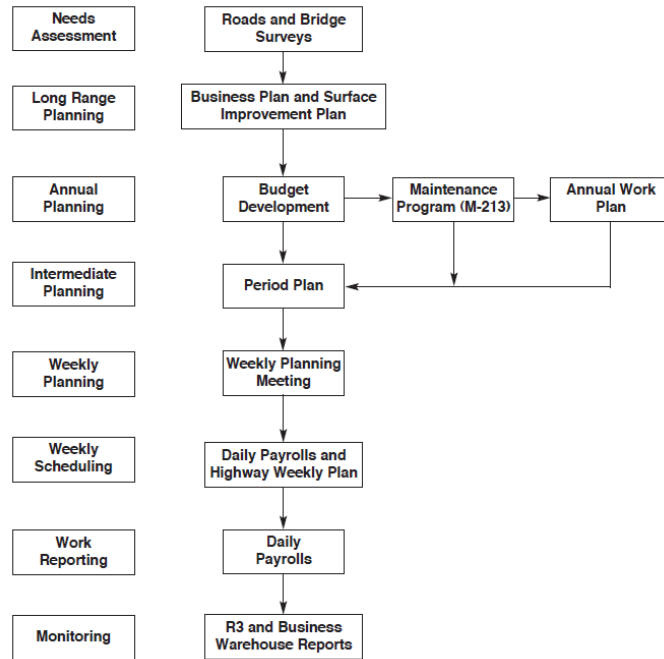
"Highway maintenance." *A program to preserve, repair and restore a system of existing State roadways with its elements to its designed or accepted configuration. System elements include but are not limited to travelway surfaces, shoulders, roadsides, drainage facilities, bridges, tunnels, signs, markings, lighting, and fixtures. The program includes traffic services such as lighting and signal operation, snow and ice removal, and operation of roadside rest areas. Highway maintenance programs are developed to offset the effects of weather, organic growth, deterioration, traffic wear, damage, and vandalism. Deterioration would include effects of aging, material failures, and design and construction faults to existing state highways.*

Highway maintenance is essential because highways needing repair are estimated to cost the average motorist in the United States \$599 annually, a total of \$130 billion nationally.

Maintenance Planning. Highway maintenance requires proper planning to 1) ensure that each part of the PennDOT organization knows when, how, and what to contribute towards maintaining the state highway system, 2) ensure the organization is efficiently performing maintenance operations, 3) minimize maintenance costs, and 4) facilitate achieving maintenance goals. PennDOT bases its highway maintenance plan on available resources, budgets, and maintenance needs.

The following PennDOT Maintenance Planning and Scheduling Flowchart illustrates the agency's recommended planning and scheduling process for maintenance operations that begins with a needs assessment of state-owned bridges and highways.

Maintenance Planning and Scheduling Flowchart



Source: PennDOT.

As reflected in the PennDOT Maintenance Planning and Schedule Flowchart, there are numerous levels of planning:

- *Long-range/strategic planning* is the highest level of planning and is the process of determining the organization's long-term goals and identifying the best approach to achieving the goals. PennDOT's Central Office establishes the agency's goals for up to 12 years. The CMOs use these goals to develop county-level long-range planning that typically covers four to five years. The long-range plan sets the direction for all subsequent levels of planning, which directs the day-to-day maintenance activities in the counties. A primary emphasis of Engineering Districts and CMOs is the annual development of an updated Surface Improvement Plan. The plan includes projected miles and dollars for several categories (e.g., betterment, resurfacing, widening, leveling, sealing, and surface repair) that cover four to five years.
- *Annual planning* involves Engineering Districts and CMOs developing a budget for the next fiscal year in conjunction with submitting the annually updated Surface Improvement Plan. Annual highway maintenance funds are distributed as determined by the SHMFF.

- *Intermediate planning* adds more detail to the annual work plan and ensures maintenance operations are performed properly; for example, pipes are replaced before the road is paved. Intermediate planning identifies all PennDOT force assemblies to be performed during the scheduling period, which foreman will perform the work, planned production units to be completed, the time of year the work will be done, and where the assemblies will be performed.
- Weekly planning is primarily based on a CMOs' intermediate plan. It involves weekly planning meetings that provide the opportunity to coordinate the use of available resources (i.e., labor, equipment, and materials) to ensure work identified in the preceding planning efforts is completed.

Maintenance Operations. State highways and bridges throughout Pennsylvania experience high traffic volumes and are subject to inclement weather, including the impacts of winter weather. As a result, Pennsylvania's regular maintenance is required and includes the following:

- *Surface treatment (oil and chip),*
- *Shoulder cutting,*
- *Shoulder grading,*
- *Shoulder patching,*
- *Pipe replacement and cleaning,*
- *Mechanized patching,*
- *Manual/Pothole patching (hot mix and cold patch),*
- *Joint and crack sealing,*
- *Winter operations,*
- *Vegetation management,*
- *Line painting,*
- *Bridge maintenance,*
- *Signage,*
- *Buildings and grounds (county maintenance facilities),*
- *Emergency maintenance (unscheduled maintenance services are often required in response to flooding, landslides, windstorms, sinkholes, and other acts of Mother Nature).*

International Roughness Index (IRI). PennDOT also reports on state-owned highway system rideability and pavement smoothness based on data collected and rated according to the International Roughness Index (IRI), which simulates a vehicle's response to highway deviations and acts as an expression of the rideability of the road as vehicle passengers experience it. While PennDOT uses IRI testing to determine state highway pavement roughness, IRI is also part of what PennDOT reports as part of Pennsylvania's pavement condition or network

assessment. However, rougher roads generally reflect conditions that require treatment and additional resources that cost money.

Operations and Performance Office and County Accreditation to Share Best Practices (OPO).

PennDOT established its Operations and Performance Office (OPO) in 2017 to provide support to its Engineering Districts and CMOs to share best practices and innovations that enable highway maintenance activities to be efficient and effective, particularly given the limited availability of resources. OPO's foundation was built on the principles of the County Accreditation initiative, which seeks:

- A commonality in improvements and efficiency while also acknowledging differences exist among Engineering Districts and CMOs, and
- To fully understand statewide and county maintenance budgets and their constraints.

OPO developed and implemented the maintenance business model that focuses on the following three goals: core maintenance, winter operations, and efficiency and effectiveness of available resources. OPO seeks to communicate effectively and collaborate with the maintenance community and its partners. The following reflects some of OPO's key functions:

- Acting as the lead on County Accreditation.
- Building and maintaining relationships between the PennDOT Central Office, Engineering Districts, CMOs, and all internal and external partners.
- Manages and evaluates Engineering Districts' and CMOs' implementation of maintenance budgets, utilization of personnel, fleet and equipment inventories, and materials, and identifies areas of potential improvement.
- Establishes and manages core maintenance activities and the timeframe for completion.
- Designing, developing, promoting, and conducting various maintenance training programs.

PennDOT Engineering Districts and CMOs Organizational Structure and Staffing related to State Highway and Bridge Maintenance

The maintenance of Pennsylvania state highways and bridges requires a significant monetary commitment and a significant number of staff at both the Engineering District and CMO levels. PennDOT indicated that over the past five years, the agency lost a great deal of management and

supervisory staff, along with approximately 35 percent of its maintenance field staff, representing a significant loss of essential maintenance and institutional knowledge.

Engineering District Staffing. Engineering Districts oversee numerous PennDOT Central Office functions at the district level (i.e., administration, construction, design, and maintenance). Staff is divided into three types of positions: full-time consultant, full-time permanent, and seasonal temporary. These positions are further delineated into units: administrative, construction, design, and maintenance. Engineering District Maintenance Unit staff provide technical support and assist with managing shared programs between CMOs within a district. Engineering District Maintenance Unit staff ensure that CMOs follow appropriate policies and procedures and support CMOs in various ways (e.g., district line painting crews, technical training, etc.).

County Maintenance Office Staffing. Each CMO has staffing that works specifically in that county. CMOs and their respective staff are engaged in highway and bridge-related maintenance functions, including all fieldwork and other supporting staff positions.

CMOs' organizational structure includes administrative, human resource, technical, management, and field staff. CMO staff provide the necessary functions to maintain the facilities within their counties, which include the operation of state roadways, bridges, and other critical transportation assets throughout the county. Typically, a CMO has the following staff to support operations:

- County Manager
- Assistant Highway Maintenance Managers (number of positions varies based on county size)
- Equipment Manager
- Mechanic Supervisor
- Roadway Programs Technician
- Purchasing Agent
- Stock Clerk
- Payroll Clerk
- Roadway Programs Technicians (number of positions varies based on the size of the county)
- Confidential Clerical (HR functions)
- Mechanics (number of positions varies depending on county size)
- Foremen (number of positions varies based on county size)
- Operators

In some instances, CMOs combine operations, known as combined or dual counties, which are structured similarly to a typical CMO, except the

County Manager, Equipment Manager, and Roadway Programs Coordinator typically split their time between both counties. Additionally, roadway program technician positions may also divide their time, depending on the size of each combined county.

Maintenance Budget and State Highway Maintenance Funding Formula

Maintenance Budget: The variety of maintenance operations and that PennDOT is responsible for over 80,000 12' equivalent lane miles/approximately 40,000 linear miles (fifth largest highway system in the country) and 25,000 bridges (the third highest number in the country) requires an enormous amount of equipment, materials, personnel, and money. During FY 2021-22, PennDOT's total state highway maintenance budget was approximately \$1.7 billion. This does not include the estimated overall additional highway maintenance funding needs of \$4.2 billion in FY 2021-22. This shortfall in highway maintenance funding is based on the annual requirement to perform cyclical maintenance activities. These include crack sealing, drainage repair, patching, bridge cleaning, winter maintenance, equipment management, other non-route-specific programs, and operational costs.

Pennsylvania's annual state highway maintenance budget needs information is collected by PennDOT's Bureau of Operations and the Pennsylvania SHMFF factors are calculated by its Bureau of Fiscal Management. The PennDOT Engineering Districts and CMOs are also part of the process to calculate the annual state highway maintenance budget based on the Pennsylvania SHMFF, which in part factors in the number of 12' equivalent lane miles.

Annual maintenance budgeting is a significant process; one of the many factors that Engineering Districts and the CMOs must account for is the winter maintenance program, which can fluctuate from year to year in that expenditures are related to the frequency and severity of winter weather. Engineering Districts and CMOs attempt to develop realistic budget estimates based on prior weather activity and historical expenditures. When winter is milder than anticipated, unused winter maintenance funds are shifted to spring and summer maintenance activities. Conversely, when winter maintenance requires more funds, they are moved from spring and summer maintenance activities. PennDOT often contracts with local municipalities to clear state roads within its jurisdiction. Maintenance issues can vary significantly among the Engineering Districts due to the variation in the communities they serve, the ability to hire temporary staff to operate trucks to clear snow, or their ability to contract with external contractors to perform winter operations.

Maintenance Funding Formula

The Pennsylvania SHMFF was last modified by the General Assembly in 1997 to achieve a fairer allocation of maintenance funds reflecting annually changing needs.¹ The current formula eliminated the utilization of the historical allocation of funds in 1978 and 1979 and instead incorporated a rolling five-year average of each county's expenditures. It also reflected a revision of highway and bridge factors considered in each county's five-year rolling average. According to PennDOT, these changes were intended to capture and reflect changing state highway maintenance needs annually to ensure a more equitable distribution of state highway maintenance funds.²

Current Formula. The Act 1997-3 SHMFF is based on the premise that more funding should be directed to counties with more significant needs (worse conditions) and provides for funding based on the following two components:³

- *First component* - An amount equal to the county's base allocation. The base allocation is the annual expenditure for routine maintenance operations performed by a CMO. It includes costs incurred for personnel services, operational expenses, and fixed assets, but does not include highway repair and restoration costs, averaged over the immediately preceding five years.
- *Second component* – An amount based on the ASHMA formula, in which each county receives a portion of state highway maintenance appropriations and executive authorizations (EAs) in excess of the total of all counties' base allocations expressed in the following manner:

$$\text{ASHMA} = (40\% \text{ RPQc} + 15\% \text{ BMDc} + 30\% \text{ LMc} + 15\% \text{ VMc})$$

The current formula specifically incorporated the following modifications for purposes of calculating state highway maintenance funding:

- The base allocation was replaced by providing for the calculation of a rolling five-year average of each county's expenditures for personnel, equipment, materials, and facilities. The new base allocation changes with time, reflecting a five-year rolling average.

¹ Prior LBFC analysis in a 2002 PennDOT performance audit report found that the Act 1997-3 state highway maintenance funding formula resulted in a fairer allocation of maintenance monies.

² Under the old funding formula LBFC noted in its 2002 PennDOT performance audit report that the distribution of funding to CMOs left some counties underfunded and others overfunded regarding identified highway maintenance needs; those discrepancies occurred because the base allocation was based primarily on allocations made in the late 1970s versus actual maintenance needs.

³ Title 75 (Vehicles) - 75 Pa.C.S. § 9102 (Distribution of state highway maintenance funds – formula for distribution).

- The hold harmless provision was eliminated because it acted as a second base allocation and inhibited the formula from reacting to changes in needs.
- The snow index was eliminated because all winter expenditures are included in the new base allocation calculations.
- Lane miles were increased in weight to 30 percent (up from 15 percent) because this variable directly correlates to actual pavement needs. The bridge deck area index was modified to include a bridge maintenance condition index (see BMD index).

Perceptions, Modifications, and Alternatives.

PennDOT indicated that the lack of funds available to address all annual state highway maintenance needs might create the perception that the Act 1997-3 SHMFF, its various factors, and its methodology are potentially flawed and need adjustment.⁴ PennDOT further noted that any changes to the funding formula generally have the potential to create winners and losers, as any change would only impact the distribution of existing funding versus providing additional funding. Aware that the methodology of the current funding formula is potentially subject to scrutiny, PennDOT indicated that it has considered and analyzed potential changes from time to time. Any potential changes to the funding formula or its factors would need to be thoroughly examined and vetted, and changes to the funding formula would need legislative authorization.

Funds and Revenues

PennDOT Maintenance Funding. State highway maintenance funding revenues consist of the following nonrestricted and restricted revenues:

- Nonrestricted revenues include Liquid Fuels Taxes, licenses, fees, and other nonrestricted revenues (e.g., interest/investment earnings). These monies, known as the A-582 Highway Maintenance Appropriation, are disbursed, and distributed by the State Highway Maintenance Formula.
- Restricted revenues consist of the following:
 - A-181 Highway Maintenance Excise Tax restricted revenues from 19 percent of 55 mills of the Gas Tax

⁴ PennDOT noted that when the current Act 1997-3 state highway maintenance funding formula was initially implemented, the base allocation portion of the formula and the ASHMA portion of the formula each represented about 50 percent of the funding, but now the base portion of the formula represents about 80 percent versus 20 percent from the ASHMA portion of the formula. The funding needs for the base portion of the funding formula have continued to grow, leaving less funding to be driven out through the ASHMA portion of the funding formula.

increase per Act 1991-26. These monies are considered a supplement to the 10582 Highway Maintenance Appropriation and are distributed by the State Highway Maintenance Formula.

- A-174 Highway Maintenance Enhancement restricted revenue from 40 percent of 38.5 mills of the Gas Tax increase per Act 1997-3. These funds are considered a supplement to the 10582 Highway Maintenance Appropriation and are distributed by the State Highway Maintenance Formula.
- A-409 Expanded Highway and Bridge Funding restricted revenues from 48% of 38.5 mills per Act 2013-89. These monies are paid directly towards the projects and activities and distributed according to the State Highway Maintenance Formula.
- State augmentations are project-specific restricted revenues for state highway maintenance within a specific county.
- PennDOT receives federally restricted revenues of up to \$100 million annually, distributed to counties due to flooding and emergencies. These restricted revenues are distributed per the A582 maintenance account.

Funding Formula and Maintenance Needs

PennDOT's county maintenance offices (CMOs) are funded yearly through a two-component highway maintenance funding formula. These two components are 1) the base allocation, which is the annual expenditure for routine maintenance operations: traffic, roadside, and winter services performed by a CMO, and 2) an amount based on the Additional State Highway Maintenance Appropriation (ASHMA) formula.

The dollar amounts calculated from these two components plus the amount allocated from the Expanded State Highway and Bridge allocation yield a CMO's gross allocation.

To determine the overall maintenance needs of Pennsylvania's state highways and bridges, PennDOT uses various factors and assigns dollar values to those needs. These factors are:

- Bridge maintenance needs,
- Drainage needs,
- Guiderail needs, and
- STAMPP needs.

The drainage needs and guardrail needs are determined based on surveys, while the bridge maintenance needs are based on inspections. STAMPP stands for Systematic Technique to Analyze & Manage Pennsylvania's Pavements (See Section II – Background additional STAMPP information).

The exhibit below shows the total maintenance allocation (gross allocation plus Expanded Highway and Bridge Allocation) compared to calculated highway and bridge maintenance needs.

In FY 1997-98, the overall maintenance needs shortfall was \$1.2 billion. However, the shortfall was \$4.2 billion in FY 2021-22. Maintenance funding in Pennsylvania is significantly underfunded. On average, highway and bridge maintenance was underfunded by 163 percent for the years included in this study. Throughout this study, there were only five individual CMO instances where the county's allocation exceeded its needs.

**Total Statewide Highway and Bridge
 Funding and Maintenance Needs**
 FYs 1997-98 and 2015-16 to 2021-22
 (In Thousands)

	Gross Allocation	A-409 ^a	Total	Needs	Difference
FY 1997-98	\$946,822	N/A	\$946,822	\$2,151,729	-\$1,204,907
FY 2015-16	1,329,307	252,335	1,581,642	4,648,470	-3,066,828
FY 2016-17	1,330,418	251,170	1,581,588	3,163,176	-1,581,588
FY 2017-18	1,340,318	290,072	1,630,390	4,002,810	-2,372,420
FY 2018-19	1,340,318	292,589	1,632,907	4,143,726	-2,510,819
FY 2019-20	1,263,318	279,668	1,542,986	4,889,197	-3,346,211
FY 2020-21	1,198,664	250,948	1,449,612	5,505,040	-4,055,428
FY 2021-22	1,342,194	272,530	1,614,724	5,761,628	-4,146,904

^a These A-409 amounts do not include the 15 percent discretionary amount described above and differ from A-409 amounts presented in Section II Background. These amounts do not include funds directed to PennDOT's Central Office.

Source: Developed by LBFC Staff from data provided by PennDOT.

Agility Agreements

Agility is a "way of doing business" that enables PennDOT and eligible partners to exchange services, equipment, and staff that are reasonably equal in amount instead of money. By entering agility agreements,

PennDOT and the partner make the most of limited resources while developing working relationships.

Presently, municipalities represent the majority of partners in the program. Still, other entities are eligible, including water, sewer, housing and municipal authorities, councils of governments, metropolitan and rural planning organizations, public school districts and state universities, community colleges, vocational-technical schools, volunteer fire and rescue companies, volunteer emergency medical transport companies, state and federal government agencies, and charitable hospitals.

For FY 2015-FY 2022 combined, PennDOT executed 247 agility agreements with partners.

Lane Miles and Bridges

In FY 2021-22, Pennsylvania had 83,231 12' equivalent lane miles. Forty-nine percent of lane miles are four-digit routes, 27 percent are three-digit, 22 percent are two-digit, and the remaining three percent are one-digit. The five counties with the highest number of lane miles are:

- Allegheny: 3,060,
- Westmoreland: 2,420,
- York: 2,387,
- Bucks: 2,337,
- Lancaster: 2,263.

The five counties with the lowest number of lane miles are:

- Cameron: 192,
- Forest: 333,
- Montour: 351,
- Sullivan: 415.
- Mifflin: 492.

Although PennDOT uses several indices that indicate road conditions, we use the Overall Pavement Index (OPI), a more comprehensive index because it considers roughness and other pavement distresses. The OPI is also unique to Pennsylvania. OPI is on a scale from 0 to 100; 100 is in perfect condition. When the pavement has distress, that distress is quantified into a number and deducted from the perfect score of 100: the more severe the distress, the greater the deduction.

According to PennDOT's calculations, percentages of Pennsylvania's roads are in:

- Excellent condition: 20 percent,
- Good Condition: 45 percent,

- Fair Condition: 22 percent,
- Poor Condition: 12 percent.⁵

In FY 2021-22, Pennsylvania had 25,451 bridges, 49 percent of which were one-, two-, and three-digit routes, while the remaining 51 percent were four-digit routes.

PennDOT rates bridge conditions as good, fair, and poor on a scale of 0-9. The scale is:

- Good: 7-9,
- Fair: 5-6,
- Poor: 0-4.

Over half of Pennsylvania's bridges, eight feet or greater, in the state route system are in fair condition:

- 34 percent in good condition,
- 56 percent in fair condition,
- 9 percent in poor condition.

Vehicle Miles Traveled and Pennsylvania Population

In FY 2021-22, 80.2 billion vehicle miles were traveled on Pennsylvania's highways. Of those, 9.5 billion were truck miles and 71.0 passenger vehicle miles.

SR 2021-53 also asked us to review vehicle miles traveled by residents of Pennsylvania and those from out-of-state; however, these statistics are not captured within the data PennDOT collects for the Federal Highway Administration through the Highway Performance Monitoring System (HPMS).

In Section III of this report, we also present population statistics. We show actual populations for 1990, 2000, 2010, and 2020 and present projections every five years until 2040.

⁵ Percentages do not add to 100 as PennDOT cannot test some mileage each year due to construction.

Funding For Major Fixed Expenditures

SR 2021-53 directed LBFC to identify the distribution of highway maintenance funding intended for major, fixed expenditures, including personnel and benefit costs in each Engineering District and County Maintenance Office (CMO). We collected data and other information from PennDOT that provides an overview of how funds were spent in the Engineering Districts and CMOs for FYs 2015-16 through FY 2021-22.

PennDOT distributes an amount to each CMO based on Act 1997-3 SHMFF. The funding is equal to a CMO's base expenditure plus a non-base amount based on the incremental portion of the funding formula in which each county receives a part of the state highway maintenance appropriations and executive authorizations above the total of all CMOs' base allocations.

- A total of \$82 million was spent on fixed assets by the Engineering Districts and CMOs throughout the study period. The five Engineering Districts with the highest overall ("base and "non-base") actual fixed assets expenditures throughout the study period were:
 - Engineering District 8 - \$21.6 million,
 - Engineering District 1 - \$11.2 million,
 - Engineering District 4 - \$9.1 million,
 - Engineering District 5 - \$8.8 million,
 - Engineering District 3 - \$8.3 million.
- PennDOT's engineering districts and CMOs spent \$3.8 billion on operational expenses throughout the study period. The five Engineering Districts with the highest overall ("base and "non-base") actual operational expenditures throughout the study period were:
 - Engineering District 6 - \$613.2 million,
 - Engineering District 11 - \$578.8 million,
 - Engineering District 8 - \$413.6 million,
 - Engineering District 4 - \$321.8 million,
 - Engineering District 12 - \$313.3 million.
- Engineering districts and CMOs used \$4.5 billion in funding for personnel services expenditures throughout the study period. The five Engineering Districts with the highest overall ("base and "non-base") actual personnel services expenditures throughout the study period were:
 - Engineering District 8 - \$555.3 million,

- Engineering District 3 - \$476.4 million,
- Engineering District 9 - \$414.6 million,
- Engineering District 5 - \$409.5 million,
- Engineering District 2 - \$406.2 million.

Emergency Funding

Senate Resolution 2021-53 directed LBFC to review state emergency funding totals by county maintenance office (CMO) for acts of nature such as flooding, landslides, and other significant events, such as bridge collisions and pipe repair.

To address these unanticipated costs that would otherwise interfere with the ability of PennDOT's CMOs to complete regular state highway maintenance operations, the PennDOT Central Office typically sets aside additional funds from its state appropriation into its Emergency Fund. Annual Emergency Fund appropriations ranged from \$10 million to \$22 million from FYs 2015-16 to 2021-22. Total emergency funding is shown below.

Total Emergency Funding Distributed and Undistributed (State Funds Only – In Thousands)

Item	1997-98	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Total Funds Available ^a	\$6,000	\$20,785	\$23,154	\$10,000	\$125,626	\$31,660	\$15,000	\$22,000	\$254,225
Total Distributed	5,292	18,603	23,154	9,197	82,431	31,660	14,820	14,448	199,605
Total Undistributed	708	2,182	-	803	43,195	-	180	7,552	54,620

^a Total Emergency funds available reflects original appropriations, monies from an additional Efund, and any reimbursement amounts (i.e., FY 2016-17 Butler CMO and Indiana CMO).

Source: Developed by LBFC staff from information provided by PennDOT

Winter Operations

One of the objectives of this study is to compare PennDOT districts on the effects of winter maintenance. During winter, the department's goal is to keep roads passable and safe.

According to the Winter Services Guide, each storm is unique, can have various impacts, and presents distinct challenges. PennDOT staff review weather reports and on-the-ground conditions to plan how to manage each storm.

In addition to storm preparation, how CMOs use winter materials during storms varies by roadway and precipitation type. Salt is the primary winter material used through a storm on higher-volume highways, especially during rush hours and on bridges, hills, curves, and intersections. On lower-volume roadways, salt will be reduced, and antiskid will be used more. PennDOT's focus for plowing is on interstates and expressways, which can have a plow route completed in roughly two hours.

PennDOT has a variety of materials and equipment to keep roads clear of winter precipitation, including anti-icing, antiskid, salt spreaders, temperature sensors, salt, salt brine, and a variety of trucks. Over the seven years of our review period, the department used: 124.5 million gallons of salt brine, 3.5 million tons of antiskid material and 3.5 million tons of salt.

Total costs for winter operations in the past seven fiscal years ranged from \$212.3 million in FY 2019-20 to \$303.0 million in FY 2017-18, an average of \$261.3 million.

Total snow lane miles ranged from 85,485 in FY 2021-22 to 96,267 in FY 2015-16. Cost per snow lane mile ranged from \$2,208 in FY 2017-18 to \$3,263 in FY 2020-21, averaging \$2,780 over the seven fiscal years included in this study.

**Statewide Winter Operation Cost
(FYs 2015-16 to 2021-22)**

Fiscal Year	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
2015-16	\$95,324,299	\$49,943,798	\$8,621,696	\$15,562,289	\$48,014,117	\$217,466,199	96,267	\$2,259
2016-17	112,752,828	59,013,800	9,394,137	12,571,540	61,836,606	255,568,912	96,239	2,656
2017-18	124,538,294	69,379,675	18,552,945	13,353,542	77,191,706	303,016,163	96,017	3,156
2018-19	123,665,633	67,511,900	15,234,947	13,887,728	73,349,963	293,650,172	96,034	3,058
2019-20	93,603,500	54,912,743	5,900,610	14,641,434	43,239,811	212,298,098	96,164	2,208
2020-21	110,875,743	76,542,763	18,108,128	15,587,722	81,857,520	302,971,876	92,846	3,263
2021-22	108,734,858	63,428,112	12,864,784	15,556,160	59,354,899	244,439,007	85,485	2,859

Source: Developed by LBFC Staff with data provided by PennDOT.

Road Maintenance and Preservation Program (RoadMaP)

SR 2021-53 directed the LBFC to review PennDOT's Road Maintenance and Preservation Program (RoadMaP), created in June 2016, its selection criteria, and the future stability of the program.

Act 2013-89 increased funding to the Motor License Fund (MLF) through higher liquid fuels taxes. However, more of the funding was going to support Pennsylvania State Police (PSP) operations rather than highway and bridge funding as initially intended. As a result, Act 2016-85 was enacted in June 2016 to reduce the PSP's appropriation by four percent each year through FY 2027-28, capping the PSP's appropriation from the MLF at \$500 million per year. This four percent was allocated to PennDOT for highway maintenance.

In 2017, due to Act 2016-85, PennDOT announced RoadMaP to invest more than \$2 billion in highway maintenance and highway and bridge capital projects beginning with FY 2018-19 through FY 2027-28. RoadMaP was intended to improve more miles of roads through low-cost savings.

During the review period, from FY 2018-19 through FY 2021-22, 605 miles were treated at \$59.6 million, a \$38.7 million dollar savings over traditional methods.

On December 29, 2021, the RoadMaP program was halted due to the need for funds for CMOs' core maintenance activities.

Engineering District Questionnaire

We distributed a questionnaire with assistance from the PennDOT Central Office to the district executives for each of its 11 Engineering Districts. The questionnaire consisted of 12 questions and was designed to solicit feedback from the Engineering District perspective versus the Central Office.

We asked questions regarding the funding formula, maintenance, maintenance funding, expenditures, winter operations, incident management, paving, and cost reduction. We received responses from all 11 PennDOT Engineering Districts.

SECTION I OBJECTIVES, SCOPE, AND METHODOLOGY



Why we conducted this study...

SR 2021-53 directed the Legislative Budget and Finance Committee to conduct a study and issue a report analyzing Pennsylvania state highway maintenance funding.

Objectives

Pennsylvania Senate Resolution 2021-53 (SR 2021-53)⁶ directed the Legislative Budget and Finance Committee (LBFC) to conduct a study and issue a report analyzing Pennsylvania state highway maintenance funding for the Pennsylvania Department of Transportation (PennDOT) and its 67 county maintenance offices (CMOs). See Appendix A for a copy of SR 2021-53.

The objectives for this study are as follows:

- 1) Determine whether the funding formula has appropriately funded the CMOs based on a review of maintenance needs versus maintenance allocation, including comparing the condition of the highways, bridges, and other assets. Determining the appropriateness of CMO funding shall also consider lane miles and bridges; vehicle miles traveled; and types of highways in the county, including 1997 population and future population projections.
- 2) Identify the distribution of highway maintenance funding directed to major, fixed expenditures, including personnel and benefit costs in each CMO.
- 3) Review state emergency funding totals by CMO for acts of nature such as flooding and landslides.
- 4) Compare PennDOT districts on the effects of winter maintenance.
- 5) Review PennDOT's Road Maintenance and Preservation (RoadMaP) program created in 2016 and its selection criteria and future program stability.

Scope

The scope of this study covered the period 1997 through 2021, with an emphasis on Fiscal Years (FYs) 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, and 2021-22. See Appendix A for a copy of SR 2021-53.

⁶ SR 53, PN 637 (2021) adopted by the Pennsylvania on Senate November 8, 2021, and approved by the LBFC officers on February 2, 2022.

Methodology

As a result of our communications with PennDOT, the agency provided us with data and information about state highway maintenance funding in the Commonwealth of Pennsylvania. Our communications with PennDOT also included a questionnaire to the District Executives (Professional Engineers/P.E. s) for the 11 PennDOT Engineering Districts. The PennDOT central office assisted us with the distribution of the 12-question questionnaire that we developed to garner insight and perspective at the district level regarding state highway maintenance.

To thoroughly understand this report's subject matter, we researched the Act 1997-3 state highway maintenance funding formula and the activities involved in state highway maintenance. Our research included reviewing and analyzing relevant statutes (e.g., Act 1997-3) and prior reports, including previous PennDOT performance audit reports conducted by LBFC.

We compared total county maintenance needs with the total funds designated to each county and reviewed the number and condition of lane miles and bridges in Pennsylvania. We reviewed all major fixed maintenance expenditures and those designated for emergencies. We gathered information regarding PennDOT's winter services operations and the costs for those operations. Finally, we reviewed PennDOT's RoadMaP Program.

Based on this research and the information obtained, we developed our report and its various exhibits.

PennDOT Engineering District Composition

This report discusses PennDOT's Engineering Districts and their respective county maintenance offices. The counties located in each district are as follows:

- Engineering District 1: Crawford, Erie, Forest, Mercer, Venango, and Warren.
- Engineering District 2: Center, Clearfield, Clinton, Cameron, McKean, Potter, Mifflin, Elk, and Juniata.
- Engineering District 3: Bradford, Columbia, Lycoming, Montour, Northumberland, Snyder, Sullivan, Tioga, and Union.
- Engineering District 4: Lackawanna, Luzerne, Pike, Susquehanna, Wayne, and Wyoming.
- Engineering District 5: Berks, Carbon, Lehigh, Monroe, Northampton, and Schuylkill.

- Engineering District 6: Bucks, Chester, Delaware, Montgomery, and Philadelphia.
- Engineering District 8: Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry, and York.
- Engineering District 9: Bedford, Blair, Cambria, Fulton, Huntingdon, and Somerset.
- Engineering District 10: Armstrong, Butler, Clarion, Indiana, and Jefferson.
- Engineering District 11: Allegheny, Beaver, Lawrence, and the Pennsylvania Turnpike Tunnel Maintenance Office.
- Engineering District 12: Fayette, Greene, Washington, and Westmoreland.

Acknowledgments

We thank PennDOT Secretary Michael Carroll and various agency staff for their assistance and cooperation in providing data and information, particularly Dan Farley, Director of the Bureau of Operations.

Important Note

This report was developed by the staff of the Legislative Budget and Finance Committee, including Chief Counsel & Project Manager Jason R. Brehouse, Esq., Project Manager Anne Witkonis, and Analyst Amy Hockenberry. The release of this report should not be construed as any indication that the Committee as a whole, or its individual members, necessarily concur with the report's findings, conclusions, or recommendations.

Any questions or comments regarding the contents of this report should be directed to the following:

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SECTION II BACKGROUND INFORMATION ON PENNDOT'S HIGHWAY AND BRIDGE MAINTENANCE FUNDING



Fast Facts

- ❖ *PennDOT is statutorily responsible for constructing, reconstructing, maintaining, and repairing all highways in the state highway system.*
- ❖ *PennDOT's 67 County Maintenance Offices (CMOs), divided geographically among 11 Engineering Districts (regional offices) are responsible for maintenance of Pennsylvania's state highways and bridges.*
- ❖ *PennDOT maintains over 83,000 state 12' equivalent lane miles or approximately 40,000 linear miles and over 25,000 state bridges.*
- ❖ *The Act 1997-3 state highway maintenance funding formula is based on the premise that more funding should be directed to counties with more significant needs (worse conditions).*

Introduction

PennDOT Responsibilities, Mission, and Goals

The Pennsylvania Department of Transportation (PennDOT)⁷ oversees the Commonwealth's transportation system. PennDOT is statutorily responsible for constructing, reconstructing, maintaining, and repairing all highways in the state highway system, along with administering the Aviation Code, the State Highway Law, the Public Transportation Law, the Vehicle Code, and other transportation-related laws and regulations.

The Governor's Executive Budget states that PennDOT's mission is to enhance, connect, and add value to communities by providing a sustainable, equitable transportation system and quality services for all. PennDOT programs and goals are configured as follows:

- *Transportation Support Services: To provide an effective administrative system supporting both non-highway and highway transportation programs.*
- **Highways and Bridges:** *To provide a safe and efficient state-administered highway network through road and bridge improvement, **as well as through ongoing maintenance activities, including winter traffic services** [emphasis added].*
- *Local Highway and Bridge Assistance: To assist local governments in the maintenance and construction of their portion of the total highway and bridge system.*
- *Multimodal Transportation: To support public transportation, intercity bus, intercity rail, rail freight, ports, aviation, and bicycle and pedestrian facilities options that improve the mobility and the quality of life for urban and rural Pennsylvanians and enhance economic activity throughout the Commonwealth.*
- *Driver and Vehicle Services: To minimize traffic accidents attributable to driver error and mechanically defective vehicles and to promote highway safety programs.*

⁷ PennDOT was originally established in 1911 as the State Highway Department. The agency's name was changed in 1923 to the Department of Highways, and in 1970 it was changed to the Department of Transportation.

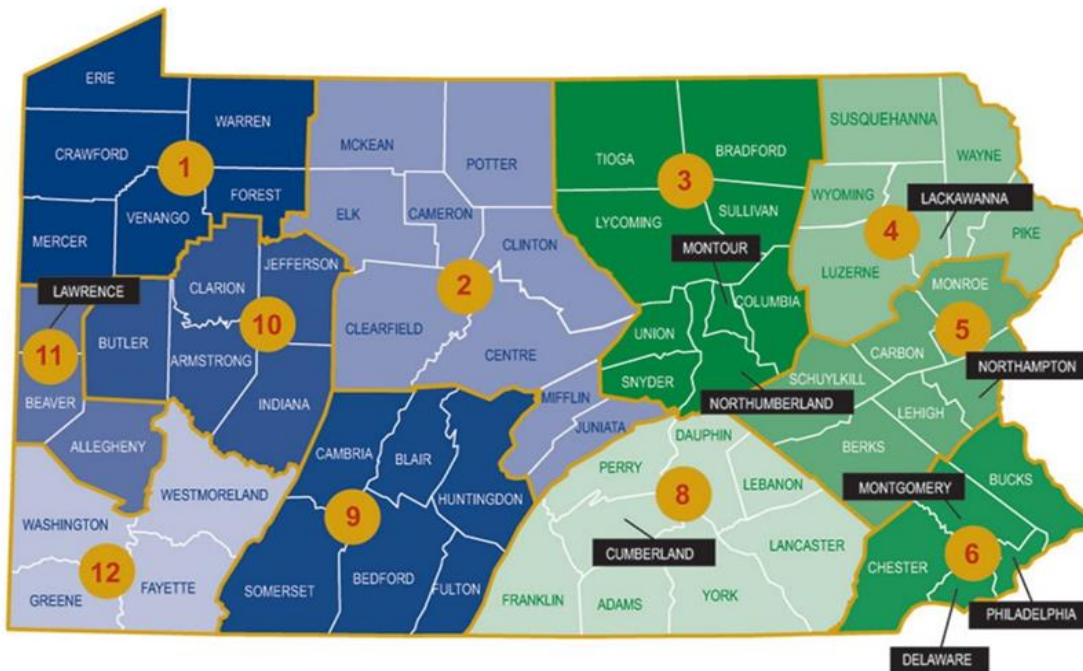
Engineering Districts and County Maintenance Offices

This report primarily focuses on the Pennsylvania state highway maintenance funding formula and its impact on the PennDOT county maintenance offices' (CMOs) state highway and bridge maintenance funding. Although PennDOT has a Central Office in Harrisburg, it is a decentralized organization. The decentralized nature of PennDOT allows each of the Engineering Districts and CMOs to elect to use either internal resources or external contractors to complete maintenance activities.

Exhibit 1 shows PennDOT's 67 CMOs,⁸ divided geographically among 11 Engineering Districts (regional offices) across the Commonwealth numbered one through 12 (with no number 7). Each Engineering District comprises and is responsible for three to nine CMOs.

Exhibit 1

PennDOT Engineering Districts and County Maintenance Offices



Source: PennDOT.

⁸ Some of the 67 CMOs (normally CMOs located in the smaller rural counties in terms of state highway miles and CMO staff) within a respective Engineering District are deemed a "combined county", which allows the CMOs to share key managerial and administrative staff (e.g., county manager, Roadway Programs Coordinator, Equipment Manager, Roadway Programs Technician). CMOs, whether designated combined, maintain separate office space and facilities within their respective counties.

Exhibit 2 highlights that PennDOT maintains over 83,000 state 12' equivalent lane miles or approximately 40,000 linear miles⁹ and over 25,000 state bridges and further shows their distribution by PennDOT Engineering Districts.¹⁰ PennDOT's Engineering Districts and CMOs are responsible for the overall maintenance of these state highways and bridges to ensure their safety, quality, and longevity.

Exhibit 2

State Highway Miles and Bridges Per Engineering District

Engineering District	12' Equivalent Lane Miles (as of 2/28/22)	Linear Miles (2021)	Bridges ^{a/} (as of 6/30/22)
1	7,423	3,686	2,071
2	6,740	3,478	2,191
3	8,113	4,240	2,905
4	7,440	3,614	2,110
5	7,327	3,287	2,145
6	9,728	3,552	2,771
8	11,256	5,229	3,398
9	7,176	3,751	2,102
10	5,959	3,123	1,618
11	5,088	2,160	1,797
12	6,987	3,595	2,343
Total	83,237	39,714	25,451

^{a/} This number reflects state bridges over eight feet in length.

Source: Developed by LBFC staff with data provided by PennDOT.

State Highway and Bridge Maintenance

Maintenance. The Pennsylvania SHMFF uses the following definition for "highway maintenance" as found in the Pennsylvania Vehicle Code:¹¹

⁹ Linear mile is the equivalent of one mile of highway, bi-directional, inclusive of all lanes and shoulders and 12' equivalent lane mile is the equivalent of one mile of highway and 12 feet in width.

¹⁰ Less than one percent of state-owned highways are considered unpaved (i.e., gravel, cinder, or earth).

¹¹ Vehicle Code – 75 Pa.C.S. § 9101 (Definitions).

"Highway maintenance." *A program to preserve, repair and restore a system of existing State roadways with its elements to its designed or accepted configuration. System elements include but are not limited to travel way surfaces, shoulders, roadsides, drainage facilities, bridges, tunnels, signs, markings, lighting, and fixtures. Included in the program are such traffic services as lighting and signal operation, snow and ice removal, and operation of roadside rest areas. Highway maintenance programs are developed to offset the effects of weather, organic growth, deterioration, traffic wear, damage, and vandalism. Deterioration would include effects of aging, material failures, and design and construction faults to existing state highways.*

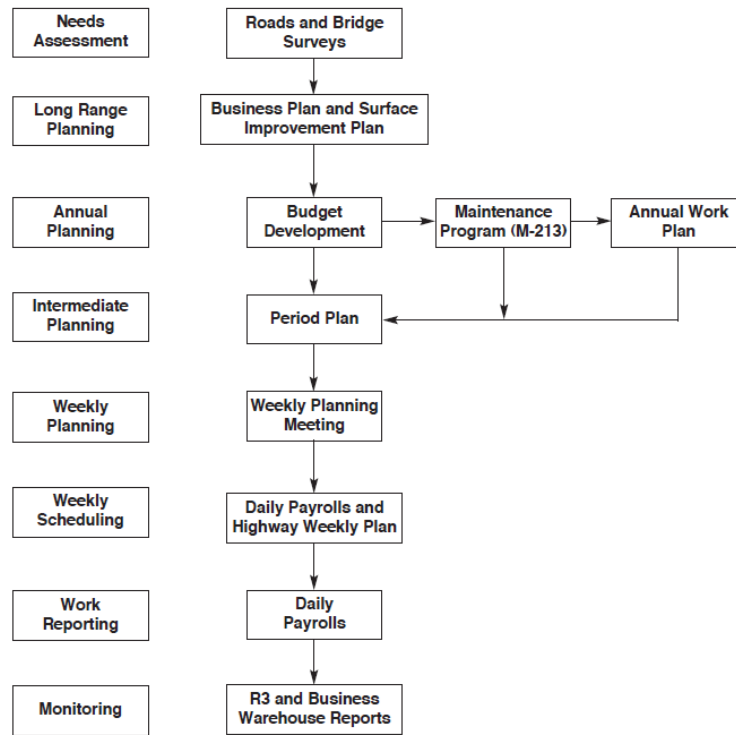
Highways needing repair are estimated to cost the average motorist in the United States \$599 annually, a total of \$130 billion nationally. The costs to motorists include additional vehicle repair costs, accelerated deterioration and depreciation, increased maintenance costs, and additional fuel consumption.

Maintenance Planning. Highway maintenance requires proper planning to 1) ensure each part of the PennDOT organization knows when, how, and what to contribute towards maintaining the state highway system, 2) ensure the organization is efficiently performing maintenance operations, 3) minimize maintenance costs, and 4) facilitate achieving maintenance goals. The Department plans highway maintenance based on available resources, budgets, and maintenance needs.

PennDOT's recommended planning and scheduling process for maintenance operations, beginning with a needs assessment of state-owned bridges and highways, is shown in Exhibit 3.

Exhibit 3

Maintenance Planning and Scheduling Flowchart



Source: PennDOT.

Customer concerns¹² and condition surveys conducted by PennDOT provide essential information regarding a state highway's condition, serviceability, and safety by providing the basis for identifying and responding to maintenance needs.

At least once a year, PennDOT identifies maintenance needs using a Roadway Condition Survey (RCS) on each county's state highways and bridges. The Department identifies conditions warranting corrective or preventive maintenance throughout the year. Data collected through the RCS process is used in conjunction with the condition data identified using the Systematic Technique to Analyze & Manage Pennsylvania's Pavements (STAMPP) and customer concerns to establish the foundation for each level of maintenance planning is structured.

¹² Customer Care Center (CCC) is an intranet/internet based computer database application that collects, assigns, and tracks the progress of incoming customer concerns submitted via a number of sources and methods, such as direct inquiries by customers via the CCC web page, telephone calls (e.g., Engineering Districts, CMOs, 1-800-FIX-ROAD) in person by a customer via field personnel, police incident reports, and local governments (i.e. 311 Systems in the cities of Philadelphia and Pittsburgh).

STAMPP, implemented by PennDOT in the early 1980s, is a distress survey that provides quantified location-specific condition data on the state highway system. Exhibit 4 shows how the Department uses STAMPP data.

Exhibit 4

STAMPP Data Uses

PennDOT uses STAMPP data to provide the following:

- Uniform statewide condition evaluation to enhance decision-making.
- Management with information and tools to monitor network conditions, assess future needs, establish county-level condition rankings, and optimize investments.
- Information for monitoring the performance of various pavement designs, materials, rehabilitation, and **maintenance techniques**.
- Identify candidate projects for the **maintenance** and betterment program.
- **Condition information necessary to allocate Additional State Funds under the ASHMA portion of the funding formula (in addition to the base allocation funding amounts) that is distributed based in part on each county's condition rating relative to every other county. Ratings are based on dollar need, which are the calculated costs of the required maintenance necessary to address the pavement, shoulder, guide rail, and drainage distresses.**

Source: Developed by LBFC staff with information provided by PennDOT.

PennDOT collects pavement and shoulder condition data for Pennsylvania's National Highway System (NHS), including interstate and non-interstate routes and one-half of all others annually. This results in condition data being collected for the entire state highway system every two years. The Department surveys state route [highway] guide rail system and drainage items on a four-year cycle.

Since 1997, STAMPP has utilized video logging (also known as the Automated Pavement Distress Condition Survey program) to collect roadway imagery and data via cameras mounted to a video log van to survey the condition of bituminous and cement concrete pavement.¹³ Meanwhile, Manual Condition Surveying collects distress condition data for continuously reinforced concrete (CRC) pavement, unpaved highways, shoulders, guide rails, and drainage systems. Manual distress surveys are performed by a two-person team consisting of a driver and an evaluator as they travel in a vehicle along the shoulder. The conditions' type, severity, and extent are noted on standardized survey forms developed for laptops or

¹³ Video logging data has been collected by the same contracted vendor on behalf of PennDOT since 1997. Video logging data is collected using a fleet of two Video log vans.

tablets.¹⁴ Video logging and Manual Condition Surveying data are loaded into the Roadway Management System (RMS). PennDOT can access RMS data, and STAMPP reports can be generated in addition to other reports, such as Roadway Management, Pavement History, and Posted and Bonded, etc.

RMS is the system of record for state-owned highways that maintains an inventory of highway features, conditions, and characteristics. RMS provides PennDOT with the information necessary for funding, business planning, project design, maintenance programming, and information for the annual allocation of maintenance funding.

The types of data stored and managed in RMS include geometric information, traffic information, pavement and shoulder history, maintenance history, municipal and legislative boundaries, intersections, roadside features, structure locations, railroad crossing information, pavement testing, condition survey information (including guide rail and drainage) and posting/bond information.

One of the essential features of RMS is that it provides a viewable representation of every state highway in every county via a graphical diagram called a straight-line diagram (SLD) that is updated annually.

PennDOT's Maintenance Manual (Pub. 23) indicates that pavement management is a standardized process to establish a systematic approach to maintaining state-owned highways. PennDOT's Maintenance Manual further states:

For purposes of business planning to establish performance metrics and report information, four [business planning] networks have been established and are listed below from highest to lowest priority for routine maintenance and repair:

- *Business Planning Network 1: Interstate.*
- *Business Planning Network 2: National Highway System (NHS), non-interstate.*
- *Business Planning Network 3: Non-NHS routes with Average Daily Traffic (ADT) equal to or greater than 2,000.*
- *Business Planning Network 4: Non-NHS routes with ADT less than 2,000.*

As reflected in the PennDOT Maintenance Planning and Schedule Flowchart, there are numerous levels of planning:

- *Long-range/strategic planning* is the highest level of planning and is the process of determining the organization's long-term

¹⁴ Manual surveys are typically performed by temporary Engineering, Scientific, and Technical Interns (ESTI) hired during summer months.

goals and identifying the best approach to achieving them. The strategic plan can cover up to 12 years. The CMOs use these goals to develop county-level long-range planning that typically covers four to five years. The long-range plan sets the direction for all subsequent levels of planning, which directs the day-to-day maintenance activities in the counties. The annual development of an updated Surface Improvement Plan is a primary emphasis of Engineering Districts and CMOs, concerning the long-range planning process. This plan includes projected miles and dollars for several categories (e.g., betterment, resurfacing, widening, leveling, sealing, and surface repair) that cover four to five years. The county Surface Improvement Plan is a significant driving force during the annual budget development process since it includes projects that consume most of the funding in each county.

- *Annual planning* involves Engineering Districts and CMOs developing a budget for the next fiscal year, and it is usually prepared in conjunction with submitting the annually updated Surface Improvement Plan. Annual highway maintenance funds are distributed as determined by the SHMFF discussed below. The individual CMOs' operational budgets represent an amount after deducting various costs such as central and district office overhead funding, Engineering District office cross-charge cost, CMO personnel cost, fixed expenditures (e.g., capital outlay, etc.), and maintenance contract costs. The annual plan also involves developing a work plan identifying the type and amount of work to be completed within the upcoming fiscal year.
- *Intermediate planning* adds more detail to the annual work plan and ensures maintenance operations are correctly performed. For example, a pipe should be replaced before a road is paved. Intermediate planning identifies all PennDOT force assemblies to be performed during the scheduling period, which foreman will perform the work, planned production units to be completed, the time of year the work will be done, and where the assemblies will be performed. The intermediate plan helps to coordinate maintenance operations with other public or private roadway users and stakeholders (e.g., other planned PennDOT, Highway Occupancy Permits, utility projects, or other special events).
- *Weekly planning* is primarily based on a CMOs' intermediate plan. It involves weekly planning meetings that allow the coordination of available resources (i.e., staffing, equipment, and materials) to ensure that the work identified in the initial planning efforts is completed.

Maintenance Operations. State highways and bridges throughout Pennsylvania experience high traffic volumes and the effects of inclement weather. As a result, Pennsylvania's highways and bridges require regular maintenance that includes the following:

- *Surface treatment (oil and chip)* – Oil is sprayed on highways with a fine layer of stone applied immediately after to extend the life of low-traffic volume roads for three to five years.
- *Shoulder cutting* – Removes excess material and debris from unpaved (turf/gravel) shoulder areas to improve drainage. It prevents water collecting on highways that could cause icing in the winter, which can weaken surfaces and cause potholes to form.
- *Shoulder grading* – Involves the shaping and stabilization of shoulder areas on unpaved highways and eliminates drop-offs between the highway edge and the shoulder. It allows water to drain away, thereby preventing ruts from forming that may allow water to enter and damage the highway's edge.
- *Shoulder patching* – Involves patching and crack/joint sealing of paved (concrete/asphalt) shoulders like that of a highway of the same surface type.
- *Pipe replacement and cleaning* – Essential to maintaining controlled and adequate water flows around highways, in that uncontrolled water flow damages both the highway surface and the area underneath. Pipe replacement is a year-round operation that involves cutting the highway surface, creating a trench, installing the pipe, and filling and repaving the area.
- *Mechanized patching* – Improves surface smoothness and is used to patch limited highway areas with extensive potholes, large areas of surface cracking, and depression. It involves filling large holes or low areas and applying an asphalt layer to the patched area.
- *Manual/Pothole patching* – Pothole patching consists of two types:
 1. *Hot mix* – A permanent pothole patch that involves cutting a square hole that is cleaned and treated with a tack-coat of asphalt.
 2. *Cold patch* – Designed as a temporary pothole patch (although it can last up to two or more years), it involves a mixture of asphalt, soap, water, and fine stone placed in the pothole with a shovel and compacted.
- *Joint and crack sealing* – Involves removing debris from the joint or crack to be sealed before applying a liquid asphalt sealant.
 1. *Joint sealing* - Used to seal the joints on concrete highways to prevent stones and other hard materials from being deposited between the slabs of concrete, which might prevent them from expanding and contracting with temperature changes.

2. Crack sealing prevents water from seeping into asphalt cracks, which can lead to potholes and break-ups in highways.
 - *Winter operations* – Winter maintenance involves applying de-icing materials with spreaders on all state highways and bridges, including snow and ice removal. De-icing activities utilize a mixture of salt to melt ice/snow and anti-skid (small stones) to provide traction. Anti-icing is another tool that involves treating highways with brine (salt water) before freezing precipitation falls. PennDOT plows and salts major highways before moving onto less traveled roads.
 - *Vegetation management* – Involves mowing approximately 112,000 acres annually from May through October, pesticide spraying in areas where mowers cannot safely travel, and select tree thinning.
 - *Line painting* – PennDOT crews apply more than 1.4 million gallons/100,000 miles of white and yellow traffic line paint to state highways annually.
 - *Bridge maintenance* – Encompasses structural repair/corrective maintenance (routine and emergency), preventive maintenance (e.g., cleaning and flushing), activities involving the basic components of a bridge, and traffic safety features – shown in Exhibit 5.¹⁵

PennDOT inspects most state bridges at least once every two years, although bridges in poorer condition may be inspected annually.¹⁶ Most bridges – over 16,000 - must be cleaned annually, which involves deck washing, cleaning drainage outlets, and cleaning and lubricating expansion bearing assemblies. Preventive bridge maintenance and preservation activities include bridge cleaning, spot painting, joint sealing/repairs, guide rail/median barrier repairs/replacement, drain installation/repair, substructure repair/underpinning/repointing, culvert repair/replacement, streambed maintenance, and brushing activities. Structural repair maintenance activities include steel stringer or floor beam or girder repair, galvanized channel repair, bearing pedestal repair, resetting bearings, concrete deck repair, pier repairs, abutments crack repairs, masonry repointing, structure mount railing repair, etc.

- *Signage* – PennDOT is responsible for reviewing installed signs and determining if a sign needs to be repaired or replaced due to age, fading, loss of reflectivity, vandalism, damage, or other

¹⁵ "Preventative maintenance" is a planned strategy of treatments on a bridge to preserve it in its present condition and to slow future deterioration to avoid corrective maintenance, such as structural repairs. It does not include structural repairs, reconstruction, or replacement.

¹⁶ Federal Highway Administration requires all bridges greater than twenty feet on public highway systems be inspected at regular intervals, not to exceed two years. Meanwhile, PennDOT has established a policy requiring all bridges under its jurisdiction that are eight feet or greater must at least be inspected on a two or four-year cycle.

reason. PennDOT oversees approximately 1.3 million state-owned signs and produces about 85,000 yearly.

- *Buildings and grounds* – CMOs are responsible for the maintenance and repair of county maintenance facilities, which include offices, equipment facilities, roadside rest areas, truck escape ramps, scenic overlooks, and other lands owned or leased by PennDOT that are not considered part of the highway right-of-way.

Additionally, unscheduled maintenance services are often required due to flooding, landslides, windstorms, sinkholes, and other acts of nature.¹⁷

Exhibit 5

Basic Bridge Components

Bridge Components	Definition
Deck	The deck is the portion of the bridge that provides a surface for vehicular or pedestrian traffic.
Superstructure	The superstructure is the portion of a bridge above and includes the bearing device that supports the deck and vehicular or pedestrian traffic and transfers the applied loads to the bridge substructure. The major components include the deck, beams or girders, parapets, railings, sidewalks, curbs, drainage features, joints, and bearings.
Substructure	The portion of a bridge below the bearing device built to support the superstructure and transmit loads to the foundation. The main components are abutments, wing walls, piers, bents, and footings.
Approach Roadway	The approach slabs that lead onto the bridge, which are usually concrete.
Traffic Safety Features	Bridge railings, parapets, approach guide rails, transitions, and end treatments.

Source: Developed by LBFC staff with information provided by PennDOT.

International Roughness Index (IRI). PennDOT also reports on state-owned highway system rideability and pavement smoothness based on data collected and rated according to the IRI, which simulates a response to highway deviations and acts as an expression of the rideability of the highway as vehicle passengers experience it. Pavement roughness testing is performed annually on approximately 30,000 miles of state highways, which includes the Commonwealth's entire National Highway System (NHS) and half of its non-NHS routes. Unlike many other states, Pennsylvania's state network includes several low-volume highways.

¹⁷ Events that are declared national disasters are eligible for federal assistance, which generally covers about half of the unscheduled maintenance.

While IRI roughness testing by PennDOT determines highway pavement roughness and fair or poor ratings often correlate to increased repair costs for motorists, IRI is also part of what PennDOT reports as part of Pennsylvania's pavement condition or network assessment. However, rougher roads reflect conditions that require treatment and additional resources. IRI rankings are one of the factors PennDOT reviews to determine how and where state highway maintenance funding is spent.

The various classes of state-owned highways are ranked/rated either excellent, good, fair, or poor based on the IRI value (a lower number is better). Exhibit 6 shows the ranking categories for the different classes of state-owned highways.

Exhibit 6

IRI Ranking Categories

IRI Ranges (Inches per mile)	National Highway System		Non-National Highway System	
	Interstate	Non-Interstate	Average Daily Traffic \geq 2000	Average Daily Traffic $<$ 2000
≤ 70	Excellent	Excellent	Excellent	Excellent
71-75	Good	Good		
76-100	Fair	Good	Good	Good
101-120		Fair	Fair	
121-150	Poor	Fair	Fair	Fair
151-170		Poor	Poor	Poor
171-195		Poor	Poor	Poor
196-220	Poor	Poor	Poor	Fair
>220				Poor

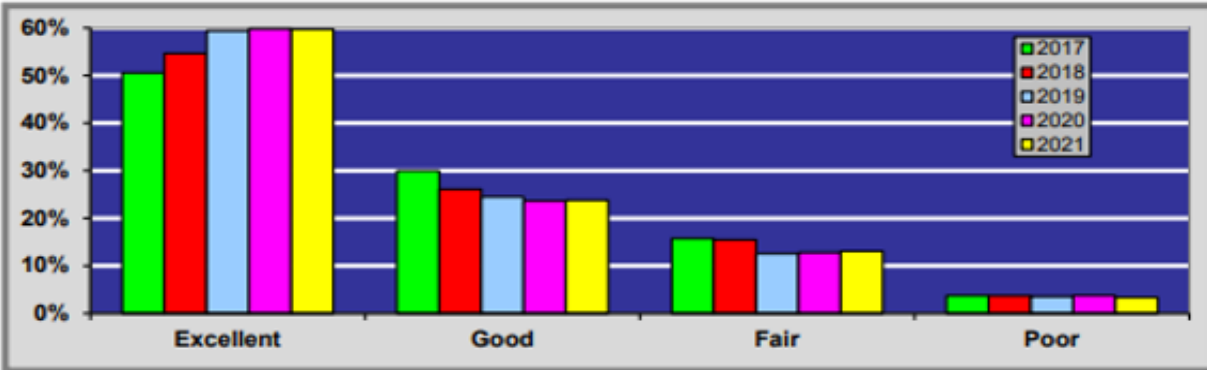
Source: PennDOT.

Exhibits 7 through 10 provide a statewide summary of the IRI rankings of Pennsylvania's state highway mileage by each of the four classes of state-owned highways for 2017 through 2021. A combined review of the IRI mileage rankings for the four classes of highways indicates that less than five percent of Pennsylvania state-owned interstates received a poor ranking. In contrast, the lower volume highways (non-NHS Routes with

average daily traffic (ADT) of less than 2,000 vehicles) reflect poor rankings consistently over 30 percent.

Exhibit 7

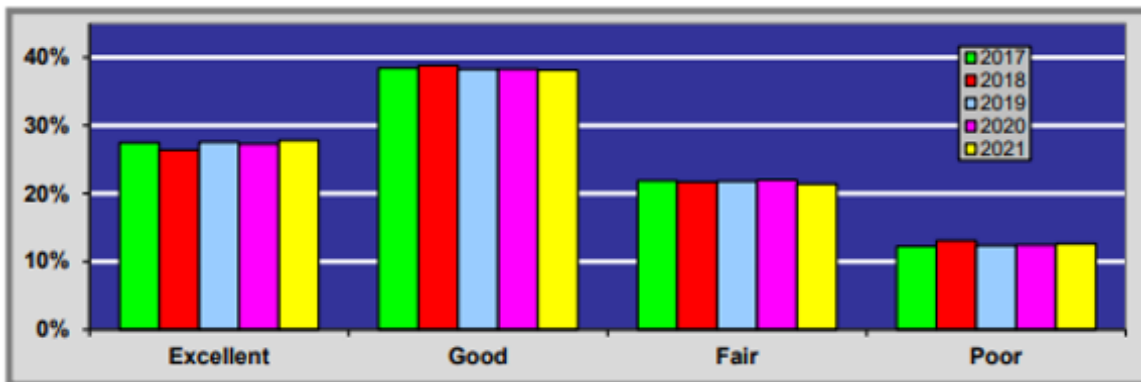
IRI – Interstate Mileage Ranking (2017-2021)



Source: PennDOT.

Exhibit 8

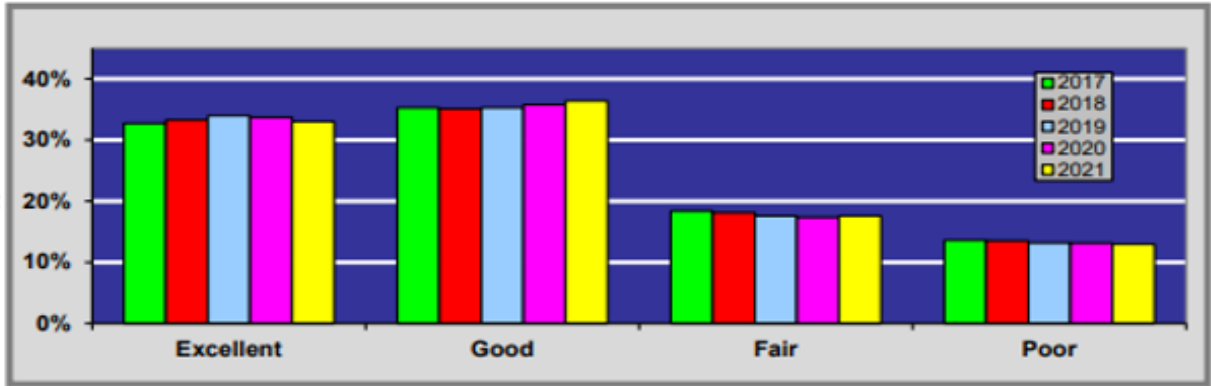
IRI – NHS Non-Interstate Mileage Ranking (2017-2021)



Source: PennDOT.

Exhibit 9

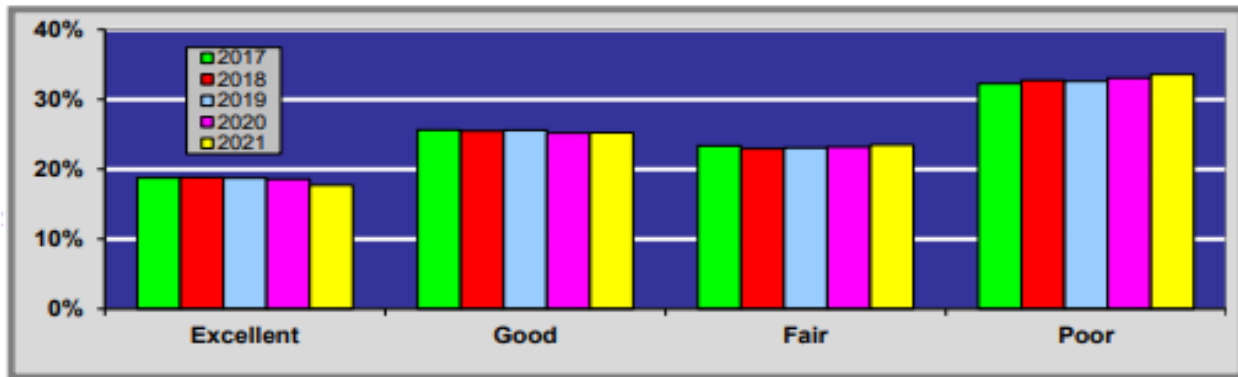
IRI – Non-NHS with ≥ 2000 Mileage Ranking (2017-2021)



Source: PennDOT.

Exhibit 10

IRI – Non-NHS with < 2000 Mileage Ranking (2017 – 2021)



Source: PennDOT.

Operations and Performance Office (OPO) and County Accreditation to Share Best Practices.

PennDOT established its Operations and Performance Office (OPO) in 2017 to provide support to its Engineering Districts and CMOs to share best practices and innovations that enable highway maintenance activities to be

efficient and effective, particularly given the limited availability of resources. OPO's foundation was built on the principles of the County Accreditation initiative,¹⁸ which seeks:

- *A commonality in improvements and efficiency while also acknowledging and respecting that differences exist among Engineering Districts and CMOs, and*
- *To fully understand statewide and county maintenance budgets and their constraints.*

County Accreditation principles focus on Budget Planning & Scheduling, Human Resources, Fleet Management, Business of Maintenance, and Winter Operations. To set the direction for future operations, OPO developed and implemented the maintenance business model focusing on the following three goals: core maintenance, winter operations, and the effectiveness of available resources. OPO seeks to communicate effectively and collaborate with the maintenance community and its partners. The following reflects some of OPO's essential functions:

- Acting as the lead on County Accreditation.
- Building and maintaining relationships between the PennDOT Central Office, Engineering Districts, CMOs, and all internal and external partners.
- Managing and evaluating Engineering Districts' and CMOs' implementation of maintenance budgets, utilization of personnel, fleet and equipment inventories, and materials, and identifying areas of potential improvement.
- Establishing and managing core maintenance activities and the timeframe for completion.
- Designing, developing, promoting, and conducting various maintenance training programs.

PennDOT Engineering Districts and CMOs Organizational Structure and Staffing related to State Highway and Bridge Maintenance

Maintaining Pennsylvania state highways and bridges requires a significant monetary and staff commitment at the Engineering District and CMO levels. PennDOT indicated that over the past five years, it lost a great deal of management and supervisory staff, with approximately 35 percent of its maintenance field staff, representing a significant loss of essential maintenance and institutional knowledge.

¹⁸Each Engineering District conducted a County Accreditation effort to identify best practices and innovations, challenges, and establish ways to identify opportunities more actively for consistency and to utilize best practices as PennDOT continues to utilize and modernize strategies to maximize maintenance funding.

Engineering District Staffing. Engineering Districts oversee numerous PennDOT Central Office functions at the district level (i.e., administration, construction, design, and maintenance). Each Engineering District maintains its staffing, although staffing positions vary among districts. Staff is divided into three types of classes: full-time consultant, full-time permanent, and seasonal temporary, as shown in Exhibit 11. These positions are further delineated into units: administrative, construction, design, and maintenance.

Engineering District Maintenance Unit staff provide technical support and assist with managing shared programs between CMOs within a district. The Maintenance Unit staff ensures that CMOs follow appropriate policies and procedures and support CMOs in various ways (e.g., district line painting crews, technical training, etc.).

Exhibit 11

Engineering Districts Staff ^a

Engineering District	Full-Time Consultant	Full-Time Permanent	Seasonal Temporary	Total District Staff
1	39	45	32	116
2	32	59	10	101
3	45	53	21	119
4	81	69	50	200
5	116	56	17	189
6	243	104	4	351
8	144	60	9	213
9	27	56	22	105
10	50	53	26	129
11	103	65	13	181
12	40	58	54	152
Total:	920	678	258	1,856

^a As of August 16, 2022.

Source: Developed by LBFC staff with data provided by PennDOT.

The administrative unit reports directly to the District Executive and is responsible for its human resources, community relations, information technology (IT), and fiscal/budgeting aspects.

The construction unit is headed by the Assistant District Executive for Construction, who oversees the completion of state and federally funded construction projects in each district. The construction unit is further divided into smaller divisions within its part of a project.

The Assistant District Executive for Design leads the design unit. This unit consists of professional and technical employees responsible for the planning and programming, plan development, and annual letting of highway and bridge projects. Highway and bridge project plans are produced in-house or through consulting engineers.

The final unit is the maintenance unit. This unit includes both district and some CMOs staff led by the Assistant District Executive for Maintenance. The maintenance unit is responsible for the day-to-day maintenance and operation of the highway network in each district, including roadways, bridges, culverts, traffic control, and safety programs.

County Maintenance Office Staffing. Each CMO has staffing that works specifically in that county. CMOs staff, including all field-work and supporting positions, are engaged in highway and bridge-related maintenance functions.

CMOs' organizational structure includes administrative, human resource, technical, management, and field staff. CMO staff provide the necessary functions to maintain the facilities within their counties, which include the operation of state roadways, bridges, and other critical transportation assets throughout the county.

In some instances, CMOs combine operations, known as combined or dual counties, which are structured similarly to a typical CMO, except the County Manager, Equipment Manager, and Roadway Programs Coordinator typically split their time between both counties. Additionally, roadway program technician positions may also divide their time, depending on the size of each combined county.

Exhibit 12 shows the staffing of each CMO by Engineering District.

Exhibit 12

County Maintenance Office Staffing

District	CMOs	Full-Time Consultant	Full-Time Permanent	Seasonal Temporary	Total Staff
1 ^a	Crawford	-	124	33	157
	Erie	-	138	54	192
	Forest	-	30	12	42
	Mercer	-	125	32	157
	Venango	1	87	29	117
	Warren	-	86	24	110
	Total		1	590	184
2 ^a	Centre	-	112	41	153
	Clearfield	-	127	60	187

Exhibit 12 Continued

District	CMOs	Full-Time Consultant	Full-Time Permanent	Seasonal Temporary	Total Staff
	Clinton	-	63	15	78
	Cameron	-	18	6	24
	McKean	-	65	28	93
	Potter	-	75	22	97
	Mifflin	-	43	26	69
	Elk	-	46	21	67
	Juniata	-	50	29	79
	Total	-	599	248	847
3 ^a	Columbia	-	104	24	128
	Lycoming	-	130	24	154
	Montour	-	33	8	41
	Northumberland	-	96	18	114
	Snyder	-	52	9	61
	Sullivan	-	37	7	44
	Tioga	-	105	26	131
	Union	-	43	10	53
	Bradford	-	129	33	162
	Total	-	729	159	888
4	Lackawanna	1	109	64	174
	Luzerne	1	128	75	204
	Pike	1	53	48	102
	Susquehanna	2	107	57	166
	Wayne	-	92	39	131
	Wyoming	-	52	31	83
	Total	5	541	314	860
5	Berks	3	105	48	156
	Carbon	1	54	22	77
	Lehigh	2	94	27	123
	Monroe	-	90	37	127
	Northampton	2	89	34	125
	Schuylkill	-	107	43	150
	Total	8	539	211	758
6	Bucks	1	122	23	146
	Chester	4	133	22	159
	Delaware	3	72	22	97
	Montgomery	5	125	28	158
	Philadelphia	-	68	32	100
	Total	13	520	127	660
8	Adams	-	76	35	111
	Cumberland	1	102	33	136
	Franklin	-	89	26	115
	York	-	150	56	206

Exhibit 12 Continued

District	CMOs	Full-Time Consultant	Full-Time Permanent	Seasonal Temporary	Total Staff
	Dauphin	-	106	29	135
	Lancaster	-	151	40	191
	Lebanon	-	64	28	92
	Perry	-	63	30	93
	Total	1	801	277	1,079
9 ^a	Bedford	-	116	59	175
	Blair	-	87	44	131
	Cambria	-	116	50	166
	Fulton	-	69	29	98
	Huntingdon	-	90	40	130
	Somerset	-	132	40	172
	Total	-	610	262	872
10	Armstrong	-	114	41	155
	Butler	-	129	55	184
	Clarion	-	88	38	126
	Indiana	-	133	46	179
	Jefferson	-	95	26	121
	Total	-	559	206	765
11	Allegheny	1	201	53	255
	Beaver	-	96	46	142
	Tunnel	-	72	11	83
	Maintenance	-	-	-	-
	Lawrence	-	61	34	95
	Total	1	430	144	575
12	Fayette	-	107	84	191
	Greene	-	81	50	131
	Washington	2	165	49	216
	Westmoreland	1	180	83	264
	Total	3	533	266	802
Grand Total		32	6,451	2,398	8,881

^a These Engineering Districts all contain counties designated by PennDOT as combined counties. Combined counties are highlighted in corresponding colors. Per PennDOT, combining counties allows for sharing some staff in certain key positions, such as management and administrative staff. County Managers are typically responsible for two counties.

Source: Developed by LBFC staff with data provided by PennDOT as of August 16, 2022.

Maintenance Budget and State Highway Maintenance Funding Formula

Maintenance Budget

The variety of maintenance operations for which PennDOT is responsible requires significant equipment, materials, personnel, and money. During FY 2021-22, PennDOT's total state highway maintenance budget in terms of state monies was approximately \$1.7 billion. This does not include the estimated overall additional highway maintenance funding needs of \$4.2 billion in FY 2021-22.¹⁹ This shortfall in highway maintenance funding is based on the annual requirement to perform cyclical maintenance activities.

While a state highway maintenance budget of over one billion dollars reflects significant funding, PennDOT representatives indicated more funds are needed to cover necessary repairs and maintenance to Pennsylvania's state transportation system. PennDOT said it lacks sufficient funding to increase state highway maintenance without significantly impacting highway and bridge construction projects.

Pennsylvania's annual state highway maintenance budget needs information is collected by PennDOT's Bureau of Operations and the Pennsylvania SHMFF factors are calculated by its Bureau Fiscal Management. The PennDOT Engineering Districts and CMOs are also a part of the process to calculate the annual state highway maintenance budget based on SHMFF, which in part factors in the number of 12' equivalent lane miles. Exhibit 13 reflects the actual gross allocation dollar amounts of the state highway maintenance budget for the indicated fiscal years and the corresponding portion of maintenance funding for each of the Engineering Districts for FY 2021-22.²⁰

¹⁹ The \$1.7 billion and \$1.3 billion amounts referenced in this report reflect state funds used for state highway maintenance funding. However, in any given fiscal year there may also be additional monies that augment the state appropriations and/or federal appropriations (by the Pennsylvania General Assembly or executive authorization (EA) by the governor to spend federal monies).

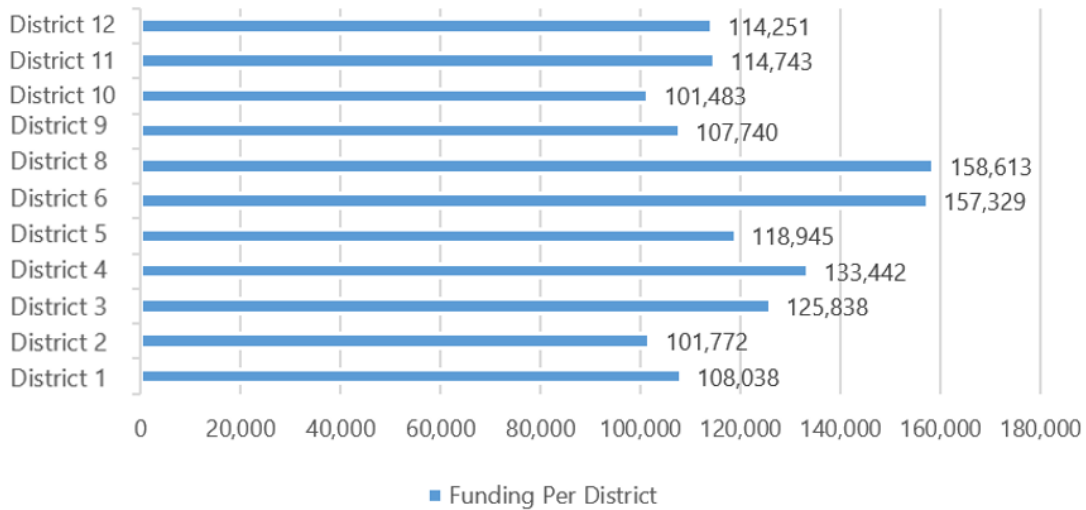
²⁰ The actual amount distributed of the Gross Allocation amount to the 67 CMOs within each of the 11 PennDOT Engineering Districts is net of the portion taken out for the PennDOT Central Office highway maintenance budget.

Exhibit 13

State Highway Maintenance Funding
 (In Thousands)

Fiscal Year	A-582 Highway Maintenance Appropriation ^{a/} (Nonrestricted)	A-181 Highway Maintenance Excise Tax EA ^{b/} (Act 1991-26)	A-174 Highway Maintenance Enhancement EA ^{c/} (Act 1997-3)	Extinct Appropriation ^{d/}	Gross Allocation ^{e/}	Lapses	Appropriation Total
1997-98	\$625,585	\$124,866	\$88,771	\$102,100	\$ 946,822	-\$5,500 ^{f/}	\$ 941,322
2015-16	859,000	221,652	248,655	-	1,329,307	-	1,329,307
2016-17	908,899	168,843	252,676	-	1,330,418	-	1,330,418
2017-18	860,542	194,178	285,598	-	1,340,318	-	1,340,318
2018-19	860,860	190,106	280,352	-	1,340,318	-9,000 ^{g/}	1,331,318
2019-20	802,054	185,997	275,267	-	1,263,318	-	1,263,318
2020-21	797,296	162,507	238,861	-	1,198,664	-	1,198,664
2021-22	896,879	178,795	266,520	-	1,342,194	-	1,342,194

Funding Breakdown by PennDOT Engineering District of \$1.3 Billion (FY 2021-22)



^{a/} The statutory authority for the highway maintenance appropriation is Act 1970-120, which established the Department of Transportation and the annual Appropriation Act(s) for the corresponding fiscal years.

^{b/} Highway maintenance appropriation supplemented by additional restricted funds according to Act 1991-26.

^{c/} Highway maintenance appropriation-supplemented by additional restricted funds according to Act 1997-3.

^{d/} Extinct Appropriations were one-time executive authorizations (EA) for Surface Improvements EA and Smoother Roads EA that no longer exist.

^{e/} "Gross Allocation" represents the overall appropriation for state highway maintenance funding at the beginning of each fiscal year dispersed among the CMOs according to the funding formula with a corresponding portion held back from each CMO for the PennDOT Central Office maintenance budget/functions.

^{f/} In FY 1997-98, the \$5.5 million represented a lapse in the Act 1997-3 funding as revenues came in lower than estimated. In this instance, each CMO had to return a corresponding amount of its portion of the "Gross Allocation" it had received at the beginning of the fiscal year.

^{g/} In FY 2018-19, a \$9 million revenue shortage reflected both Act 1991-26 and Act 1997-3 revenues below estimate. In this instance, PennDOT elected to lapse the funding from its central office maintenance budget so that CMOs were unaffected and the counties were held harmless.

Source: Developed by LBFC staff with data provided by PennDOT.

Exhibit 14 reflects the additional annual executive authorization (EA), the Expanded Highway and Bridge Maintenance Allocation (per Act 1997-3 and Act 2013-89). These funds supplement the gross allocation dollar amounts of the state highway maintenance budget. They are shown by fiscal year and the corresponding portion of funding for each of the Engineering Districts for FY 2021-22.

The Expanded Highway and Bridge Maintenance Allocation executive authorization is shown separately by PennDOT. Under Act 2013-89, the Department initially used this additional allocation for specific projects. Over

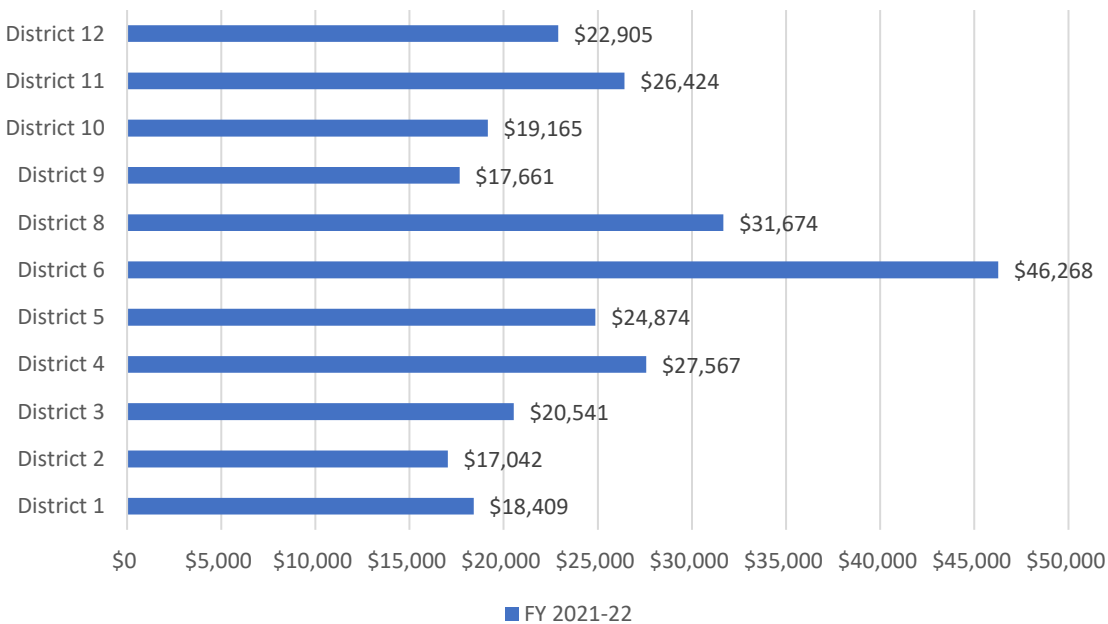
time PennDOT used the funding for routine highway maintenance and county operating budgets.²¹

Exhibit 14

**Expanded State Highway and Bridge Maintenance Allocation
 (In Thousands)**

Fiscal Year	A-409 Expanded Highway and Bridge Funding EA ^{a/} (Act 1997-3 & Act 2013-89)	Fiscal Year	A-409 Expanded Highway and Bridge Funding EA ^{a/} (Act 1997-3 & Act 2013-89)
1997-98	N/A ^{b/}	2018-19	\$344,222
2015-16	\$296,335	2019-20	\$329,021
2016-17	\$295,170	2020-21	\$295,233
2017-18	\$341,072	2021-22	\$320,624

Expanded Funding Breakdown by PennDOT Engineering District of \$320 Million (FY 2021-22)



^{a/} Highway maintenance appropriation supplemented by additional restricted funds under Act 1997-3 and Act 2013-89. The Expanded Highway and Bridge Maintenance Allocation is an executive authorization (EA).

^{b/} Act 2013-89 was not applicable until FY 2013-14.

Source: Developed by LBFC staff with data provided by PennDOT.

²¹ Eighty-five percent of the Expanded Highway and Bridge Maintenance Allocation is allocated via the ASHMA portion of the maintenance funding formula and the remaining 15 percent of the funding is allocated at the discretion of the Secretary of PennDOT.

Annual maintenance budgeting is a significant process; one of the many factors that Engineering Districts and the CMOs must account for is the winter maintenance program, which can fluctuate from year to year in that expenditures are related to the frequency and severity of winter weather. Engineering Districts and CMOs attempt to develop realistic budget estimates based on prior weather activity and historical expenditures. When winter is milder than anticipated, Engineering Districts and CMOs shift unused winter maintenance funds to spring and summer maintenance activities. Conversely, more funds are shifted from spring and summer maintenance activities when winter is harsher than anticipated. PennDOT often contracts with local municipalities to clear state roads within its jurisdiction. Maintenance issues can vary significantly among the Engineering Districts and their CMOs due to the variation in the communities they serve (rural, suburban, urban), the ability to hire temporary staff to operate trucks to clear snow, or the decision to contract with external contractors to perform winter operations.

Maintenance Funding Formula

The General Assembly last modified the Pennsylvania SHMFF in 1997 to achieve a fairer allocation of maintenance funds that reflects changing needs annually.²² The current formula eliminated the utilization of the historical allocation of funds in 1978 and 1979 and instead incorporated a rolling five-year average of each county's expenditures. It also reflected a revision of highway and bridge factors considered in each county's five-year rolling average. According to PennDOT, these changes are intended to capture and reflect changing state highway maintenance needs annually to ensure a more equitable distribution of state highway maintenance funds.²³

Old Formula. Act 1980-68 established a maintenance allocation formula that consisted of two components:

- *First component:* An amount equal to 95 percent of a county's "base allocation," which was the total highway maintenance appropriations and executive authorizations received by a CMO for FY 1978-79 or FY 1979-80, whichever was higher.
- *Second component:* Additional State Highway Maintenance Appropriation (ASHMA). It consists of five weighted factors: 1) a relative pavement quality index for the county (RPQI), 2) the

²² Prior LBFC analysis in a 2002 PennDOT performance audit found that the Act 1997-3 SHMFF resulted in a fairer allocation of maintenance funds.

²³ Under the old formula LBFC noted in its 2002 PennDOT performance audit that the distribution of funding to CMOs left some counties underfunded and others overfunded regarding identified highway maintenance needs; those discrepancies occurred because the base allocation was based primarily on allocations made in the late 1970s versus actual maintenance needs.

square footage of PennDOT maintained highway bridge deck in the county (BD), 3) the number of PennDOT maintained highway lane miles in the county (LM), 4) the number of vehicle miles traveled for the county (VM), and 5) a snow index (SI- number of snow days for the past four years multiplied by the number of lane miles in the county).

- *Hold harmless provision:* No county received less than 100 percent of its base allocation in the annual allocation for routine maintenance operations, that is, traffic, roadside, and winter services.

Current Formula. Act 1997-3 SHMFF is based on the premise that more funding should be directed to counties with more significant needs (worse conditions) and provides for funding according to the following two components:²⁴

- *First component* - An amount equal to the county's base allocation. The base allocation is the annual expenditure for routine maintenance operations: a CMO performs traffic, roadside, and winter services. It includes costs incurred for personnel services, operational expenses, and fixed assets, but does not include highway repair and restoration costs, averaged over the immediately preceding five years.
- *Second component* – An amount based on the ASHMA formula, in which each county receives a portion of state highway maintenance appropriations and executive authorizations (EAs) more than the total of all counties' base allocations expressed in the following manner:²⁵

$$\text{ASHMA} = (40\% \text{ RPQc} + 15\% \text{ BMDc} + 30\% \text{ LMc} + 15\% \text{ VMc})^{26}$$

See the ASHMA section below for further information regarding the above formula.

The current formula specifically incorporated the following modifications for purposes of calculating state highway maintenance funding:

- The base allocation was replaced by providing for the calculation of a rolling five-year average of each county's expenditures for personnel, equipment, materials, and facilities. This new base allocation changes with time, reflecting a five-year rolling average.

²⁴ Title 75 (Vehicles) - 75 Pa.C.S. § 9102 (Distribution of state highway maintenance funds – formula for distribution).

²⁵ The ASHMA portion of the formula may reflect repair and restoration costs.

²⁶ An explanation of variables in the ASHMA portion of the funding formula are presented below.

- The hold harmless provision was eliminated because it acted as a second base allocation and inhibited the formula from reacting to changes in needs.
- The snow index was eliminated because all winter expenditures are included in the new base allocation calculations.
- Lane miles were increased in weight to 30 percent (up from 15 percent) because this variable directly correlates to actual pavement needs. The bridge deck area index was modified to include a Bridge Maintenance Deficiency index (see BMD index).

Base Allocation:

Although there have been no further modifications to the highway maintenance funding formula since 1997, beginning in fiscal year 2014-15, four additional programs were included in the base allocation portion of the formula. PennDOT added the programs because the activities and costs within them resembled base recurring costs. Regarding Program 711 (General Maintenance), PennDOT specifically noted that all operational expenses for activities had been excluded from the base allocation portion of the funding formula, including those considered preservation work, which is now included.

Exhibit 15 compares programs included in the base allocation portion of the funding formula prior to fiscal years 2014-15 and thereafter with the more limited list of programs included previously.

Exhibit 15

Base Allocation Programs

Base Allocation Programs Prior to FY 2014-15		
Program Number	Program Name	Program Description
712	Winter Services	Snow season preparation, snow removal and ice control (including salt brine manufacture), municipal agreements, and rented equipment.
713	Traffic Services	Pavement marking, signs, guide rails/median barrier/impact attenuation devices, lighting, incidental services (e.g., sweeping, deer removal, etc.), and rented equipment.
714	Roadside Services	Vegetation management services (e.g., herbicides, mowing, tree-cutting, wildflower planting), public rest area services, including contracted services, and rented equipment.
719	Maintenance Administration	Occupancy permits/licenses, travel, office supplies, and training.

Exhibit 15 Continued

Program Number	Program Name	Program Description
813	Maintenance/Operation of Equipment/Machinery	Repair parts, rented equipment, credit card fuel and oil purchases, small tool purchases, cleaning, and contracted services.
822	Maintenance/Operation of Building/Grounds	Utilities (except phone), building and garage maintenance, and contracted services.
844	Inventory Procurement	Winter materials; aggregates, bituminous materials, line paint, beads, pipes, signs, herbicides, concrete, bulk fuels and petroleum products, equipment repair parts; miscellaneous supplies, purchasing card purchases.

Additional Base Allocation Programs Beginning FY 2014-15

Program Number	Program Name	Program Description
124	Capital Outlay	Facilities and equipment.
137	Automated/Info. Technology	Services and purchases.
618	Agility Program ^{a/}	Agility is a way of doing business that enables PennDOT and eligible partners to exchange services, equipment, and staff that are equal in amount.
711	General Maintenance (Preservation work only)	Preservation work is any activity associated with sealing a surface or drainage activities. Maintenance contracts by project, rental equipment, contract services, and consultant inspection.

^{a/} Municipalities represent most partners in the program. Others are eligible, including water, sewer, housing, and municipal authorities; councils of governments; metropolitan and rural planning organizations; public school districts; state universities, community colleges, and vocational-technical schools; volunteer fire and rescue companies; volunteer emergency medical transport companies; state and federal government agencies; and charitable hospitals.

Source: Developed by LBFC staff with information provided by PennDOT.

ASHMA:

For the ASHMA portion of the funding formula, the following acronyms and terms mean:²⁷

- **“ASHMA.”** All additional state funds from highway maintenance appropriation, the secondary roads maintenance and resurfacing executive authorization, and supplemental distributions pursuant to section 9502(a)(2)(i) and (3)(ii) (relating to imposition of tax) more than all counties’ base allocations.

²⁷ Title 75 (Vehicles) - 75 Pa.C.S. § 9101 (Definitions – ASHMA, BMD, c, LM, RPQ, vehicle miles, and VM).

- **"BMD [index]."** *The Bridge Maintenance Deficiency index is based upon bridge safety inspections conducted by certified professionals who have physically evaluated the condition of all state highway bridges greater than or equal to eight feet in length on a periodic basis in accordance with the National Bridge Inspection Standards.*
- **"c."** *When used alone or in conjunction with any formula part, any given county.*
- **"LM."** *The number of actual state highway miles in each county as a proportion of the total number of state highway lane miles in Pennsylvania.*
- **"RPQ [index]."** *The Relative Pavement Quality Index is based upon a Road Quality Report, which entails the evaluation of the conditions of the highways in each county on a periodic basis. The criteria for determining any road deficiencies shall include but not be limited to road surface, foundation, drainage, shoulders, and other safety features such as road striping, guardrails, median barriers, and signs. The index shall provide a reasonable comparison of highway quality and conditions between all counties.*
- **"Vehicle miles."** *The total number of miles traveled by all vehicles on state-maintained roads [highways] within a county as determined by the Department [PennDOT].*
- **"VM."** *The number of vehicle miles traveled in each county as a proportion of the total vehicle miles traveled in Pennsylvania.*

Exhibit 16 provides an overview of the various components of the ASHMA portion of the funding formula.

Exhibit 16

ASHMA Components

The ASHMA portion of the SHMFF consists of the following components:

- **RPQ index: 40 percent of ASHMA** is based on four other indices.
 - 80 percent – Systematic Techniques to Analyze and Manage Pennsylvania Payments (STAMPP). STAMPP is an annual survey of all PennDOT-maintained highways to assess the condition of the pavement, shoulders, drainage, and guide rails. A series of computer programs then assigns a treatment strategy to each roadway segment and estimates the cost of treatment. An index of the relative roadway needs of the county is developed based on each county's needs as a percentage of PennDOT's total needs. The STAMPP index in the ASHMA formula is based only on pavement, shoulders, and on paved roads.
 - 7.5 percent – STAMPP survey also provides the data for a *drainage index*, which is the total costs to fix drainage distress conditions for a county as a proportion of the total for the state.

Exhibit 16 Continued

- 7.5 percent – STAMPP survey also provides the data for a guide rail index, which is the total costs to fix guide rail distress conditions for a county as a proportion of the total for the state.
- 5 percent – Truck Vehicle Miles Traveled (TK) index. TK is the county's truck vehicle miles traveled as a percentage of the total statewide truck vehicle miles.
- **BMD index: 15 percent of ASHMA** is based on two indices.
 - Bridge Deck Area Index (BDAI).
 - Bridge Maintenance Deficiency Rating (BMDR).

The BMD index is calculated at each county's portion of the total state BMD index where the BMD index is calculated as the summation of Bridge Deck Area Index (BDAI) times the summation of Bridge Maintenance Deficiency Rating (BMDR).

- **LM: 30 percent of ASHMA.**
- **VM: 15 percent of ASHMA.**

Source: Developed by LBFC staff with information provided by PennDOT.

Perceptions, Modifications, and Alternatives.

PennDOT indicated the lack of funds available to address all annual state highway maintenance needs might create the perception that the Act 1997-3 SHMFF and its various factors and methodology are potentially flawed and in need of adjustment.²⁸ PennDOT further noted that any changes to the funding formula generally have the potential to create winners and losers, as any change would only impact how existing funding is distributed versus providing additional funding. Aware that the methodology of the current funding formula is potentially subject to scrutiny, PennDOT indicated that it has considered and analyzed potential changes from time to time. Any possible changes to the funding formula or its factors would need to be thoroughly examined and vetted, and changes to the funding formula would need legislative authorization. The following are examples of some of PennDOT's internal considerations:

²⁸ PennDOT noted that when the current Act 1997-3 SHMFF was initially implemented, the base allocation portion of the formula and the ASHMA portion of the formula each represented about 50 percent of the funding, but now the base portion of the formula represents about 80 percent versus 20 percent from the ASHMA portion of the formula. The funding needs for the base portion of the funding formula have continued to grow, leaving less funding to be driven out through the ASHMA portion of the funding formula.

- Regarding the base allocation portion of the funding formula, PennDOT concluded there was a significant disparity in how and what the CMOs charge regarding the various program categories. As a result, PennDOT developed updated descriptions of its programs and what activities should be charged to them. This will be reflected in the pending update to the PennDOT Publication 23, Maintenance Manual in Chapter 3. Note: no legislative action is required to implement changes to the base allocation if the included programs meet the Vehicle Code definition of routine maintenance.
- PennDOT has considered funding all core activities (must-do work) through the base allocation. This approach would render the ASHMA portion of the current funding formula moot. However, PennDOT noted that if previous spending is the basis for determining the base allocation, additional activities would likely cause the necessary base allocation to exceed available funding, resulting in each CMO receiving only a portion of the required funding. Note: core activities include those deemed as “repair” or “restoration,” which would require legislative action or at least a legal interpretation allowing PennDOT to define the terms: maintenance, preservation, repair, and restoration.
- Given that the current funding formula is based on the premise that more funding is directed to CMOs based on counties with more significant needs, PennDOT has considered the following regarding the ASHMA portion of the funding formula, all of which would require legislative action:
 - PennDOT considered making the ASHMA portion of the formula more forward-looking by reviewing the funds required to perform all relative cyclic work in addition to other non-cyclic work (e.g., winter maintenance, other non-route-specific programs, and operational costs).
 - PennDOT considered changing ASHMA formula factors to be inventory-based rather than condition-based, reasoning that all assets must be maintained, not only those needing repair.
 - PennDOT considered the impact of eliminating or reducing the effect of interstates on the various factors under the ASHMA portion of the funding formula (i.e., Lane Miles and LM, VM, BMD index, and RFQ index). However, most of the funding that flows through the ASHMA portion of the funding formula (non-base allocation maintenance funding) is not spent on interstates.

Funds and Revenues

To better appreciate how the SHMFF works, it is essential to understand potential funding sources for commonwealth agencies, including the General Fund, special funds, augmentations, and federal funds. The Governor's Executive Budget defines these various categories of funds as follows:

- *General Fund: The major operating fund of the Commonwealth. It receives all tax receipts and all types of revenue not specified by law to be placed in special funds. Except for certain restricted receipts, the income in the General Fund is appropriated in specific amounts for ordinary programs of government....*
- *Special Fund: A fund in which revenues raised from special sources named by law are deposited (earmarked revenue). Such revenues can be spent only for purposes prescribed by law and for which the revenues were collected. Examples are Motor License Fund [MLF]....*
- *Augmentation: Monies such as institutional billings or fees credited to a specific appropriation of state revenues. An augmentation can usually be spent for those purposes authorized for the appropriation it augments.*
- *Federal Funds Appropriated: An appropriation of monies received from the federal government. All monies, regardless of source, deposited in the state treasury must be appropriated. Federal funds are appropriated for a specific time period.*

Revenues within these funds may be classified as either nonrestricted or restricted revenue. Restricted revenue is defined as follows:

- *Restricted Revenue: Monies designated by law or administrative decision for specific purposes. The revenues are deposited in the General Fund or certain special funds but reported separately. Restricted revenue accounts continue from one year to the next and finance a regular operation of state government. Disbursements from restricted revenue accounts must be accounted for as expenses of state government.*

PennDOT Motor License Fund Funding.

A significant portion of the agency's funding comes from the Motor License Fund (MLF), which is:

- *A special revenue fund composed of monies received from liquid fuels taxes, licenses, and fees on motor vehicles, aviation*

fuel tax revenues, federal aid for highway and aviation purposes, contributions from local subdivisions for highway projects, and other miscellaneous highway revenues.²⁹ The fund provides for highway and bridge improvement, design, maintenance, and purchase of rights-of-way, as well as aviation activities and Department of Transportation licensing and safety activities. It also finances State Police highway patrol operations and pays subsidies to local subdivisions for the construction and maintenance of roads.³⁰

MLF non-restricted revenues consist of the following:

- Liquid Fuels Taxes (61 percent):
 - Alternative Fuels Tax - Imposed on fuels other liquid fuels or fuels used to propel vehicles on public highways (e.g., compressed natural gas, propane, electricity).
 - Motor Carriers Road Tax (subject to the International Fuel Tax Agreement/IFTA effective January 1, 1996) – Levied on vehicles with a gross weight or registered gross weight of more than 26,000 pounds.
 - Oil Company Franchise Tax – An excise tax on all taxable liquid fuels, fuels, and alternative fuels.
- License and Fees (38 percent) – i.e., registration and titling of motor vehicles and for issuing learners’ permits, operators’ licenses, certificates of title, and registration transfers.
- Other Nonrestricted (1 percent) – investment income, sale of unserviceable property, fees for reclaiming abandoned vehicles, highway encroachment permits, and other miscellaneous revenues.

MLF restricted revenues (not included in PennDOT totals) consist of the following:

- Aviation Liquid Fuels Tax - Restricted revenues include taxes levied on aviation gasoline and jet fuel.
- Highway Bridge Improvement restricted account (Act 1982-234) – This account's most significant revenue source is a restricted portion of the Oil Company Franchise Tax with 55 mills enacted in Act 1997-3 and a portion of the 1.5 mills authorized in Act 89-2013.
- Local highway turnback program (Act 1983-32) is funded by three mills of the Oil Company Franchise Tax that are restricted and equally divided between the State Highway Transfer and the Highway Bridge Improvement restricted accounts.

²⁹ Certain revenues are further restricted to specific highway uses and are not included in MLF revenue estimate.

³⁰ MLF also provides funding for the payment of debt service on obligations incurred for such purposes.

- Oil Company Franchise Tax – Restricted account revenues are provided by 55 mills of the Oil Company Franchise Tax because of Act 1991-26.
- Supplemental Maintenance – Restricted account revenues are provided by 38.5 mills of the Oil Franchise Tax because of Act 1997-3.

PennDOT Maintenance Funding.

State highway maintenance funding revenues consist of the following nonrestricted and restricted revenues:

- Nonrestricted revenues include Liquid Fuels Taxes, licenses, fees, and other nonrestricted revenues (e.g., interest/investment earnings). These funds, known as the A-582 Highway Maintenance Appropriation, are distributed by the State Highway Maintenance Formula.
- Restricted revenues consist of the following:
 - A-181 Highway Maintenance Excise Tax restricted revenues from 19 percent of 55 mills of the Gas Tax increase per Act 1991-26. These monies are considered a supplement to the A-582 Highway Maintenance Appropriation and are distributed by the State Highway Maintenance Formula.
 - A-174 Highway Maintenance Enhancement restricted revenue from 40 percent of 38.5 mills of the Gas Tax increase per Act 1997-3. These funds are considered a supplement to the A-582 Highway Maintenance Appropriation and are distributed by the State Highway Maintenance Formula.
 - A-409 Expanded Highway and Bridge Funding restricted revenues from 48 percent of 38.5 mills per Act 2013-89. These monies are paid directly towards the projects and activities and distributed according to the State Highway Maintenance Formula.
 - State augmentations are project-specific restricted revenues for state highway maintenance within a specific county.
 - PennDOT receives federal restricted revenues of up to \$100 million annually, distributed to counties mainly due to flooding and emergencies. These restricted revenues are distributed through the A-582 maintenance account.

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SECTION III FUNDING FORMULA AND MAINTENANCE NEEDS



Fast Facts

- ❖ *CMOs are funded through a formula that yields a gross allocation amount for each county maintenance office.*
- ❖ *CMOs also receive a portion of the Expanded Highway and Bridge Allocation.*
- ❖ *In FY 2021-22, there was a shortfall of \$4.1 billion in maintenance funding.*

Senate Resolution 2021-53 directed LBFC to review the funding formula for PennDOT's county maintenance offices (CMOs), compare funding to state highway and bridge needs, and review if any CMOs may have been over or underfunded. This section also reviews the conditions of highways and bridges and vehicle miles traveled on Pennsylvania highways.

A. Maintenance Funding and Needs

The Act 1997-3 state highway maintenance funding formula, used to determine the allocation of maintenance funds to CMOs, is based on the premise that the state should direct more funding to counties with more significant needs. The funding formula provides for funding using the following two components:

- *First component:* An amount equal to the county's base allocation. The base allocation is the annual expenditure for routine maintenance operations: a CMO performs traffic, roadside, and winter services. It includes costs incurred for personnel services, operational expenses, and fixed assets averaged over the immediately preceding five years.
- *Second component:* An amount based on the Additional State Highway Maintenance Appropriation (ASHMA) formula, in which each county receives a portion of state highway maintenance appropriations and executive authorizations (EAs) above the total of all counties' base allocations.³¹

The dollar amounts calculated from these two components plus the amount allocated from the A-409 Expanded State Highway and Bridge allocation yield a CMO's gross allocation.

³¹ The ASHMA portion of the formula may reflect repair and restoration costs. A more detailed explanation of ASHMA can be found in Section II – Background of this report.

Of the Expanded State Highway and Bridge allocation, 15 percent of the amount deposited in a fiscal year is distributed at the secretary's discretion. The secretary approves distributions of the discretionary amounts to CMOs or PennDOT's Central Office. These amounts were:³²

- FY 2015-16: \$44,000,000,
- FY 2016-17: \$44,000,000,
- FY 2017-18: \$51,000,000,
- FY 2018-19: \$51,633,000,
- FY 2019-20: \$49,353,000,
- FY 2020-21: \$44,285,000,
- FY 2021-22: \$48,094,000.

To determine the overall maintenance needs of Pennsylvania's state highways and bridges, PennDOT uses various factors and assigns dollar values to those needs. They are:

1. Bridge maintenance needs,
2. Drainage needs,
3. Guiderail needs, and
4. STAMPP needs.

The drainage needs and guardrail needs are determined based on surveys, while the bridge maintenance needs are based on inspections. The fourth factor in determining maintenance needs is STAMPP needs. STAMPP stands for Systematic Technique to Analyze & Manage Pennsylvania's Pavements (See Section II – Background additional STAMPP information). The STAMPP distress survey provides specific condition data about the state highway system.

In FY 1997-98, the overall maintenance needs shortfall was \$1.2 billion. The shortfall had increased to \$4.2 billion by FY 2021-22. On average, the highway and bridge maintenance funding shortfall were 163 percent for the years included in this study. Over the time frame of this study, there were only five times when a county received more funding than needed, see Appendix C, which shows funding needs by CMO and highlights those instances.

According to PennDOT, some of the impacts of delayed maintenance on highways and bridges are:

- More costly rehabilitation versus lower cost preventative maintenance,
- Decreased pavement or bridge longevity,
- Increased safety concerns and decreased quality of travel for the motoring public.

³² See Appendix B for these amounts by district and county.

Exhibit 17 shows the total maintenance allocation, which is the gross allocation plus the A-409 Expanded Highway and Bridge Allocation, compared to calculated highway and bridge maintenance needs.

Exhibit 17

**Total Statewide Highway and Bridge Funding and Maintenance Needs
 FYs 1997-98 and 2015-16 to 2021-22
 (In Thousands)**

FY	Gross Allocation	A-409 ^{a/}	Total	Needs	Difference
1997-98	\$ 946,822	N/A	\$ 946,822	\$2,151,729	-\$1,204,907
2015-16	1,329,307	252,335	1,581,642	4,648,470	-3,066,828
2016-17	1,330,418	251,170	1,581,588	3,163,176	-1,581,588
2017-18	1,340,318	290,072	1,630,390	4,002,810	-2,372,420
2018-19	1,340,318	292,589	1,632,907	4,143,726	-2,510,819
2019-20	1,263,318	279,668	1,542,986	4,889,197	-3,346,211
2020-21	1,198,664	250,948	1,449,612	5,505,040	-4,055,428
2021-22	1,342,194	272,530	1,614,724	5,761,628	-4,146,904

^{a/} These A-409 amounts do not include the 15 percent discretionary funding described above and differ from A-409 amounts presented in Section II Background. These amounts do not include funds directed to PennDOT's Central Office.

Source: Developed by LBFC Staff from data provided by PennDOT.

Exhibit 18 shows the same funding by PennDOT engineering districts. For complete data by CMO, see Appendix C.

Exhibit 18

**Highway and Bridge Funding and Maintenance Needs
 By PennDOT Engineering District**

Engineering District	FY 1997-98				FY 2015-16					
	Gross Allocation	A-409 ^{a/}	Total	Needs	Difference	Gross Allocation	A-409	Total	Needs	Difference
District 1	\$75,752	-	\$75,752	\$176,605	-\$100,853	\$102,826	\$16,695	\$119,521	\$264,720	-\$145,199
District 2	70,386	-	70,386	126,787	-56,401	103,463	17,310	120,773	295,391	-174,618
District 3	81,225	-	81,225	163,161	-81,936	120,635	20,763	141,398	305,126	-163,728
District 4	77,281	-	77,281	164,456	-87,175	123,702	22,937	146,639	470,639	-324,000
District 5	74,912	-	74,912	154,185	-79,273	120,030	23,534	143,564	392,301	-248,737
District 6	126,683	-	126,683	290,792	-164,109	169,136	42,201	211,337	883,367	-672,030
District 8	108,200	-	108,200	203,133	-94,933	161,792	30,551	192,343	395,639	-203,296
District 9	79,491	-	79,491	151,359	-71,868	104,617	16,174	120,791	299,688	-178,897
District 10	75,498	-	75,498	156,567	-81,069	99,281	17,882	117,163	373,021	-255,858
District 11	88,627	-	88,627	352,937	-264,310	109,878	23,458	133,336	532,375	-399,039
District 12	88,767	-	88,767	211,747	-122,980	113,947	20,830	134,777	436,205	-301,428
Statewide Total:	\$946,822	-	\$946,822	\$2,151,729	-\$1,204,907	\$1,329,307	\$252,335	\$1,581,642	\$4,648,472	-\$3,066,830

Exhibit 18 Continued

		FY 2016-17				FY 2017-18				
Engineering District	Gross Allocation	A-409	Total	Needs	Difference	Gross Allocation	A-409	Total	Difference	
District 1	\$101,382	\$16,708	\$118,090	\$236,180	-\$118,090	\$105,058	\$19,297	\$124,355	\$239,495	-\$115,140
District 2	102,372	17,038	119,410	238,820	-119,410	102,185	19,676	121,861	209,793	-87,932
District 3	136,137	19,998	156,135	312,270	-156,135	121,587	23,095	144,682	259,729	-115,047
District 4	122,244	22,871	145,115	290,230	-145,115	126,109	26,416	152,525	437,616	-285,091
District 5	121,022	23,209	144,231	288,462	-144,231	120,920	26,806	147,726	323,322	-175,596
District 6	164,174	42,520	206,694	413,388	-206,694	163,467	49,108	212,575	766,094	-553,519
District 8	157,800	30,080	187,880	375,760	-187,880	161,830	34,740	196,570	340,751	-144,181
District 9	103,568	16,350	119,918	239,836	-119,918	105,734	18,886	124,620	232,350	-107,730
District 10	98,262	17,962	116,224	232,448	-116,224	101,004	20,741	121,745	304,001	-182,256
District 11	108,570	23,358	131,928	263,856	-131,928	115,770	26,964	142,734	504,151	-361,417
District 12	114,887	21,076	135,963	271,926	-135,963	116,654	24,343	140,997	385,506	-244,509
Statewide Total	\$1,330,418	\$251,170	\$1,581,588	\$3,163,176	-\$1,581,588	\$1,340,318	\$290,072	\$1,630,390	\$4,002,808	-\$2,372,418

		FY 2018-19				FY 2019-20				
Engineering District	Gross Allocation	A-409	Total	Needs	Difference	Gross Allocation	A-409	Total	Difference	
District 1	\$104,493	\$19,728	\$124,221	\$239,736	-\$115,515	\$100,699	\$18,821	\$119,520	\$285,892	-\$166,372
District 2	101,737	19,095	120,832	206,274	-85,442	96,908	17,917	114,825	276,427	-161,602
District 3	127,367	22,305	149,672	283,800	-134,128	117,252	21,045	138,297	344,385	-206,088
District 4	127,087	27,295	154,382	442,995	-288,613	121,708	26,190	147,898	626,819	-478,921
District 5	118,651	26,672	145,323	344,271	-198,948	111,106	25,524	136,630	409,636	-273,006
District 6	158,642	50,190	208,832	799,901	-591,069	145,657	48,269	193,926	901,294	-707,368
District 8	160,174	34,334	194,508	346,142	-151,634	153,391	32,565	185,956	399,683	-213,727
District 9	107,368	19,181	126,549	258,960	-132,411	103,057	18,444	121,501	284,996	-163,495
District 10	101,474	20,932	122,406	327,213	-204,807	95,902	20,179	116,081	378,885	-262,804
District 11	117,332	27,405	144,737	502,500	-357,763	104,625	26,288	130,913	588,160	-457,247
District 12	115,994	25,452	141,446	391,934	-250,488	113,013	24,426	137,439	393,018	-255,579
Statewide Total	\$1,340,319	\$292,589	\$1,632,908	\$4,143,726	-\$2,510,818	\$1,263,318	\$279,668	\$1,542,986	\$4,889,195	-\$3,346,209

Exhibit 18 Continued

Engineering District	FY 2020-21				FY 2021-22					
	Gross Allocation	A-409	Total	Needs	Difference	Gross Allocation	A-409	Total	Needs	Difference
District 1	\$95,924	\$16,885	\$112,809	\$337,039	-\$224,230	\$108,038	\$18,409	\$126,447	\$383,736	-\$257,289
District 2	93,676	15,974	109,650	299,870	-190,220	101,772	17,042	118,814	305,324	-186,510
District 3	113,089	18,877	131,966	376,938	-244,972	125,838	20,541	146,379	413,715	-267,336
District 4	117,492	24,384	141,876	756,600	-614,724	133,442	27,567	161,009	812,885	-651,876
District 5	105,267	22,887	128,154	475,921	-347,767	118,945	24,874	143,819	497,886	-354,067
District 6	134,531	42,904	177,435	993,353	-815,918	157,329	46,268	203,597	1,030,717	-827,120
District 8	143,084	29,031	172,115	479,084	-306,969	158,613	31,674	190,287	506,697	-316,410
District 9	98,471	16,431	114,902	317,478	-202,576	107,740	17,661	125,401	307,455	-182,054
District 10	90,598	17,976	108,574	409,343	-300,769	101,483	19,165	120,648	416,351	-295,703
District 11	103,265	24,067	127,332	630,381	-503,049	114,743	26,424	141,167	625,661	-484,494
District 12	103,267	21,532	124,799	429,031	-304,232	114,251	22,905	137,156	461,201	-324,045
Statewide Total	\$1,198,664	\$250,948	\$1,449,612	\$5,505,038	-\$4,055,426	\$1,342,194	\$272,530	\$1,614,724	\$5,761,628	-\$4,146,904

^{a/} No amounts are shown for FY 1997-98 as A409 Expanded Highway and Bridge Funding was not yet authorized.

Source: Developed by LBFC Staff from data provided by PennDOT.

Exhibit 19 shows PennDOT's statewide maintenance funding allocation for the past seven fiscal years. It breaks out the base allocation and ASHMA dollar amounts along with central office support and Engineering District Office support dollar amounts.

Exhibit 19

**Maintenance Allocation
(In Millions)**

<i>(Base + ASHMA= Gross) (A-582)</i>	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
Base Allocation	\$909	\$861	\$861	\$802	\$797	\$897	\$960
ASHMA	\$421	\$480	\$479	\$461	\$401	\$445	\$453
Gross Allocation	\$1,330	\$1,340	\$1,340	\$1,263	\$1,198	\$1,342	\$1,413
<i>(Gross – CO/DO Support= Net)</i>							
Central Office Support	-\$190	-\$200	-\$184	-\$171	-\$206	-\$171	-\$183
District Office Support	-\$74	-\$73	-\$77	-\$74	-\$71	-\$74	-\$80
Net Allocation	\$1,066	\$1,067	\$1,079	\$1,018	\$921	\$1,097	\$1,151
A-409 (ACT 89)	-	-	\$ 45.5	\$ 30.5	\$ 80.5	\$ 272.5	\$ 275.7
Total Net Allocation (A-582 & A-409)	\$1,066	\$1,067	\$1,124.5	\$1,048.5	\$1,001.5	\$1,369.5	\$1,426.7

Source: PennDOT.

Agility Agreements

Agility is a “way of doing business” that enables PennDOT and eligible partners to exchange services, equipment, and staff that are similar in amount instead of money. By entering agility agreements, PennDOT and the partner make the most of limited resources while developing working relationships. According to PennDOT, one of the most significant advantages of the Agility Program is the long-term relationships developed between PennDOT and its partners.

Presently, municipalities represent most partners in the program. However, other entities are eligible, including water, sewer, housing and municipal authorities, councils of governments, metropolitan and rural planning organizations, public school districts and state universities, community colleges, vocational-technical schools, volunteer fire and rescue companies, volunteer emergency medical transport companies, state and federal government agencies, and charitable hospitals. The Agility Program is available in all eleven engineering districts, which cover 67 counties in Pennsylvania.

To avoid exchanging services and staff that may negatively affect the workforce, PennDOT enters agility work plans in cooperation with the American Federation of State, County, and Municipal Employees (AFSCME). In this way, the agency, AFSCME, and the eligible partner provide services and staff without the need to pay each other cash for the services rendered.

In its Maintenance Manual, PennDOT gives several examples of uses of agility agreements:

- CMOs should consider using agility agreements with local volunteer fire departments when performing preventive maintenance on bridges, such as flushing activities.
- Where practical, CMOs should use the Agility Program to formalize agility agreements as “insurance policies” to access backup crews, facilities, knowledge resources, and equipment locally and across state borders. The types of emergencies in which these service exchanges may be used include, but are not limited to, electrical outages, downed power lines, snow plowing, flooding, traffic control, etc.
- CMOs should use agility agreements to meet local governments’ needs for low-cost safety services, which could help reduce fatalities and crashes. For example, a local government could cut tree limbs and brush along our rights-of-way, and in return, the Department could install rumble strips along dangerous curves on local roads.

PennDOT noted that the agility agreements enable PennDOT organizations to develop work plans with partners that describe the service exchanges. Any individual agreement may be associated with any number of work plans for different exchanges over the five to eight years the agreement is active (depending on whether it was renewed). Work plans are filed locally at the county or district offices.

Below are the agility agreements executed in each period by the type of partner with which the agreements were made:

For FY 1997-98, PennDOT completed 146 agility agreements with partners as follows:

- 92 Townships,
- 30 Boroughs,
- 9 Cities,
- 5 County governments,
- 10 Misc. non-municipalities (federal/state agencies, nonprofits, schools, etc.).

For FY 2015-FY 2022 combined, PennDOT executed 247 agility agreements with partners as follows:

- 148 Townships,
- 61 Boroughs,
- 10 Cities,
- 7 County governments,
- 21 Misc. non-municipalities (state agencies, nonprofits, schools, etc.).

B. Lane Miles and Bridges

PennDOT owns and maintains over 83,000 state 12' equivalent lane miles or approximately 40,000 linear miles. Highways are classified by one-, two-, three-, and four-digit route numbers.

Lane Miles

In FY 2021-22, Pennsylvania had 83,231 12' equivalent lane miles. Forty-nine percent of lane miles are four-digit routes, 27 percent are three-digit, 22 percent are two-digit, and the remaining three percent are one-digit.

Number of Lane Miles. Exhibit 20 shows 12' equivalent lane miles and the number of 1-, 2-, 3-, and 4-digit routes by engineering district and CMO. Engineering District 8 in south-central Pennsylvania has the most lane miles at 11,255, while Engineering District 11 in the western part of the state has the fewest at 5,087.

The five counties with the highest number of lane miles are:

- Allegheny: 3,060,
- Westmoreland: 2,420,
- York: 2,387,
- Bucks: 2,337,
- Lancaster: 2,263.

The five counties with the lowest number of lane miles are:

- Cameron: 192,
- Forest: 333,
- Montour: 351,
- Sullivan: 415,
- Mifflin: 492.

Exhibit 20

**Lane Miles By County
 (FY 2021-22)**

County	12' Equiva- lent Lane Miles	1- Digit Routes	1-Digit %	2- Digit Routes	2- Digit %	3- Digit Routes	3- Digit %	4- Digit Routes	4- Digit %
District 1									
Crawford	1,718	156	9%	384	22%	267	16%	910	53%
Erie	1,851	308	17	742	40	158	9	642	35
Forest	333	-	-	84	25	80	24	169	51
Mercer	1,531	-	-	528	34	343	22	660	43
Venango	1,040	95	9	198	19	238	23	509	49
Warren	951	116	12	181	19	113	12	540	57
Total	7,424	675	9%	2,117	29%	1,199	16%	3,430	46%
District 2									
Cameron	192	-	-	17	9	117	61	58	30
Centre	1,300	-	-	446	34	507	39	347	27
Clearfield	1,504	-	-	283	19	518	34	703	47
Clinton	625	-	-	120	19	353	56	152	24
Elk	538	-	-	16	3	292	54	230	43
Juniata	640	-	-	230	36	92	14	319	50
McKean	718	102	14	125	17	349	49	142	20
Mifflin	492	-	-	104	21	163	33	224	45
Potter	731	76	10	143	20	164	22	348	48
Total	6,740	178	3%	1,484	22%	2,555	38%	2,523	37%
District 3									
Bradford	1,512	109	7	60	4	304	20	1,038	69
Columbia	953	-	-	273	29	182	19	497	52
Lycoming	1,447	-	-	328	23	475	33	643	44
Montour	351	-	-	121	35	43	12	186	53
Northumberland	1,062	-	-	232	22	297	28	533	50
Snyder	600	-	-	123	21	126	21	351	59
Sullivan	415	-	-	94	23	127	31	194	47
Tioga	1,194	87	7	225	19	288	24	594	50
Union	579	-	-	204	35	69	12	306	53
Total	8,113	196	2%	1,660	20%	1,911	24%	4,342	54%
District 4									
Lackawanna	1,369	157	11	232	17	414	30	566	41
Luzerne	2,056	-	-	555	27	448	22	1,053	51
Pike	679	71	10	144	21	205	30	259	38
Susquehanna	1,422	-	-	283	20	359	25	780	55
Wayne	1,245	55	4	25	2	430	35	736	59

Exhibit 20 Continued

County	12' Equiva- lent Lane Miles	1- Digit Routes	1-Digit %	2- Digit Routes	2- Digit %	3- Digit Routes	3- Digit %	4- Digit Routes	4- Digit %
Wyoming	667	79	12	150	22	61	9	378	57
Total	7,438	362	49%	1,389	19%	1,917	20%	3,772	51%
District 5									
Berks	1,982	-	-	332	17	711	36	938	47
Carbon	543	-	-	72	13	221	41	250	46
Lehigh	1,242	-	-	161	13	316	25	766	62
Monroe	1,129	-	-	152	13	544	48	433	38
Northampton	1,098	-	-	173	16	333	30	592	54
Schuylkill	1,331	-	-	385	29	491	37	455	34
Total	7,325	-	-	1,275	17%	2,616	36%	3,434	47%
District 6									
Bucks	2,337	84	4	180	8	822	35	1,251	54
Chester	2,251	149	7	442	20	699	31	960	43
Delaware	1,379	160	12	161	12	353	26	705	51
Montgomery	2,052	2	-	342	17	592	29	1,117	54
Philadelphia	1,709	206	12	362	21	156	9	985	58
Total	9,728	601	6%	1,487	15%	2,622	27%	5,018	52%
District 8									
Adams	1,074	-	-	306	29	189	18	578	54
Cumberland	1,304	-	-	447	34	354	27	503	39
Dauphin	1,394	-	-	353	25	456	33	585	42
Franklin	1,212	-	-	419	35	303	25	490	40
Lancaster	2,263	-	-	274	12	957	42	1,032	46
Lebanon	812	-	-	193	24	275	34	345	42
Perry	809	-	-	311	38	185	23	313	39
York	2,387	-	-	549	23	582	24	1,256	53
Total	11,255	-	-	2,852	25%	3,301	29%	5,102	45%
District 9									
Bedford	1,447	-	-	437	30	205	14	805	56
Blair	1,049	-	-	320	31	250	24	479	46
Cambria	1,381	-	-	253	18	388	28	739	54
Fulton	624	-	-	130	21	227	36	267	43
Huntingdon	1,042	-	-	198	19	346	33	499	48
Somerset	1,633	-	-	157	10	499	31	977	60
Total	7,176	-	-	1,494	21%	1,915	27%	3,766	52%
District 10									
Armstrong	1,190	-	-	219	18	241	20	730	61
Butler	1,384	115	8	359	26	354	26	556	40

Exhibit 20 Continued

County	12' Equiva- lent Lane Miles	1- Digit Routes	1-Digit %	2- Digit Routes	2- Digit %	3- Digit Routes	3- Digit %	4- Digit Routes	4- Digit %
Clarion	883	-	-	310	35	160	18	413	47
Indiana	1,486	-	-	126	8	586	39	775	52
Jefferson	1,014	-	-	238	23	264	26	512	50
Total	5,957	115	2%	1,252	21%	1,605	27%	2,986	50%
District 11									
Allegheny	3,060	86	3	861	28	640	21	1,473	48
Beaver	1,244	-	-	329	26	289	23	626	50
Lawrence	784	-	-	125	16	387	49	271	35
Total	5,088	86	2%	1,316	26%	1,316	26%	2,370	47%
District 12									
Fayette	1,449	-	-	224	15	353	24	871	60
Greene	964	-	-	306	32	60	6	598	62
Washington	2,154	-	-	698	32	305	14	1,151	53
Westmoreland	2,420	-	-	530	22	747	31	1,143	47
Total	6,987	-	-	1,758	25%	1,465	21%	3,763	54%
Statewide Total	83,231	2,213	3%	18,045	22%	22,422	27%	40,506	49%

Source: Developed by LBFC Staff from data provided by PennDOT.

Condition of Lane Miles. Although PennDOT uses several indices that indicate road conditions, we used the Overall Pavement Index (OPI), a more comprehensive index because it considers both roughness and other pavement distresses. The OPI is also unique to Pennsylvania. For bituminous pavement, OPI assesses fatigue, transverse joints, miscellaneous cracking, edge deterioration, bituminous patching, raveling/weathering, and rutting. Likewise, OPI for concrete pavement considers faulting, broken slabs, transverse joint spalling, transverse cracking, longitudinal cracking, longitudinal joint spalling, bituminous patching index, and rutting.

OPI is on a scale from 0 to 100; 100 is in perfect condition. When the pavement is distressed, it is quantified into a number and deducted from the perfect score of 100 - the more severe the distress, the greater the deduction.

OPI is calculated for each roadway segment using an IRI-based roughness index and individual pavement distress indices. The pavement distress indices are calculated from "deduct values." The more severe and extensive the distress, the greater the deduct value, resulting in a lower pavement index value.

Exhibit 21 shows the condition of Pennsylvania’s roads for FY 2021-22. According to PennDOT’s calculations, percentages of Pennsylvania’s roads are in:

- Excellent condition: 20 percent,
- Good Condition: 45 percent,
- Fair Condition: 22 percent,
- Poor Condition: 12 percent.³³

Exhibit 21

**Condition of Roads in Pennsylvania: Linear Miles
(FY 2021-22)**

District/County	Excellent		Good		Fair		Poor	
	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles
District 1								
Crawford	155	16%	485	51%	248	26%	56	6%
Erie	207	23	468	51	198	22	40	4
Forest	62	32	80	41	45	23	10	5
Mercer	209	26	409	50	164	20	35	4
Venango	111	20	231	42	155	28	54	10
Warren	173	32	211	39	113	21	44	8
Total	917	23%	1,884	48%	923	23%	239	6%
District 2								
Centre	210	32	375	57	70	10	8	1
Clearfield	246	30	366	44	160	19	56	7
Clinton	168	51	146	44	15	5	1	-
Cameron	23	21	40	37	24	22	22	20
McKean	142	37	98	26	74	19	66	17
Potter	165	38	93	22	80	19	90	21
Mifflin	76	29	154	59	25	10	8	3
Elk	66	22	111	37	80	27	41	14
Juniata	151	41	164	45	47	13	3	1
Total	1,247	34%	1,547	42%	575	16%	295	8%
District 3								
Columbia	114	22	242	47	113	22	45	9
Lycoming	215	28	390	50	138	18	39	5
Montour	57	30	99	53	31	16	1	1
Northumberland	148	27	289	53	95	17	17	3

³³ Percentages may not necessarily add to 100 here or within the exhibit; PennDOT cannot test some mileage each year due to construction. On average, PennDOT tests 98 percent of highways.

Exhibit 21 Continued

District/County	Excellent		Good		Fair		Poor	
	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles
Snyder	57	18	183	58	62	20	15	5
Sullivan	90	39	91	40	37	16	11	5
Tioga	161	25	298	46	110	17	78	12
Union	91	30	160	52	51	17	5	1
Bradford	197	22	532	59	133	15	36	4
Total	1,130	25%	2,284	52%	770	17%	247	6%
District 4								
Lackawanna	91	14	299	45	181	27	88	13
Luzerne	145	15	284	29	225	23	325	33
Pike	100	28	150	42	60	17	49	14
Susquehanna	132	17	169	22	119	16	343	45
Wayne	83	12	166	24	159	23	275	40
Wyoming	39	11	96	26	73	20	156	43
Total	590	15%	1,164	31%	817	21%	1,236	32%
District 5								
Berks	155	16	634	65	162	17	27	3
Carbon	54	19	90	32	91	32	48	17
Lehigh	43	7	289	49	196	33	66	11
Monroe	64	11	218	37	188	32	115	20
Northampton	57	11	232	43	178	33	72	13
Schuylkill	122	18	237	35	167	25	155	23
Total	495	14%	1,700	46%	982	27%	483	13%
District 6								
Bucks	150	14	373	34	291	26	287	26
Chester	87	8	413	37	372	33	252	22
Delaware	30	5	249	45	131	24	141	26
Montgomery	44	5	360	41	292	34	172	20
Philadelphia	8	2	195	43	149	33	97	22
Total	319	8%	1,590	39%	1,235	30%	949	23%
District 8								
Adams	132	23	329	58	99	17	10	2
Cumberland	169	27	333	53	112	18	13	2
Franklin	147	23	340	54	129	20	18	3
York	271	23	575	48	269	22	90	7
Dauphin	189	30	315	49	115	18	19	3
Lancaster	336	31	624	57	128	12	12	1
Lebanon	124	30	227	54	59	14	7	2

Exhibit 21 Continued

District/County	Excellent		Good		Fair		Poor	
	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles
Perry	82	18	173	38	126	28	71	16
Total	1,450	26%	2,916	52%	1,037	18%	240	4%
District 9								
Bedford	230	28	503	60	91	11	11	1
Blair	147	29	330	64	36	7	2	-
Cambria	174	24	379	52	149	20	27	4
Fulton	89	25	214	60	44	12	9	3
Huntingdon	168	30	309	54	79	14	13	2
Somerset	215	23	358	39	200	22	144	16
Total	1,023	26%	2,093	53%	599	15%	206	5%
District 10								
Armstrong	86	13	209	31	160	24	221	33
Butler	162	23	222	31	208	29	127	18
Clarion	119	24	190	38	88	18	97	20
Indiana	128	15	391	46	264	31	65	8
Jefferson	110	19	214	37	169	29	87	15
Total	605	18%	1,226	37%	889	27%	597	18%
District 11								
Allegheny	167	12	663	47	467	33	119	8
Beaver	70	11	238	36	201	31	145	22
Lawrence	64	15	162	39	108	26	80	19
Total	301	12%	1,063	43%	776	31%	344	14%
District 12								
Fayette	148	18	417	51	187	23	59	7
Greene	101	17	265	45	155	26	67	11
Washington	187	16	557	47	318	27	117	10
Westmoreland	205	16	565	44	363	28	156	12
Total	641	17%	1,804	47%	1,023	26%	399	10%
State Total	8,718	20%	19,271	45%	9,626	22%	5,235	12%

Source: Developed by LBFC Staff from data provided by PennDOT.

Exhibit 22 shows highway conditions over time. There has not been significant variation in the percentages of excellent, good, fair, and poor highways during our review period.

Exhibit 22

**Condition of Roads in Pennsylvania: Linear Miles
 (FY 2015-16 to 2021-22)**

FY	Excellent		Good		Fair		Poor	
	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles	No. Miles	% Miles
2015-16	8,002	19%	20,222	48%	10,468	25%	3,789	9%
2016-17	8,317	19	20,194	47	10,395	24	3,781	9
2017-18	9,466	22	20,465	48	9,728	23	3,122	7
2018-19	10,265	24	20,144	47	9,308	22	2,979	7
2019-20	10,010	23	18,612	44	9,283	22	4,860	11
2020-21	9,338	22	18,385	43	9,376	22	5,742	13
2021-22	8,717	20	19,267	45	9,624	22	5,232	12

Source: Developed by LBFC Staff from data provided by PennDOT.

Bridges

With more than 25,400 state-owned bridges greater than or equal to eight feet in length, Pennsylvania has the third-largest number of bridges in the nation. The average age of bridges on the state system is over 50 years old.

Number of Bridges. Exhibit 23 shows that in FY 2021-22, Pennsylvania had 25,451 bridges, 49 percent of which were one-, two-, and three-digit routes, while the remaining 51 percent were four-digit routes.

Exhibit 23

**Bridges By County
 (FY 2021-22)**

County	1-, 2-, and 3-Digit Routes	1-, 2-, and 3-Digit Route Percentage	4-Digit Routes	4-Digit Route Percentage
District 1				
Crawford	251	50%	252	50%

Exhibit 23 Continued

County	1-, 2-, and 3-Digit Routes	1-, 2-, and 3-Digit Route Percentage	4-Digit Routes	4-Digit Route Percentage
Erie	354	61	224	39
Forest	40	53	36	47
Mercer	246	58	178	42
Venango	125	56	98	44
Warren	137	51	130	49
District 2				
Cameron	44	65	24	35
Centre	252	58	186	42
Clearfield	216	56	168	44
Clinton	157	63	92	37
Elk	66	53	58	47
Juniata	131	52	122	48
McKean	191	78	54	22
Mifflin	88	48	96	52
Potter	112	46	134	54
District 3				
Bradford	193	38	317	62
Columbia	153	50	151	50
Lycoming	288	56	228	44
Montour	77	58	56	42
Northumberland	161	47	181	53
Snyder	94	39	147	61
Sullivan	69	50	70	50
Tioga	233	45	289	55
Union	85	43	113	57
District 4				
Lackawanna	237	57	180	43
Luzerne	270	47	301	53
Pike	123	68	59	32
Susquehanna	193	46	224	54
Wayne	125	39	194	61
Wyoming	95	47	109	53
District 5				
Berks	322	50	318	50
Carbon	69	51	66	49
Lehigh	149	42	204	58

Exhibit 23 Continued

County	1-, 2-, and 3-Digit Routes	1-, 2-, and 3-Digit Route Percentage	4-Digit Routes	4-Digit Route Percentage
Monroe	216	59	151	41
Northampton	165	54	140	46
Schuylkill	218	63	127	37
District 6				
Bucks	293	44	371	56
Chester	325	49	341	51
Delaware	175	46	203	54
Montgomery	276	43	365	57
Philadelphia	168	40	254	60
District 8				
Adams	161	42	219	58
Cumberland	219	59	155	41
Dauphin	234	53	207	47
Franklin	180	56	143	44
Lancaster	348	48	377	52
Lebanon	131	58	93	42
Perry	149	54	126	46
York	284	43	372	57
District 9				
Bedford	201	44	256	56
Blair	126	39	198	61
Cambria	172	52	161	48
Fulton	99	55	82	45
Huntingdon	184	58	133	42
Somerset	191	39	299	61
District 10				
Armstrong	149	41	218	59
Butler	194	55	161	45
Clarion	108	52	100	48
Indiana	207	49	218	51
Jefferson	126	48	137	52
District 11				
Allegheny	489	41	695	59
Beaver	183	54	155	46
Lawrence	162	59	113	41

Exhibit 23 Continued

County	1-, 2-, and 3-Digit Routes	1-, 2-, and 3-Digit Route Percentage	4-Digit Routes	4-Digit Route Percentage
District 12				
Fayette	144	33	290	67
Greene	158	40	237	60
Washington	357	46	420	54
Westmoreland	376	51	361	49
Total	12,514	49%	12,937	51%

Source: Developed by LBFC Staff from data provided by PennDOT.

Condition of Bridges. PennDOT rates bridge conditions as good, fair, and poor on a scale of 0-9. The scale is:

- Good: 7-9,
- Fair: 5-6,
- Poor: 0-4.

Exhibit 24 shows the number of bridges, eight feet or greater, in the state route system and their corresponding conditions. Over half of Pennsylvania’s bridges are in fair condition:

- Good condition: 34 percent,
- Fair condition: 56 percent,
- Poor condition: 9 percent.

Exhibit 24

**Condition of Bridges in Pennsylvania
(As of January 2023)**

County	Total Count	Good Condition	% Good Condition	Fair Condition	% Fair Condition	Poor Condition	% Poor Condition
Adams	380	139	37%	212	56%	29	8%
Allegheny	1,178	356	30	724	61	98	8
Armstrong	366	95	26	228	62	43	12
Beaver	338	119	35	181	54	38	11
Bedford	457	165	36	263	58	29	6
Berks	639	152	24	446	70	41	6
Blair	324	170	52	147	45	7	2

Exhibit 24 Continued

County	Total Count	Good Condition	% Good Condition	Fair Condition	% Fair Condition	Poor Condition	% Poor Condition
Bradford	510	217	43	275	54	18	4
Bucks	661	162	24	402	61	97	15
Butler	355	126	35	193	54	36	10
Cambria	331	160	48	160	48	11	3
Cameron	67	23	34	38	57	6	9
Carbon	136	21	15	91	67	24	18
Centre	438	209	48	214	49	15	3
Chester	665	153	23	427	64	85	13
Clarion	208	55	26	145	70	8	4
Clearfield	383	139	36	208	54	36	9
Clinton	249	99	40	142	57	8	3
Columbia	304	146	48	152	50	6	2
Crawford	501	206	41	249	50	46	9
Cumberland	373	116	31	237	64	20	5
Dauphin	442	106	24	306	69	30	7
Delaware	378	92	24	245	65	41	11
Elk	124	47	38	71	57	6	5
Erie	576	209	36	340	59	27	5
Fayette	434	159	37	229	53	46	11
Forest	76	29	38	41	54	6	8
Franklin	321	89	28	206	64	26	8
Fulton	181	48	27	113	62	20	11
Greene	394	133	34	218	55	43	11
Huntingdon	317	150	47	146	46	21	7
Indiana	424	123	29	218	51	83	20
Jefferson	263	62	24	190	72	11	4
Juniata	252	92	37	136	54	24	10
Lackawanna	416	159	38	207	50	50	12
Lancaster	725	226	31	424	58	75	10
Lawrence	274	121	44	141	51	12	4
Lebanon	223	67	30	144	65	12	5
Lehigh	353	112	32	214	61	27	8
Luzerne	564	176	31	264	47	124	22
Lycoming	516	258	50	252	49	6	1
McKean	244	112	46	99	41	33	14
Mercer	424	160	38	235	55	29	7
Mifflin	184	82	45	92	50	10	5
Monroe	367	84	23	226	62	57	16
Montgomery	642	194	30	364	57	84	13
Montour	133	76	57	56	42	1	1
Northampton	305	74	24	203	67	28	9

Exhibit 24 Continued

County	Total Count	Good Condition	% Good Condition	Fair Condition	% Fair Condition	Poor Condition	% Poor Condition
Northumberland	348	157	45	185	53	6	2
Perry	274	63	23	176	64	35	13
Philadelphia	422	74	18	309	73	39	9
Pike	180	72	40	77	43	31	17
Potter	244	112	46	108	44	24	10
Schuylkill	346	67	19	227	66	52	15
Snyder	242	112	46	126	52	4	2
Somerset	490	193	39	247	50	50	10
Sullivan	139	60	43	77	55	2	1
Susquehanna	411	139	34	172	42	100	24
Tioga	522	265	51	248	48	9	2
Union	201	105	52	94	47	2	1
Venango	223	88	39	121	54	14	6
Warren	267	109	41	130	49	28	10
Washington	769	243	32	435	57	91	12
Wayne	319	97	30	145	45	77	24
Westmoreland	737	249	34	411	56	77	10
Wyoming	204	71	35	99	49	34	17
York	653	210	32	389	60	54	8
Total	25,406	8,754	34%	14,290	56%	2,362	9%

Source: Developed by LBFC staff from data provided by PennDOT.

Exhibit 25 shows the condition of Pennsylvania’s bridges over time; data was not available from PennDOT for years before FY 2018-19. The percentage of bridges in good, fair, and poor condition has not changed over the years reviewed.

Exhibit 25

**Condition of Bridges in Pennsylvania
 (FY 2018-19 to 2022-23)**

FY	Total Bridges	Good Condition	% Good Condition	Fair Condition	% Fair Condition	Poor Condition	% Poor Condition
2018-19	25,391	-	-	-	-	3,114	12%
2019-20	25,368	8,454	33	14,267	56	2,647	10
2020-21	25,398	8,654	34	14,226	56	2,518	10
2021-22	25,396	8,742	34	14,215	56	2,439	10
2022-23	25,406	8,754	34	14,290	56	2,362	9

Source: Developed by LBFC staff from data provided by PennDOT.

C. Vehicle Miles Traveled (VMT)

Exhibit 26 shows vehicle miles traveled annually in Pennsylvania for passenger vehicles and trucks. SR 2021-53 also asked us to review vehicle miles traveled by residents of Pennsylvania and those from out-of-state; however, these statistics are not captured within the data PennDOT collects for the Federal Highway Administration through the Highway Performance Monitoring System (HPMS).

Exhibit 26

Passenger and Truck Vehicle Miles Traveled Annually (FY 2021-22)

District/County	Truck VMT	Passenger VMT	Total VMT
District 1			
Crawford	71,596,864	594,650,843	666,247,707
Erie	205,583,121	1,526,484,072	1,732,067,193
Forest	7,575,686	38,961,009	46,536,695
Mercer	196,447,380	852,317,220	1,048,764,600
Venango	67,989,379	402,070,528	470,059,907
Warren	30,640,787	248,687,989	279,328,776
Total	579,833,217	3,663,171,661	4,243,004,878
District 2			
Cameron	3,517,387	29,365,946	32,883,333
Centre	270,583,225	1,020,342,958	1,290,926,183
Clearfield	293,836,732	514,726,024	808,562,756
Clinton	144,754,393	297,975,149	442,729,542
Elk	25,361,944	213,308,385	238,670,329
Juniata	41,746,190	209,569,939	251,316,129
McKean	29,105,032	216,681,246	245,786,278
Mifflin	42,519,183	292,536,914	335,056,097
Potter	13,418,733	105,317,154	118,735,887
Total	864,842,819	2,899,823,715	3,764,666,534
District 3			
Bradford	52,632,350	397,054,838	449,687,188
Columbia	112,916,967	470,677,913	583,594,880
Lycoming	113,130,798	781,610,718	894,741,516
Montour	65,101,335	193,357,925	258,459,260
Northumberland	86,930,870	557,454,507	644,385,377
Snyder	44,339,211	307,707,455	352,046,666
Sullivan	11,570,313	52,841,531	64,411,844
Tioga	74,919,448	366,780,839	441,700,287

Exhibit 26 Continued

District/County	Truck VMT	Passenger VMT	Total VMT
Union	93,562,662	349,106,043	442,668,705
Total	655,103,954	3,476,591,769	4,131,695,723
District 4			
Lackawanna	188,943,728	1,299,894,107	1,488,837,835
Luzerne	358,363,202	1,894,670,325	2,253,033,527
Pike	84,173,850	437,588,198	521,762,048
Susquehanna	103,886,286	373,896,018	477,782,304
Wayne	39,490,299	325,814,233	365,304,532
Wyoming	30,593,780	214,188,496	244,782,276
Total	805,451,145	4,546,051,377	5,351,502,522
District 5			
Berks	383,802,557	2,501,659,364	2,885,461,921
Carbon	53,155,244	365,706,891	418,862,135
Lehigh	233,126,869	2,006,979,074	2,240,105,943
Monroe	191,027,936	1,285,947,713	1,476,975,649
Northampton	188,679,329	1,565,413,442	1,754,092,771
Schuylkill	195,268,599	993,997,011	1,189,265,610
Total	1,245,060,534	8,719,703,495	9,964,764,029
District 6			
Bucks	263,113,827	3,448,190,779	3,711,304,606
Chester	285,158,110	3,065,880,160	3,351,038,270
Delaware	195,373,586	2,739,352,981	2,934,726,567
Montgomery	281,918,471	4,075,299,460	4,357,217,931
Philadelphia	258,249,633	3,909,748,750	4,167,998,383
Total	1,283,813,627	17,238,472,130	18,522,285,757
District 8			
Adams	93,126,129	725,067,849	818,193,978
Cumberland	352,581,890	1,896,651,423	2,249,233,313
Dauphin	315,242,433	2,112,271,758	2,427,514,191
Franklin	215,312,560	974,479,181	1,189,791,741
Lancaster	330,178,687	2,954,063,724	3,284,242,411
Lebanon	151,022,496	804,431,645	955,454,141
Perry	69,907,202	378,127,355	448,034,557
York	334,079,642	2,524,806,309	2,858,885,951
Total	1,861,451,039	12,369,899,244	14,231,350,283
District 9			
Bedford	71,921,105	406,058,957	477,980,062
Blair	89,028,032	814,496,814	903,524,846
Cambria	76,581,564	798,718,316	875,299,880
Fulton	49,241,590	175,113,700	224,355,290

Exhibit 26 Continued

District/County	Truck VMT	Passenger VMT	Total VMT
Huntingdon	21,903,339	301,838,490	323,741,829
Somerset	42,326,070	479,070,880	521,396,950
Total	351,001,700	2,975,297,157	3,326,298,857
District 10			
Armstrong	52,889,237	463,227,224	516,116,461
Butler	150,145,373	1,410,253,475	1,560,398,848
Clarion	159,247,026	390,766,048	550,013,074
Indiana	78,631,417	578,962,580	657,593,997
Jefferson	129,900,380	392,184,522	522,084,902
Total	570,813,433	3,235,393,849	3,806,207,282
District 11			
Allegheny	466,573,494	5,425,032,124	5,891,605,618
Beaver	74,187,110	953,354,582	1,027,541,692
Lawrence	51,908,762	487,621,615	539,530,377
Total	592,669,366	6,866,008,321	7,458,677,687
District 12			
Fayette	84,042,098	735,755,545	819,797,643
Greene	65,818,348	348,023,842	413,842,190
Washington	305,330,937	1,697,610,710	2,002,941,647
Westmoreland	250,123,104	1,887,442,947	2,137,566,051
Total	705,314,487	4,668,833,044	5,374,147,531
Statewide Total	9,515,355,321	70,659,245,762	80,174,601,083

Source: Developed by LBFC Staff from data provided by PennDOT.

D. Population Statistics

SR 2021-53 asked for county population statistics. Exhibit 27 shows those populations from 1990 through 2020 and projections for 2025, 2030, 2035, and 2040. Note the projections are based on the 2010 census, as they were not yet available from the 2020 Census.

Exhibit 27

Population by Engineering District and County
 (1990-2040)

Engineering District / County	1990	2000	2010	2020	2025	2030	2035	2040
District 1								
Crawford	86,169	90,367	88,765	83,938	88,220	88,156	87,845	87,422
Erie	275,572	280,845	280,566	270,876	300,689	305,877	309,943	312,991
Forest	4,802	4,946	7,716	6,973	7,345	7,118	6,869	6,608
Mercer	121,003	120,307	116,638	110,652	119,821	121,313	122,422	122,884
Venango	59,381	57,555	54,984	50,454	55,447	55,516	55,392	55,157
Warren	45,050	43,863	41,815	38,587	40,100	39,459	38,552	37,335
Total	591,977	597,883	590,484	561,480	611,622	617,439	621,023	622,597
District 2								
Cameron	5,913	5,974	5,085	4,547	4,605	4,422	4,200	3,988
Centre	123,786	135,760	153,990	158,172	174,547	180,148	184,804	188,564
Clearfield	78,097	83,380	81,642	80,562	83,483	83,423	82,540	81,107
Clinton	37,182	37,910	39,238	37,450	43,400	44,973	46,639	48,164
Elk	34,878	35,111	31,946	30,990	30,473	30,081	29,477	28,758
Juniata	20,625	22,821	24,636	23,509	24,843	25,013	25,091	25,094
McKean	47,131	45,963	43,450	40,432	44,906	45,099	44,938	44,445
Mifflin	46,197	46,486	46,682	46,143	48,897	49,578	50,131	50,709
Potter	16,717	18,080	17,457	16,396	18,472	18,672	18,654	18,504
Total	410,526	431,485	444,126	438,201	473,626	481,409	486,474	489,333
District 3								
Bradford	60,967	62,761	62,622	59,967	64,984	65,812	66,453	67,051
Columbia	63,202	64,148	67,295	64,727	67,951	67,922	67,661	67,091
Lycoming	118,710	120,044	116,111	114,188	119,679	120,589	121,013	120,969
Montour	17,735	18,239	18,267	18,136	20,258	21,037	21,881	22,807

Exhibit 27 Continued

Engineering District / County	1990	2000	2010	2020	2025	2030	2035	2040
Northumberland	96,771	94,556	94,528	91,647	95,566	95,264	94,393	93,027
Snyder	36,680	37,546	39,702	39,736	41,936	42,156	42,110	41,678
Sullivan	6,104	6,556	6,428	5,840	6,561	6,531	6,492	6,482
Tioga	41,126	41,372	41,981	41,045	43,773	44,136	44,313	44,325
Union	36,176	41,624	44,947	42,681	48,719	49,931	50,993	51,641
Total	477,471	486,846	491,881	477,967	509,427	513,378	515,309	515,071
District 4								
Lackawanna	219,039	213,295	214,437	215,896	225,647	229,062	231,571	233,436
Luzerne	328,149	319,255	320,918	325,594	331,523	334,201	335,229	335,149
Pike	27,966	46,306	57,369	58,535	56,086	55,783	55,141	54,257
Susquehanna	40,380	42,238	43,356	38,434	41,975	41,525	40,839	49,713
Wayne	39,944	47,722	52,822	51,155	53,612	53,029	51,631	49,713
Wyoming	28,076	28,080	28,276	26,069	28,377	28,146	27,755	27,269
Total	683,554	696,896	717,178	715,683	737,220	741,746	742,166	739,957
District 5								
Berks	336,523	373,638	411,442	428,849	456,072	471,457	484,594	495,416
Carbon	56,846	58,802	65,249	64,749	62,905	62,144	61,369	60,536
Lehigh	291,130	312,090	349,497	374,557	375,581	385,431	394,240	402,087
Monroe	95,709	138,687	169,842	168,327	177,585	179,312	179,041	177,000
Northampton	247,105	267,066	297,735	312,951	315,642	321,338	325,019	326,487
Schuylkill	152,585	150,336	148,289	143,049	158,299	161,671	164,216	166,154
Total	1,179,898	1,300,619	1,442,054	1,492,482	1,546,084	1,581,353	1,608,479	1,627,680
District 6								
Bucks	541,174	597,635	625,249	646,538	533,956	637,730	637,929	634,771
Chester	376,396	433,501	498,886	534,413	553,690	573,576	590,383	603,068
Delaware	547,651	550,864	558,979	576,830	605,534	622,307	636,700	648,439
Montgomery	678,111	750,097	799,874	856,553	865,549	891,868	916,595	938,580

Exhibit 27 Continued

Engineering District / County	1990	2000	2010	2020	2025	2030	2035	2040
Philadelphia	1,585,577	1,517,550	1,526,006	1,603,797	1,705,076	1,753,054	1,804,302	1,859,944
Total	3,728,909	3,849,647	4,008,994	4,218,131	4,362,805	4,478,535	4,585,909	4,684,802
District 8								
Adams	78,797	102,742	101,407	103,852	105,361	106,380	106,662	106,210
Cumberland	195,257	213,670	235,406	259,469	260,023	268,063	275,025	280,505
Dauphin	237,813	251,805	268,100	286,401	284,598	289,132	292,986	296,766
Franklin	121,082	129,308	149,618	155,932	160,896	165,139	169,408	173,765
Lancaster	422,822	470,658	519,445	552,984	580,658	602,153	622,634	641,815
Lebanon	113,744	120,327	133,568	143,257	142,595	145,663	147,906	149,347
Perry	41,172	43,609	45,969	45,842	49,718	50,348	50,433	50,198
York	339,574	381,751	434,972	456,438	473,236	484,497	492,731	498,246
Total	1,550,261	1,713,870	1,888,485	2,004,175	2,057,085	2,111,375	2,157,785	2,196,852
District 9								
Bedford	47,919	49,976	49,762	47,577	50,147	50,025	49,562	48,779
Blair	130,542	129,144	127,089	122,822	129,722	130,220	130,228	130,036
Cambria	163,029	152,598	143,679	133,472	146,642	147,518	147,803	147,507
Fulton	13,837	14,261	14,845	14,556	15,021	15,138	15,226	15,407
Huntingdon	44,164	45,586	45,913	44,092	50,804	52,306	53,524	54,399
Somerset	78,218	80,023	77,742	74,129	76,476	76,267	75,784	75,132
Total	477,709	471,588	459,030	436,648	468,813	471,474	472,127	471,260
District 10								
Armstrong	73,478	72,392	68,941	65,558	65,901	64,982	63,768	62,474
Butler	152,013	174,083	183,862	193,763	194,498	197,650	199,132	198,873
Clarion	41,699	41,765	38,988	37,241	41,255	41,453	41,440	41,142
Indiana	89,994	89,605	88,880	83,246	97,329	99,756	102,073	103,997
Jefferson	46,083	45,932	45,200	44,492	45,151	45,220	45,220	45,245
Total	403,267	423,777	426,871	424,300	444,134	449,061	451,633	451,731

Exhibit 27 Continued

Engineering District / County	1990	2000	2010	2020	2025	2030	2035	2040
District 11								
Allegheny	1,336,449	1,281,666	1,223,348	1,250,578	1,286,990	1,307,654	1,326,558	1,343,354
Beaver	186,093	181,412	170,539	168,215	173,532	174,352	174,216	173,365
Lawrence	96,246	94,639	91,108	86,070	89,785	89,768	89,424	88,743
Total	1,618,788	1,557,717	1,484,995	1,504,863	1,550,307	1,571,774	1,590,198	1,605,462
District 12								
Fayette	145,351	148,645	136,606	128,804	138,967	139,981	140,338	140,353
Greene	44,164	40,672	38,686	35,954	40,517	40,706	40,505	39,990
Washington	204,584	202,897	207,820	209,349	207,225	207,065	205,671	203,270
Westmoreland	370,321	369,993	365,169	354,663	356,783	354,298	349,822	344,230
Total	764,420	762,207	748,281	728,770	743,492	742,050	736,336	727,843
Grand Total	11,886,780	12,292,535	12,702,379	13,002,700	13,504,614	13,759,594	13,967,439	14,132,588

Source: Developed by LBFC staff from US Census data.

SECTION IV FUNDING FOR MAJOR FIXED EXPENDITURES



Fast Facts...

- ❖ *\$8.5 billion was spent by the Engineering Districts and CMOs on fixed assets, operational expenses, and personnel services in FYs 2015-16 to 2021-22.*
- ❖ *From FY 2015 to 2020-21, Engineering Districts and CMOs spent \$1.1 billion in Expanded State Highway and Bridge Maintenance Allocations.*

Senate Resolution 2021-53 directed LBFC to identify the distribution of highway maintenance funding intended for major fixed expenditures, including personnel and benefit costs in each Engineering District and county maintenance office (CMO). We collected data and other information from PennDOT that provides an overview of how funds were spent in the Engineering Districts and CMOs for FYs 2015-16 through FY 2021-22.

The exhibits below show PennDOT's major expenditures by Engineering District. For detail by CMO, see Appendices D through H.

A. "Base" and "Non-Base" Allocations and Actual Expenditures

The Pennsylvania Vehicle Code defines highway maintenance as a program to preserve, repair, and restore a system of existing state roadways. PennDOT distributes an amount to each CMO based on the Act 1997-3 state highway maintenance funding formula, as discussed in Section III.

"Base allocation" is defined as the annual expenditure for routine maintenance operations by a CMO averaged over the immediately preceding five years. The "base" is the base allocation portion of the funding formula, whereas the "non-base" is the Additional State Highway Maintenance Appropriation (ASHMA) piece of the funding formula.

ASHMA is defined as state funds from the highway maintenance appropriation, secondary roads maintenance and resurfacing executive authorizations, and supplemental distributions according to section 9502(a)(2)(i) and (3)(ii) (relating to imposition of tax) more than all counties' base allocations.

Exhibits 28, 29, and 30 show each Engineering District's actual fixed expenditures during FYs 2015-2022 by fixed assets, operations, and personnel services.

Exhibit 28

**Engineering District Actual Fixed Assets Expenditures
 (FY 2015-16 to FY 2021-22)**

Engineering District	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
District 1							
Base	\$874,902	\$2,332,518	\$2,667,401	\$1,025,596	\$1,584,005	\$1,152,619	\$1,575,585
Non-Base	1,008	-	1,611	2,893	-	-	-
Total	\$875,910	\$2,332,518	\$2,669,012	\$1,028,489	\$1,584,005	\$1,152,619	\$1,575,585
District 2							
Base	282,863	832,174	871,152	353,302	889,046	130,005	403,224
Non-Base	-	-	3,194	-	9,859	335	1,500
Total	\$282,863	\$832,174	\$874,346	\$353,302	\$898,905	\$130,340	\$404,724
District 3							
Base	1,476,894	1,768,848	1,224,066	1,007,531	1,171,067	440,747	950,874
Non-Base	1,015	23,639	101,105	35,859	3,931	14,241	57,116
Total	\$1,477,909	\$1,792,487	\$1,325,171	\$1,043,390	\$1,174,998	\$454,988	\$1,007,990
District 4							
Base	1,498,712	2,177,154	1,099,994	1,346,121	188,247	741,049	1,950,987
Non-Base	-	7,817	-	19,021	9,834	27,084	52,617
Total	\$1,498,712	\$2,184,971	\$1,099,994	\$1,365,142	\$198,081	\$768,133	\$2,003,604
District 5							
Base	1,380,341	1,134,653	1,966,115	1,414,606	1,577,132	424,625	861,611
Non-Base	-	18,934	-	1,038	14,439	6,000	-
Total	\$1,380,341	\$1,153,587	\$1,966,115	\$1,415,644	\$1,591,571	\$430,625	\$861,611

Exhibit 28 Continued

Engineering District	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
District 6							
Base	615,975	861,683	682,737	561,733	723,618	605,499	626,320
Non-Base	-	-	-	-	-	-	-
Total	\$615,975	\$861,683	\$682,737	\$561,733	\$723,618	\$605,499	\$626,320
District 8							
Base	2,485,435	3,747,771	5,155,234	2,998,290	1,032,158	2,337,003	3,683,268
Non-Base	-	-	90,578	27,501	7,445	2,389	26,611
Total	\$2,485,435	\$3,747,771	\$5,245,812	\$3,025,791	\$1,039,603	\$2,339,392	\$3,709,879
District 9							
Base	286,270	706,615	2,101,193	1,171,324	1,204,758	515,626	438,314
Non-Base	19,622	-	97,848	181,516	-133	3,516	2,023
Total	\$305,892	\$706,615	\$2,199,041	\$1,352,840	\$1,204,625	\$519,142	\$440,337
District 10							
Base	343,145	235,822	433,007	449,137	332,842	25,925	474,169
Non-Base	-	-	-	-	-	-	-
Total	\$343,145	\$235,822	\$433,007	\$449,137	\$332,842	\$25,925	\$474,169
District 11							
Base	16,747	223,551	705,133	684,621	646,557	563,829	353,823
Non-Base	73,099	17,246	203,862	703,292	463,991	82,155	69,921
Total	\$89,846	\$240,797	\$908,995	\$1,387,913	\$1,110,548	\$645,984	\$423,744
District 12							
Base	52,460	19,227	141,225	196,571	141,478	17,473	147,637
Non-Base	-	7,922	-	-	-	-	4,710
Total	\$52,460	\$27,149	\$141,225	\$196,571	\$141,478	\$17,473	\$152,347

Exhibit 28 Continued

Engineering District	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
All Districts							
Base	9,313,744	14,040,016	17,047,257	11,208,832	9,490,908	6,954,400	11,465,812
Non-Base	94,744	75,558	498,198	971,120	509,366	135,720	214,498
Grand Total^{a/}	\$9,408,488	\$14,115,574	\$17,545,455	\$12,179,952	\$10,000,274	\$7,090,120	\$11,680,310

^{a/} The Grand Total includes the Engineering District offices and each CMO.

Source: Developed by LBFC staff from data provided by PennDOT.

A total of \$82 million was spent on fixed assets by the Engineering Districts and CMOs throughout the review period. Engineering District 8 had the highest total "base" fixed assets expenditure of \$21.4 million for the review period. Engineering District 12 had the lowest "base" fixed assets expenditure at \$716,071. Engineering District 11 had the highest "non-base" fixed assets expenditure of \$1.6 million. Engineering Districts 6 and 10 had zero "non-base" fixed asset spending over the review period.

The five Engineering Districts with the highest overall ("base and "non-base") actual fixed assets expenditures throughout the review period were:

- Engineering District 8 - \$21.6 million,
- Engineering District 1 - \$11.2 million,
- Engineering District 4 - \$9.1 million,
- Engineering District 5 - \$8.8 million,
- Engineering District 3 - \$8.3 million.

Exhibit 29

**Engineering District Actual Operational Expenditures
 (FY 2015-16 to FY 2021-22)**

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 1							
Base	\$39,253,081	\$31,626,191	\$34,389,294	\$33,486,487	\$30,292,992	\$22,315,954	\$36,831,504
Non-Base	4,245,216	1,940,294	2,599,799	4,080,486	7,903,954	1,040,529	1,485,861
Total	\$43,498,297	\$33,566,484	\$36,989,093	\$37,566,972	\$38,196,946	\$23,356,483	\$38,317,365
District 2							
Base	30,355,753	32,380,785	39,487,043	29,220,563	22,387,189	17,575,814	34,829,829
Non-Base	2,666,477	2,498,136	2,863,255	2,260,604	1,112,007	9,999,373	7,043,515
Total	\$33,022,229	\$34,878,920	\$42,350,298	\$31,481,167	\$23,499,196	\$27,575,187	\$41,873,343
District 3							
Base	33,534,685	40,036,740	35,273,612	36,935,884	28,732,332	25,229,399	39,794,109
Non-Base	2,138,400	10,465,894	8,573,081	-2,759,469	12,289,684	1,721,841	3,336,949
Total	\$35,673,086	\$50,502,634	\$43,846,692	\$34,176,415	\$41,022,016	\$26,951,240	\$43,131,058
District 4							
Base	42,490,488	45,653,072	46,200,307	40,382,406	38,541,253	22,582,360	50,915,810
Non-Base	6,796,950	4,193,618	4,659,190	822,493	6,580,731	4,224,176	7,804,753
Total	\$49,287,437	\$49,846,690	\$50,859,497	\$41,204,899	\$45,121,983	\$26,806,536	\$58,720,563
District 5							
Base	45,474,750	37,661,523	46,496,484	40,612,327	28,919,830	13,677,977	39,992,467
Non-Base	7,766,234	7,778,233	9,075,328	5,775,533	8,338,698	8,787,855	8,339,698
Total	\$53,240,984	\$45,439,756	\$55,571,812	\$46,387,860	\$37,258,528	\$22,465,832	\$48,332,164
District 6							
Base	83,322,461	71,446,202	89,797,688	72,046,372	52,252,175	49,968,334	56,075,799
Non-Base	14,595,945	15,388,336	16,921,113	18,865,928	20,289,570	22,013,258	30,191,901
Total	\$97,918,406	\$86,834,538	\$106,718,802	\$90,912,301	\$72,541,746	\$71,981,592	\$86,267,700
District 8							
Base	36,457,066	49,239,915	50,180,082	48,592,379	36,632,062	28,885,627	48,778,538
Non-Base	45,820,266	17,742,237	11,912,320	10,386,147	9,883,859	7,998,426	11,082,318
Total	\$82,277,332	\$66,982,152	\$62,092,402	\$58,978,526	\$46,515,921	\$36,884,054	\$59,860,856
District 9							
Base	33,021,563	30,949,447	28,483,700	27,901,205	23,403,258	18,636,591	28,897,234
Non-Base	1,999,180	1,375,189	3,157,005	6,448,138	4,135,911	2,617,757	2,349,179

Exhibit 29 Continued

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Total	\$35,020,743	\$32,324,637	\$31,640,705	\$34,349,343	\$27,539,169	\$21,254,347	\$31,246,413
District 10							
Base	36,132,679	30,888,652	32,068,640	36,424,073	30,863,842	21,506,435	33,450,545
Non-Base	1,973,274	2,652,300	1,872,782	2,300,885	2,852,389	2,004,388	2,021,866
Total	\$38,105,952	\$33,540,952	\$33,941,422	\$38,724,958	\$33,716,231	\$23,510,823	\$35,472,411
District 11							
Base	44,052,752	53,898,673	56,652,818	50,785,083	52,357,515	31,068,840	45,800,269
Non-Base	35,457,429	29,204,573	30,263,053	28,420,038	33,424,193	56,441,636	31,019,474
Total	\$79,510,181	\$83,103,246	\$86,915,870	\$79,205,121	\$85,781,708	\$87,510,476	\$76,819,743
District 12							
Base	43,837,804	40,654,552	41,427,774	47,504,895	45,805,781	28,972,235	42,558,837
Non-Base	2,560,900	3,909,547	3,801,811	-1,029,813	2,917,490	3,699,098	6,681,542
Total	\$46,398,704	\$44,564,099	\$45,229,584	\$46,475,082	\$48,723,271	\$32,671,332	\$49,240,379
All Districts							
Base	467,933,021	464,435,752	500,457,442	463,891,674	390,188,231	280,419,567	457,924,940
Non-Base	126,020,271	97,148,357	95,698,736	75,570,971	109,728,486	120,548,337	111,357,056
Grand Total	\$593,953,292	\$561,584,109	\$596,156,178	\$539,462,644	\$499,916,717	\$400,967,904	\$569,281,996

Source: Developed by LBFC staff from data provided by PennDOT.

Throughout the review period, PennDOT's engineering districts and CMOs spent \$3.8 billion on operating expenses. Engineering District 6 had the highest total "base" operational expenditure of \$474.9 million for the review period. Engineering District 9 had the lowest "base" operational spending at \$191.3 million. Engineering District 11 had the highest "non-base" operational expenditures at \$244.2 million. Engineering District 10 had the lowest "non-base" operational expenditure at \$15.7 million.

The five Engineering Districts with the highest overall ("base and "non-base") actual operational expenditures over the course of the review period were:

- Engineering District 6 - \$613.2 million,
- Engineering District 11 - \$578.8 million,
- Engineering District 8 - \$413.6 million,

- Engineering District 4 - \$321.8 million,
- Engineering District 12 - \$313.3 million.

Exhibit 30

**Engineering District Actual Personnel Services Expenditures
 (FY 2015-16 to FY 2021-22)**

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 1							
Base	\$50,525,059	\$53,934,174	\$53,728,847	\$53,186,028	\$53,555,480	\$52,151,062	\$53,864,718
Non-Base	999,724	959,915	814,891	751,528	942,731	327,908	760,540
Total	\$51,524,783	\$54,894,089	\$54,543,738	\$53,937,556	\$54,498,211	\$52,478,970	\$54,625,259
District 2							
Base	54,846,556	58,129,553	56,893,078	56,788,102	55,106,855	55,645,563	55,313,178
Non-Base	2,503,179	3,085,832	2,485,525	1,860,119	862,211	1,137,541	1,531,889
Total	\$57,349,735	\$61,215,385	\$59,378,603	\$58,648,221	\$55,969,066	\$56,783,104	\$56,845,067
District 3							
Base	62,528,665	68,116,821	65,203,638	63,897,185	65,919,367	66,391,626	65,533,169
Non-Base	2,610,727	4,214,014	3,083,530	2,489,090	1,911,507	1,592,862	2,881,042
Total	\$67,139,392	\$72,330,834	\$68,287,168	\$66,386,275	\$67,830,874	\$67,984,488	\$68,414,211
District 4							
Base	55,891,133	61,964,684	61,264,597	59,767,912	60,866,183	60,077,590	62,689,397
Non-Base	1,263,139	1,222,116	1,275,573	1,508,922	857,207	1,420,208	1,350,030
Total	\$57,154,273	\$63,186,800	\$62,540,170	\$61,276,834	\$61,723,390	\$61,497,799	64,039,428
District 5							
Base	53,879,537	57,006,344	57,883,609	56,850,228	56,117,958	55,832,539	56,690,855
Non-Base	2,044,503	1,857,491	1,882,062	3,285,705	1,895,919	2,196,667	2,111,328
Total	\$55,924,039	\$58,863,835	\$59,765,671	\$60,135,933	\$58,013,876	\$58,029,205	58,802,183
District 6							
Base	52,679,620	56,133,361	56,221,173	57,315,662	51,641,958	50,729,511	49,005,069
Non-Base	2,783,418	1,630,857	1,771,808	1,151,822	740,006	1,135,275	2,492,563
Total	\$55,463,038	\$57,764,217	\$57,992,981	\$58,467,484	\$52,381,964	\$51,864,786	\$51,497,632

Exhibit 30 Continued

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 8							
Base	75,669,324	78,378,574	78,060,074	77,486,260	73,898,852	75,413,700	73,564,793
Non-Base	5,176,458	4,775,551	3,933,054	3,874,104	1,727,129	1,143,909	2,238,227
Total	\$80,845,782	\$83,154,125	\$81,993,128	\$81,360,365	\$75,625,981	\$76,557,608	\$75,803,020
District 9							
Base	55,890,548	58,861,220	57,778,375	59,098,867	56,955,961	57,619,326	58,602,366
Non-Base	1,603,744	1,854,058	1,626,392	2,041,003	1,119,206	558,023	1,034,852
Total	\$57,494,292	\$60,715,278	\$59,404,767	\$61,139,870	\$58,075,167	\$58,177,349	\$59,637,218
District 10							
Base	48,513,050	50,520,814	48,240,312	48,884,251	49,072,027	49,771,380	50,184,075
Non-Base	1,463,799	1,469,733	2,039,548	2,438,790	1,437,252	850,568	684,862
Total	\$49,976,849	\$51,990,547	\$50,279,860	\$51,323,041	\$50,509,279	\$50,621,948	\$50,868,938
District 11							
Base	44,435,158	46,649,816	46,848,375	47,764,963	48,645,641	45,476,223	45,149,390
Non-Base	3,966,731	4,196,315	4,476,683	3,013,899	3,277,563	3,250,310	2,825,825
Total	\$48,401,889	\$50,846,130	\$51,325,058	\$50,778,862	\$51,923,204	\$48,726,533	\$47,975,215
District 12							
Base	50,236,542	52,400,869	51,619,817	52,992,348	51,328,500	52,602,156	52,648,929
Non-Base	1,425,691	1,886,981	1,974,446	1,330,465	2,364,984	1,233,500	1,450,606
Total	\$51,662,233	\$54,287,850	\$53,594,263	\$54,322,812	\$53,693,484	\$53,835,655	\$54,099,536
All Districts							
Base	605,095,191	642,096,229	633,741,894	634,031,807	623,108,779	621,710,676	623,245,940
Non-Base	25,841,113	27,152,862	25,363,513	23,745,446	17,135,715	14,846,770	19,361,766
Grand Total	\$630,936,305	\$669,249,091	\$659,105,408	\$657,777,253	\$640,244,495	\$636,557,446	\$642,607,706

Source: Developed by LBFC staff from data provided by PennDOT.

Engineering districts and CMOs used \$4.5 billion in funding for personnel services expenditures throughout the review period. Engineering District 8 had the highest total “base” personnel services expenditure of \$532.5 million for the review period. Engineering District 11 had the lowest “base” personnel services expenditure at \$325 million. Engineering District 11 had the highest “non-base” personnel services expenditures at \$25 million. Engineer-

ing District 1 had the lowest "non-base" personnel services expenditure at \$5.6 million. The five Engineering Districts with the highest overall ("base and "non-base") actual personnel services expenditures over the course of the review period were:

- Engineering District 8 - \$555.3 million,
- Engineering District 3 - \$476.4 million,
- Engineering District 9 - \$414.6 million,
- Engineering District 5 - \$409.5 million,
- Engineering District 2 - \$406.2 million.

Overall, the Engineering Districts and CMOs spent \$8.4 billion on fixed assets, operational expenses, and personnel services during the review period. Exhibit 31 shows that of that \$8.4 billion, \$7.5 billion was spent on "base" expenditures and \$902.7 million on "non-base" expenditures.³⁴

Exhibit 31

**Engineering District Actual Overall Expenditures
 (FY 2015-16 to FY 2021-22)**

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
District 1								
Base	\$90,653,042	\$87,892,882	\$90,785,542	\$87,698,111	\$85,432,477	\$75,619,636	\$92,271,807	\$610,353,497
Non-Base	5,245,947	2,900,209	3,416,300	4,834,907	8,846,685	1,368,437	2,246,401	28,858,887
Total	\$95,898,989	\$90,793,091	\$94,201,842	\$92,533,017	\$94,279,163	\$76,988,073	\$94,518,209	\$639,212,384
District 2								
Base	85,485,172	91,342,512	97,251,273	86,361,967	78,383,089	73,351,382	90,546,231	602,722,162
Non-Base	5,169,655	5,583,968	5,351,974	4,520,722	1,984,077	11,137,249	8,576,904	42,324,549
Total	\$90,654,827	\$96,926,480	\$102,603,247	\$90,882,689	\$80,367,166	\$84,488,631	\$99,123,135	\$645,046,176
District 3								
Base	97,540,245	109,922,409	101,701,315	101,840,599	95,822,766	92,061,772	106,278,152	705,167,259
Non-Base	4,750,142	14,703,546	11,757,716	-234,520	14,205,122	3,328,945	6,275,108	54,786,058
Total	\$102,290,387	\$124,625,955	\$113,459,031	\$101,606,079	\$110,027,888	\$95,390,717	\$112,553,260	\$759,953,317

³⁴ Not all funds spent at the Engineering District level are for maintenance activities.

Exhibit 31 Continued

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
District 4								
Base	99,880,333	109,794,910	108,564,898	101,496,439	99,595,682	83,401,000	115,556,194	718,289,457
Non-Base	8,060,089	5,423,550	5,934,764	2,350,436	9,447,772	5,671,469	9,207,400	46,095,480
Total	\$107,940,423	\$115,218,461	\$114,499,662	\$103,846,875	\$109,043,454	\$89,072,469	\$124,763,594	\$764,384,937
District 5								
Base	100,734,628	95,802,520	106,346,208	98,877,160	86,614,919	69,935,141	97,544,933	655,855,510
Non-Base	9,810,737	9,654,657	10,957,390	9,062,275	10,249,056	24,690,522	10,451,026	84,875,663
Total	\$110,545,365	\$105,457,178	\$117,303,598	\$107,939,436	\$96,863,976	\$94,625,663	\$107,995,959	\$740,731,173
District 6								
Base	136,618,056	128,441,246	146,701,598	129,923,768	104,617,751	101,303,345	105,707,188	856,312,951
Non-Base	17,379,363	17,019,193	18,692,921	20,017,750	21,029,57	23,148,533	32,684,464	149,971,801
Total	\$153,997,419	\$145,460,438	\$165,394,519	\$149,941,518	\$125,647,328	\$124,451,877	\$138,391,652	\$1,003,284,752
District 8								
Base	114,611,825	131,366,260	133,395,390	129,076,930	141,592,532	106,636,330	126,026,598	882,705,866
Non-Base	45,608,037	22,517,787	15,935,952	14,287,752	11,618,433	9,144,724	13,347,157	132,459,842
Total	\$160,219,863	\$153,884,047	\$149,331,343	\$143,364,682	\$153,210,965	\$115,781,054	\$139,373,755	\$1,015,165,708
District 9								
Base	89,198,381	90,517,283	88,363,268	88,171,396	81,563,977	76,771,543	87,937,914	602,523,762
Non-Base	3,622,547	3,229,247	4,881,245	8,670,657	1,899,404	3,179,295	3,386,054	32,224,029
Total	\$92,820,928	\$93,746,530	\$93,244,514	\$96,842,053	\$86,818,960	\$79,950,838	\$91,323,968	\$634,747,790
District 10								
Base	84,988,873	81,645,288	80,741,959	85,757,461	80,268,711	71,303,740	84,108,789	568,814,822
Non-Base	3,437,073	4,122,033	3,912,330	4,739,675	4,89,640	2,854,956	2,706,728	26,062,436
Total	\$88,425,946	\$85,767,322	\$84,654,289	\$90,497,136	\$84,558,351	\$74,158,696	\$86,815,517	\$594,877,258
District 11								
Base	88,504,657	100,772,039	104,206,326	99,234,667	101,649,713	77,108,892	91,303,482	662,779,776
Non-Base	39,497,259	33,418,133	34,943,598	32,137,229	37,165,747	59,774,101	33,915,220	270,851,287
Total	\$128,001,916	\$134,190,172	\$139,149,924	\$131,371,896	\$138,815,460	\$136,882,993	\$125,218,702	\$933,631,063
District 12								
Base	94,126,806	93,074,648	93,188,816	100,693,814	97,275,759	81,591,863	95,355,404	655,307,110
Non-Base	3,986,591	5,804,450	5,776,257	300,652	5,282,474	4,932,597	8,136,858	34,219,878
Total	\$98,113,397	\$98,879,098	\$98,965,072	\$100,994,466	\$102,558,233	\$86,524,460	\$103,492,262	\$689,526,988
All Districts								
Base	1,082,342,019	1,120,571,998	1,151,246,594	1,109,132,311	1,052,817,378	909,084,644	1,092,636,693	7,517,831,637
Non-Base	146,567,441	123,376,774	121,560,447	100,687,536	129,373,567	149,230,826	130,933,318	902,729,910
Grand Total	\$1,228,909,460	\$1,244,948,773	\$1,272,807,041	\$1,209,819,848	\$1,182,190,945	\$1,058,315,470	\$1,223,570,011	\$8,420,561,546

Source: Developed by LBFC staff from data provided by PennDOT.

B. Expanded State Highway and Bridge Maintenance Allocation

Appropriation 409 (A-409), Expanded State Highway and Bridge Maintenance Allocation, funding is used for additional highway and bridge maintenance activities. A-409 was added as part of Act 2013-89 and was initially used for specific projects. Over time, PennDOT used the allocation for routine highway maintenance.

Exhibit 32 shows each Engineering District's actual A-409 expenditures for fixed assets, operational expenses, and personnel services for FY 2015-16 through 2021-22.

Exhibit 32

Engineering District Actual Expanded State Highway and Bridge Maintenance Allocation Expenditures (FY 2015-16 to FY 2021-22)

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 1							
Fixed	-	-	-	-	-	-	-
Operational	\$6,806,983	\$5,459,867	\$12,244,078	\$15,239,640	\$7,290,425	\$4,044,250	\$6,502,399
Personnel	72,883	187,638	228,044	210,277	208,333	179,389	107,013
Total	\$6,879,866	\$5,647,505	\$12,472,122	\$15,449,917	\$7,498,758	\$4,223,639	\$6,609,412
District 2							
Fixed	-	-	-	-	-	-	-
Operational	21,999,939	25,693,404	24,212,960	25,471,420	16,149,475	11,242,846	6,453,134
Personnel	292,158	111,451	352,323	275,146	111,530	176,620	56,959
Total	\$22,292,097	\$25,804,855	\$24,565,283	\$25,746,566	\$16,261,005	\$11,419,466	\$6,510,093
District 3							
Fixed	-	-	-	-	-	-	-
Operational	13,440,573	25,252,751	19,528,058	24,335,676	23,385,973	21,344,908	21,558,314
Personnel	320,186	1,436,793	410,420	256,590	404,827	627,227	325,054
Total	\$13,760,759	\$26,689,544	\$19,938,478	\$24,592,266	\$23,790,800	\$21,972,135	\$21,883,368

Exhibit 32 Continued

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 4							
Fixed	-	-	-	-	-	-	-
Operational	8,851,990	12,729,080	10,325,943	16,634,465	13,566,825	9,025,463	12,708,725
Personnel	236,751	582,064	255,156	399,338	416,510	503,523	233,325
Total	\$9,088,741	\$13,311,144	\$10,581,099	\$17,033,803	\$13,983,335	\$9,528,986	\$12,942,050
District 5							
Fixed	-	-	-	-	-	-	-
Operational	3,489,127	876,837	4,458,262	3,793,972	6,306,528	2,249,409	4,860,642
Personnel	-	-	-	-	-	-	-
Total	\$3,489,127	\$876,837	\$4,458,262	\$3,793,972	\$6,306,528	\$2,249,409	\$4,860,642
District 6							
Fixed	-	-	-	-	-	-	-
Operational	25,268,016	40,185,065	25,555,899	42,013,523	59,338,406	36,367,043	28,340,401
Personnel	-	-	-	-	-	-	-
Total	\$25,268,016	\$40,185,065	\$25,555,899	\$42,013,523	\$59,338,406	\$36,367,043	\$28,340,401
District 8							
Fixed	-	-	-	-	-	-	-
Operational	1,930,042	6,800,361	8,733,005	9,966,963	12,284,065	9,014,258	13,229,567
Personnel	2,225	16,505	75,313	365,193	339,441	37,677	134,148
Total	\$1,932,267	\$6,816,866	\$8,808,318	\$10,332,156	\$12,623,506	\$9,051,935	\$13,363,715
District 9							
Fixed	-	-	-	-	-	-	-
Operational	4,919,960	8,430,388	13,137,787	16,097,208	9,091,953	5,236,690	5,598,686
Personnel	141,272	221,061	296,206	409,131	226,410	209,770	93,705
Total	\$5,061,232	\$8,651,449	\$13,433,993	\$16,506,339	\$9,318,363	\$5,446,460	\$5,692,391
District 10							
Fixed	-	-	-	-	-	-	-
Operational	15,176,745	20,691,196	18,209,893	21,029,518	23,998,255	18,185,355	18,269,675
Personnel	188,906	171,794	430,302	244,070	341,271	293,690	402,334
Total	\$15,365,651	\$20,862,990	\$18,640,195	\$21,273,588	\$24,339,526	\$18,479,045	\$18,672,009

Exhibit 32 Continued

Engineering District	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 11							
Fixed	-	-	-	-	-	-	-
Operational Personnel	8,066,649	5,113,254	1,701,907	6,181,756	6,769,922	8,519,750	9,965,031
Total	\$8,066,649	\$5,113,254	\$1,701,907	\$6,181,756	\$6,769,922	\$8,519,750	\$9,965,031
District 12							
Fixed	-	-	-	-	-	-	-
Operational Personnel	4,678,636	10,531,150	12,317,947	13,743,198	16,658,884	7,564,987	9,702,719
	43,550	114,363	244,767	212,441	264,980	220,720	129,557
Total	\$4,722,186	\$10,645,513	\$12,562,714	\$13,955,639	\$16,923,864	\$7,785,707	\$9,832,276
All Districts							
Fixed	-	-	-	-	-	-	-
Operational Personnel	114,628,658	161,763,354	150,425,738	194,507,339	194,840,711	136,123,611	137,189,294
	1,297,930	2,841,669	2,292,531	2,372,187	2,312,301	2,248,617	1,482,097
Grand Total	\$115,926,588	\$164,605,023	\$152,721,269	\$196,879,526	\$197,153,012	\$138,372,228	\$138,671,391

Source: Developed by LBFC staff from data obtained from PennDOT.

Engineering districts and CMOs spent \$1.1 billion in A-409 Expanded State Highway and Bridge Maintenance Allocation funding throughout the review period. None of the engineering districts or CMOs spent A-409 funds on fixed assets. As illustrated in Exhibit 32, most of these funds were used for operational expenses (\$1.08 billion), and eight engineering districts used A-409 funds for personnel services (\$29.7 million).

The five Engineering Districts with the highest overall A-409 funds spent during the review period were:

- Engineering District 6 - \$257.1 million,
- Engineering District 3 - \$152.6 million,
- Engineering District 10 - \$137.6 million,
- Engineering District 2 - \$132.6 million,
- Engineering District 4 - \$86.5 million.

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SECTION V

EMERGENCY FUNDING



Fast Facts...

- ❖ *PennDOT annually allocated \$10 to \$22 million to an Emergency Fund.*
- ❖ *Emergency funds are used for a variety of significant events.*
- ❖ *PennDOT sometimes needs additional funds for emergency situations.*

Senate Resolution 2021-53 directed LBFC to review state emergency funding totals by county maintenance offices (CMO) for acts of nature such as flooding and landslides. We collected data and other information from PennDOT that provides an overview of how appropriations from the annual Emergency Fund allocation are distributed to PennDOT's CMOs for unplanned costs due to emergencies involving state-owned highways and bridges.

A. Emergency Funding for Acts of Nature and Other Significant Events.

Although landslides, washouts, and other events impacting state-owned highways and bridges are generally accounted for through PennDOT's maintenance and construction process, emergencies affecting state highways are the exception due to their unexpected nature. To address these unanticipated costs that would otherwise interfere with the ability of PennDOT's CMOs to complete regular state highway maintenance operations, the PennDOT Central Office typically places additional funds from its state appropriation into its Emergency Fund³⁵. These annual allocations ranged from \$10 million to \$22 million from FYs 2015-16 to 2021-22.

Monies in the Emergency Fund are used by the PennDOT Engineering Districts and county maintenance offices (CMOs) for emergency maintenance and repairs to state highways and bridges due to acts of nature and other significant events. The Emergency Fund may be further augmented in a given fiscal year by deposits from additional resources explained below. Exhibit 33 illustrates the total funds available at the beginning of each fiscal year of the study period and how much was distributed each fiscal year. As illustrated, not all emergency funds are expended every fiscal year. The unused balance of the state funds from the Emergency Fund is distributed back to all the counties during the closing process at the end of the fiscal year. All monies awarded from the Emergency Fund go directly to CMOs.

³⁵ The Emergency Fund is not a line-item appropriation. The central office places money, out of its Highway Maintenance appropriation, in the Emergency Fund in case of emergency.

Exhibit 33

**Total Emergency Funding Distributed and Undistributed
 (State Funds Only – In Thousands)**

Item	1997-98	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Total Funds Available ^a	\$6,000	\$20,785	\$23,154	\$10,000	\$125,626	\$31,660	\$15,000	\$22,000	\$254,225
Total Distributed	5,292	18,603	23,154	9,197	82,431	31,660	14,820	14,448	199,605
Total Undistributed	\$708	\$2,182	-	\$803	\$43,195	-	\$180	\$7,552	\$54,620

^a Total emergency funds available reflects original appropriations, monies from an additional Efund, and any reimbursement amounts (i.e., FY 2016-17 Butler CMO and Indiana CMO).

Source: Developed by LBFC staff from data provided by PennDOT.

The Emergency Fund also received funding from the Additional Efund in FYs 2016-17, 2018-19, and 2019-20. The Additional Efund is extra funding needed for emergencies, pulled from other central office organizations and the counties if required, and is not in addition to the A-582 appropriation.

The monies in the Emergency Fund are distributed to CMOs that incurred emergency maintenance or repairs to state highways and bridges located within their respective counties. Exhibit 34 illustrates those CMOs that needed funding from the Emergency Fund throughout the study period. Not all 67 CMOs received funding from the Emergency Fund.

Exhibit 34

**PennDOT Emergency Funding by CMO
 (State Funds Only – In Thousands)**

CMO	1997-98	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Allegheny	-	\$5,680	\$900	\$2,980	\$6,200	\$5,863	\$5,620	\$1,392	\$28,635
Beaver	-	1,600	-	-	-	2,548	1,702	338	6,188
Bedford	-	-	-	-	-	-	790	-	790
Blair	-	-	-	32	603	-	-	-	635
Bradford	162	-	64	-	21,857	6,013	1,307	-	29,403
Bucks	-	-	-	-	-	-	-	792	792
Bradford	39	625	-	364	1,892	300	-	-	3,220
Carbon	-	-	-	950	-	-	-	-	950
Chester	-	-	-	-	-	-	-	1,397	1,397
Clearfield	-	-	-	-	-	1,833	382	-	2,215
Columbia	-	-	-	-	4,520	234	-	-	4,754
Crawford	-	578	-	-	-	-	-	-	578
Cumberland	-	-	-	-	226	-	-	-	226
Dauphin	-	-	-	-	167	-	-	-	167
Delaware	4,587	-	-	-	-	-	-	37	4,624
District 4	-	1,996	-	-	-	-	-	-	1,996
Elk	-	1,300	-	-	-	-	-	-	1,300
Erie	-	-	-	800	-	-	-	-	800
Fayette	-	-	1,705	-	1,082	-	675	3,825	7,287
Fulton	-	-	-	-	-	90	-	-	90
Greene	138	-	-	-	917	-	-	-	1,055
Indiana	-	140	-	-	-	-	-	-	140
Jefferson	208	-	-	-	-	-	-	-	208
Junata	-	-	-	-	-	200	545	0	745
Lackawanna	-	710	-	-	1,032	180	-	476	2,398
Lancaster	-	578	-	-	25	-	-	-	603
Lebanon	-	-	-	750	379	2,750	390	-	4,269
Lehigh	-	-	-	-	382	-	-	-	382
Luzerne	-	-	-	-	33	-	-	1,810	1,843

Exhibit 34 Continued

CMO	1997-98	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	Total
Lycoming	-	947	12,315	39	7,657	985	-	-	21,943
Mercer	-	457	-	-	-	226	-	-	232
Monroe	-	-	-	-	6	-	-	-	6
Montgomery	-	1,500	-	-	-	-	-	1,181	2,681
Montour	64	-	-	-	1,013	-	-	-	1,077
Northampton	-	-	-	-	332	-	-	-	332
Northumberland	-	-	-	-	1,233	162	-	-	1,395
Perry	-	-	450	644	1,432	-	820	-	3,346
Philadelphia	-	-	-	-	-	-	-	455	455
Pike	-	750	-	-	-	-	-	114	864
Schuylkill	-	-	2,300	-	1,289	-	-	-	3,589
Snyder	-	-	-	-	43	-	-	-	43
Somerset	-	-	425	-	2,210	1,359	-	-	3,994
Sullivan	-	-	4,995	-	5,529	1,003	345	-	11,872
Susquehanna	-	-	-	1,438	13,628	1,492	377	880	17,815
Tioga	-	-	-	-	660	-	-	-	660
Venango	-	-	-	-	-	1,172	-	-	1,172
Warren	-	450	-	-	-	-	-	-	450
Washington	-	-	-	1,000	3,959	-	-	-	4,959
Wayne	-	800	-	200	-	-	-	251	1,251
Westmoreland	94	-	-	-	-	5,250	-	1,500	6,844
Wyoming	-	-	-	-	1,399	-	267	-	1,666
York	-	492	-	-	2,726	-	1,600	-	4,818
Total	\$5,292	\$18,603	\$23,154	\$9,197	\$82,431	\$31,660	\$14,820	\$14,448	\$199,620
Distributions									

Source: Developed by LBFC staff with data provided by PennDOT.

B. Categories of Emergency Funding

As shown in Exhibit 35, the distributed emergency funding is presented by each Engineering District and their respective CMOs, according to the type of emergency. Types of emergencies include road washouts, bridge collisions, flooding, bridge repair, etc.

Exhibit 35

PennDOT Emergency Funding by Engineering District, CMO, and Type of Emergency (State Funds only – In Thousands)

District/County	Reason for Funding	FY 1997-98	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
Total Emergency Funding Available ^a		\$6,000	\$20,785 ^b	\$23,154 ^c	\$10,000	\$125,626 ^d	\$31,660 ^e	\$15,000	\$22,000	\$254,225
District 1										
Crawford	Road Washout	-	578	-	-	-	-	-	-	578
Erie	Bridge Collision	-	-	-	800	-	-	-	-	800
Mercer	Bridge Repair	-	457	-	-	-	-	-	-	683
	Pipe Repair	-	-	-	-	-	226	-	-	-
Venango	Flooding ^g	-	-	-	-	-	1,172	-	-	1,172
Warren	Slide Remediation ^h	-	450	-	-	-	-	-	-	450
District 1 Total		-	1,485	-	800	-	1,398	-	-	3,683
District 2										
Clearfield	Slide Remediation	-	-	-	-	-	1,833	382	-	2,215
Elk	Slide ⁱ	-	1,300	-	-	-	-	-	-	1,300
Juniata	Bridge Repair	-	-	-	-	-	200	545	-	745
District 2 Total		-	1,300	-	-	-	2,033	927	-	4,260

Exhibit 35 Continued

District/County	Reason for Funding	FY 1997-98	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
District 3										
Bradford	Wysox Slide Emergency Repair	147	-	-	-	-	-	-	-	29,403
	Wysox Slide Permanent Repair	15	-	-	-	-	-	-	-	-
Columbia	Flooding	-	-	64	-	21,857	6,013	1,307	-	-
	Flooding	-	-	-	-	4,520	234	-	-	4,754
Lycoming	Slide	-	947	-	-	2,050	-	-	-	21,943
	Flooding	-	-	12,315	39	5,607	985	-	-	-
Montour	Slide	64	-	-	-	-	-	-	-	1,077
Northumberland	Flooding	-	-	-	-	1,013	-	-	-	-
	Flooding	-	-	-	-	1,233	162	-	-	1,395
Snyder	Flooding	-	-	-	-	43	-	-	-	43
Sullivan	Flooding	-	-	4,995	-	5,529	1,003	345	-	11,872
Tioga	Flooding	-	-	-	-	660	-	-	-	660
District 3 Total		226	947	17,374	39	42,512	8,397	1,652	-	71,147
District 4										
Lackawanna	Slide	-	710	-	-	-	-	-	-	2,398
	Flooding	-	-	-	-	1,032	-	-	-	-
Luzerne	Debris	-	-	-	-	-	180	-	-	-
	Roadway Restoration - Flooding	-	-	-	-	-	-	-	476	-
Pike	Flooding	-	-	-	-	33	-	-	-	1,843
	Roadway Emergency	-	-	-	-	-	-	-	1,000	-
Pike	NB/SB Mill Fill	-	-	-	-	-	-	-	-	465
	Pipe Washout	-	-	-	-	-	-	-	-	325
Pike	Roadway Restoration	-	-	-	-	-	-	-	20	-
	Slide Remediation	-	750	-	-	-	-	-	-	864

Exhibit 35 Continued

District/County	Reason for Funding	FY 1997-98	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
Susquehanna	Roadway Restoration - Flooding	-	-	-	-	-	-	-	114	-
	Slide	-	-	-	1,438	-	-	-	-	17,815
	Flooding	-	-	-	-	13,628	292	-	-	-
Wayne	Pipe Replacement	-	-	-	-	-	1,200	77	-	-
	Slope Repair	-	-	-	-	-	-	300	-	-
	Slide Remediation	-	-	-	-	-	-	-	880	-
	Bridge Repair	-	800	-	-	-	-	-	-	1,251
Wyoming	Bridge	-	-	-	200	-	-	-	-	-
	Roadway Restoration - Flooding	-	-	-	-	-	-	-	230	-
	Bridge Restoration	-	-	-	-	-	-	-	21	-
	Flooding	-	-	-	-	1,399	-	-	-	1,666
District 4 CMOs^f	Pipe Replacement	-	-	-	-	-	-	267	-	-
	Slide Repair - Design Only	-	1,996	-	-	-	-	-	-	1,996
District 4 Total		-	4,256	-	1,638	16,092	1,672	644	3,531	27,833
District 5										
Carbon	Rockslide	-	-	-	950	-	-	-	-	950
Lehigh	Flooding	-	-	-	-	382	-	-	-	382
Monroe	Flooding	-	-	-	-	6	-	-	-	6
Northampton	Flooding	-	-	-	-	332	-	-	-	332
Schuylkill	Wall Repair	-	-	2,300	-	-	-	-	-	3,589
	Flooding	-	-	-	-	1,289	-	-	-	-
District 5 Total		-	-	2,300	950	2,009	-	-	-	5,259
District 6										
Bucks	Flooding	-	-	-	-	-	-	-	792	792

Exhibit 35 Continued

District/County	Reason for Funding	FY 1997-98	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
Chester	Flooding	-	-	-	-	-	-	-	1,397	1,397
Delaware	Bridge –Fire-Tanker Accident	4,587	-	-	-	-	-	-	-	4,624
	Flooding	-	-	-	-	-	-	-	37	37
Montgomery	Sinkhole	-	1,500	-	-	-	-	-	-	2,681
	Flooding	-	-	-	-	-	-	-	1,181	1,181
Philadelphia	Flooding	-	-	-	-	-	-	-	455	455
District 6 Total		4,587	1,500	-	-	-	-	-	3,862	9,949
District 8										
Cumberland	Flooding	-	-	-	-	226	-	-	-	226
Dauphin	Flooding	-	-	-	-	167	-	-	-	167
Lancaster	Bridge Hit	-	578	-	-	-	-	-	-	603
	Flooding	-	-	-	-	25	-	-	-	25
Lebanon	Sinkhole	-	-	-	750	227	2,750	390	-	4,269
	Flooding	-	-	-	-	152	-	-	-	152
Perry	Rockslide	-	-	450	-	432	-	-	-	3,346
	Slide	-	-	-	644	1,000	-	-	-	1,644
	Rock Fence Fall	-	-	-	-	-	-	820	-	820
York	Bridge Hit	-	492	-	-	-	-	-	-	4,818
	Flooding	-	-	-	-	2,726	-	1,600	-	4,326
District 8 Total		-	1,070	450	1,394	4,955	2,750	2,810	-	13,429
District 9										
Bedford	Slope Failure	-	-	-	-	-	-	790	-	790
Blair	Structure Damage	-	-	-	32	118	-	-	-	635
	Pipe Drainage System Failure	-	-	-	-	225	-	-	-	225

Exhibit 35 Continued

District/County	Reason for Funding	FY 1997-98	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
Cambria	Slide	-	-	-	-	260	-	-	-	-
	Easy Grade Rock Fall	39	-	-	-	-	-	-	-	3,220
	Slide Remediation	-	625	-	-	-	-	-	-	-
	Slide	-	-	-	364	1,892	-	-	-	-
	Damaged Beam	-	-	-	-	-	300	-	-	-
Fulton							90			90
Somerset	Pipe Replacement	-	-	-	-	-	-	-	-	-
	Slide	-	-	425	-	940	1,293	-	-	3,994
	Slide Remediation	-	-	-	-	1,270	66	-	-	-
District 9 Total		39	625	425	396	4,705	1,749	790	-	8,729
District 10										
Indiana	Bridge Repair	-	140	-	-	-	-	-	-	140
Jefferson	Slide Remediation	208	-	-	-	-	-	-	-	208
District 10 Total		208	140	-	-	-	-	-	-	348
District 11										
Allegheny	Slide Remediation	-	3,280	-	-	-	-	-	-	28,635
	Culvert / Retaining Wall	-	2,400	-	-	-	-	-	-	-
	Slide	-	-	900	2,980	-	-	5,620	1,392	-
	Sinkhole	-	-	-	-	6,200	-	-	-	-
Beaver	Slide	-	1,600	-	-	-	2,548	1,702	338	6,188
District 11 Total		-	7,280	900	2,980	6,200	8,411	7,322	1,730	34,823
District 12										
Fayette	Storm Damage	-	-	1,705	-	-	-	-	-	7,287
	Slide Remediation	-	-	-	-	1,082	-	-	-	-
	Slide	-	-	-	-	-	-	675	3,825	-
Greene	White Creek Bridge	138	-	-	-	-	-	-	-	1,055

Exhibit 35 Continued

District/County	Reason for Funding	FY 1997-98	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	Total
	Slide Remediation	-	-	-	-	917	-	-	-	-
Washington	Embankment Failure	-	-	-	1,000	-	-	-	-	4,959
	Longwall Mining	-	-	-	-	3,959	-	-	-	-
Westmoreland	Sinkhole	94	-	-	-	-	2,750	-	-	6,844
	Slide	-	-	-	-	-	2,500	-	-	-
	Bridge Strike	-	-	-	-	-	-	-	1,500	-
District 12 Total		232	-	1,705	1,000	5,958	5,250	675	5,325	20,145
Total Distributions		5,292	18,603	23,154	9,197	82,431	31,660	14,820	14,448	199,605
Undistributed Funds		\$708	\$2,182	-	\$803	\$43,195	-	\$180	\$7,552	\$54,620

^a Total Emergency funds available reflects original appropriations, monies from an additional Efund, and any reimbursement amounts (i.e., FY 2016-17 Butler CMO and Indiana CMO).

^b In FY 2015-16, Butler and Indiana CMOs reimbursed the Emergency Fund for the monies each received for their respective emergencies after the insurance settlement; Exhibit ___ does not reflect the allocation of these emergency funds. In the case of Butler County, a state-owned bridge over I-79 was hit and needed emergency repairs. The Emergency Fund covered the cost so that the repairs could be made, and after that, the Butler CMO reimbursed the Emergency Fund \$581,000 upon receipt of its insurance payment. Indiana County also had to have emergency repairs made to a state-owned bridge in White Township that was hit and then reimbursed the Emergency Fund \$204,000 once it received its insurance payment.

^c In FY 2016-17, \$400,000 was transferred from the Emergency Fund to the Environmental Efund for Initial Consultant Funding. Also, in FY 2016-17, the Emergency Fund received \$13,554,000 from the Additional Efund. For FY 2016-17, there was excessive flood damage of \$16,000,000 in Sullivan and Lycoming counties.

^d In FY 2018-19, there was excessive flood damage, and \$110,626,000 was transferred from the Additional Efund to the Emergency Fund.

^e In FY 2019-20, \$16,660,000 was transferred from the Additional Efund to the Emergency Fund due to flooding and slides.

^f In FY 2016-17, District 4 received \$1,996,000 for slide repair design only. The following CMOs received money for the slide repair design: Pike CMO: \$690,000, Susquehanna CMO: \$485,000, and Wayne CMO: \$821,000.

^g Flooding covers flooding repairs and storm flooding.
 Slide remediation also covers slide repairs.

^h 'Slide' cover slide, shovel slide, landslide, and road slide unless expressly noted otherwise.

Source: Developed by LBFC staff from information and data provided by PennDOT.

SECTION VI WINTER OPERATIONS



Fast Facts

- ❖ *PennDOT has a variety of tools in its arsenal to keep roads clear in winter conditions.*
- ❖ *In FY 2021-22, PennDOT spent \$244,439,007 on winter operations.*
- ❖ *In FY 2021-22, the cost to clear one lane mile was \$2,859.*

One of the objectives of this study is to compare PennDOT districts on the effects of winter maintenance. During winter, the department aims to keep roads passable and safe.

As part of this study, we sent a questionnaire to the district executives at each PennDOT Engineering District. Question 9 of that survey is related to winter operations. Please see Section VIII of this report for additional information.

A. Storm Management and Plowing

PennDOT issues an annual Winter Services Guide, which discusses information regarding storm management, plowing, materials, equipment, and personnel.

According to the Winter Services Guide, each storm is unique, can have various impacts, and presents distinct challenges. PennDOT staff review weather reports and on-the-ground conditions to plan how to manage each storm. In a freezing rainstorm, county maintenance offices' (CMOs) crews may pretreat with salt brine, essentially a mix of water and salt, from the backs of anti-icing trucks before frozen precipitation begins. While salt brine is not needed for every storm, when it is used, it helps PennDOT get a jump start on removing ice and snow. Examples of when crews will not pretreat include when a storm is forecast to start as rain (rain will wash the material away) or when there is enough salt residue from a previous storm.

In addition to storm preparation, CMOs' use of winter materials during storms varies by roadway and precipitation type. Salt is the primary material used through a storm on higher-volume highways, especially during rush hours and on bridges, hills, curves, and intersections. On lower-volume roadways, salt will be reduced, and anti-skid will be used more.

PennDOT's focus for plowing is on interstates and expressways, which can have a designated route for a snowplow completed in roughly two hours.³⁶ It takes approximately three hours for other major routes or less traveled state roads. The time it takes for a plow truck to pass by the same point on the route depends on traffic and the amount of precipitation.

³⁶ The average PennDOT plow route is 40 miles.

B. Winter Maintenance Operations and Costs

PennDOT has a variety of materials and equipment to keep roads clear of winter precipitation listed in its Winter Services Guide. They include:

- *Anti-icing* - Applying salt brine to the road surface before winter storms. The solution lowers the freezing point of water and slows or prevents ice from forming a bond with the pavement during the early stages of a storm.
- *Anti-skid* - Crushed limestone is used as an anti-skid material in addition to salt. The antiskid varies by road type.
- *De-icing* - Applying salt or salt brine to the roadway after snow or ice accumulation.
- *Ground speed-activated salt spreader* - PennDOT trucks are equipped with an electronic material application system that automatically dispenses the desired amount of material. These systems ensure the material is applied at a consistent rate, whether the truck is going 15 mph or 45 mph.
- *Infrared temperature sensors* - Sensors are mounted on vehicles in the PennDOT fleet to provide the operator with the exact pavement temperature. The sensors help the operator determine if there is a potential for the roadway to freeze and when to start the treatment cycle.
- *Pre-wetted salt* - Road salt is sprayed with salt brine to enhance the salt's melting capability in cold weather. Prewetting lowers the melting point of salt to make it more effective in lower temperatures.
- *Salt Brine* - Salt brine is salt water produced at 65 PennDOT facilities. This material is used in anti-icing operations and to prewet salt.
- *Salt* - Salt remains the department's primary tool for fighting winter storms. PennDOT, which has 445 stockpiles around the state, has used an average of nearly 801,453 tons of salt over the last five winters.
- *Single, tandem, and triaxle trucks* - Over the past several years, PennDOT has been replacing its single axle trucks, capable of hauling eight tons of material, with larger and more powerful tandem axle trucks, which are capable of hauling 16 tons. Triaxle trucks can carry up to 22 tons.
- *Wing plow* - When mounted on both sides of a truck, a wing plow can allow a truck to clear nearly eight to nine additional feet of lane width in addition to the 11 feet or so already cleared by the main plow.
- *Tow plow* - Towed by a plow truck, and when combined with a front plow, the combination will clear a width of 25 feet or two full lanes.

Additionally, municipal agreements expand PennDOT's capabilities by allowing municipalities to clear state roads in their jurisdiction.

Exhibits 36, 37, and 38 show PennDOT's usage of salt brine, anti-skid material, and salt by Engineering District. Over the seven years of the study period, the department used: 124.5 million gallons of salt brine, 3.5 million tons of antiskid material, and 3.5 million tons of salt.

Exhibit 36

**Salt Brine Usage by District
(Gallons)**

District	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
District 1	1,436,786	1,759,161	1,885,945	1,895,978	1,521,038	1,428,538	1,436,786
District 2	724,230	1,214,478	1,060,315	1,330,518	1,660,557	2,829,477	724,230
District 3	363,706	491,662	930,034	844,407	633,510	942,215	363,706
District 4	425,420	843,577	1,656,605	1,063,834	1,024,806	1,268,277	425,420
District 5	669,439	1,304,544	1,473,232	1,267,946	804,256	941,310	669,439
District 6	306,935	464,582	322,491	617,475	221,538	331,392	306,935
District 8	636,124	931,228	1,144,913	1,350,841	349,759	1,222,529	636,124
District 9	552,155	1,005,950	859,391	1,094,201	710,733	1,235,778	552,155
District 10	639,075	836,787	854,623	714,128	443,925	639,639	639,075
District 11	299,867	585,441	487,917	537,590	411,565	318,572	299,867
District 12	631,597	1,067,159	1,129,185	978,936	592,610	1,029,777	631,597
Total	6,685,334	10,504,568	11,804,649	11,695,853	8,374,296	12,187,502	6,685,334

Source: Developed by LBFC Staff with data provided by PennDOT.

Exhibit 37

**Anti-Skid Usage by District
(Tons)**

District	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
District 1	52,077	78,917	81,882	75,090	54,285	59,645	57,097
District 2	64,404	103,149	102,547	96,155	62,740	79,185	55,945
District 3	28,076	51,968	56,408	55,522	42,696	53,746	45,486
District 4	41,873	79,869	91,085	79,749	59,211	72,536	56,500
District 5	21,122	25,056	38,099	31,528	16,169	30,153	25,268
District 6	3,630	3,977	6,305	5,214	1,138	2,178	4,239
District 8	25,643	25,905	34,604	42,122	9,710	35,212	21,496

Exhibit 37 Continued

District	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
District 9	62,980	73,836	90,287	110,521	61,777	85,865	58,622
District 10	43,669	55,860	65,081	57,687	35,188	53,049	40,343
District 11	15,426	9,708	12,121	9,019	5,810	6,750	7,472
District 12	43,379	39,979	50,811	39,650	25,409	46,206	40,810
Total	402,278	548,224	629,230	602,257	374,132	524,524	413,279

Source: Developed by LBFC Staff with data provided by PennDOT.

Exhibit 38

**Salt Usage by District
(Tons)**

District	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
District 1	49,362	78,652	92,026	76,193	67,234	77,422	71,552
District 2	46,591	76,648	70,202	75,126	46,809	66,496	48,030
District 3	33,171	60,895	66,762	72,610	46,867	66,500	55,566
District 4	53,571	110,377	132,985	111,834	77,446	111,515	92,343
District 5	36,015	55,534	94,828	80,950	37,682	78,380	61,260
District 6	56,757	60,275	130,611	104,869	17,011	101,673	68,732
District 8	43,381	47,272	79,765	93,723	17,559	71,290	43,424
District 9	47,799	60,902	73,275	90,052	47,714	73,594	60,161
District 10	56,951	68,281	90,484	85,943	61,342	86,057	72,106
District 11	47,380	49,203	76,975	62,313	30,120	74,554	56,773
District 12	57,747	62,794	92,918	69,089	36,896	90,307	69,320
Total	528,725	730,831	1,000,830	922,702	486,679	897,790	699,266

Source: Developed by LBFC Staff with data provided by PennDOT.

Costs for Winter Operations

Total costs for winter operations in the past seven fiscal years ranged from \$212.3 million in FY 2019-20 to \$303.0 million in FY 2017-18, an average of \$261.3 million. The total cost, by fiscal year, for PennDOT's winter operations is shown in Exhibit 39. These costs are shown by the engineering district in Exhibit 40. Costs per CMO are shown in Appendix I.

Snow-lane mileage is calculated as miles of road multiplied by the number of lanes. A one-mile section of a four-lane roadway would equal four snow-lane miles.

Total snow lane miles ranged from 85,485 miles in FY 2021-22 to 96,267 miles in FY 2015-16. Total snow lane miles cleared by PennDOT have been decreasing; according to a PennDOT official, snow lane mileage is adjusted each year based on the number of winter municipal agreements the department can enter to assist with winter operations.

Cost per snow lane mile ranged from \$2,208 in FY 2017-18 to \$3,263 in FY 2020-21, averaging \$2,780 over the seven fiscal years included in this study.

Exhibit 39

**Statewide Winter Operation Cost
 (FYs 2015-16 to 2021-22)**

Fiscal Year	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
2015-16	\$95,324,299	\$49,943,798	\$8,621,696	\$15,562,289	\$48,014,117	\$217,466,199	96,267	\$2,259
2016-17	112,752,828	59,013,800	9,394,137	12,571,540	61,836,606	255,568,912	96,239	2,656
2017-18	124,538,294	69,379,675	18,552,945	13,353,542	77,191,706	303,016,163	96,017	3,156
2018-19	123,665,633	67,511,900	15,234,947	13,887,728	73,349,963	293,650,172	96,034	3,058
2019-20	93,603,500	54,912,743	5,900,610	14,641,434	43,239,811	212,298,098	96,164	2,208
2020-21	110,875,743	75,639,312	18,108,128	15,587,726	81,857,521	302,068,430	92,849	138,570
2021-22	108,734,858	63,428,112	12,864,784	15,556,160	59,354,899	244,439,007	85,485	2,859

Source: Developed by LBFC Staff with data provided by PennDOT.

Exhibit 40

**Winter Cost Per Snow Lane Mile
 By District**

District	2015-16							County Snow Lane Miles	Cost Per Snow Lane Mile
	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost			
District 1	\$9,192,050	\$6,372,561	\$45,073	\$904,826	\$4,248,550	\$20,763,060	8,496	\$2,444	
District 2	10,201,116	5,715,793	19,036	211,192	4,806,774	20,953,911	7,833	2,675	
District 3	6,710,820	2,867,680	1,275	436,362	3,075,545	13,091,682	9,433	1,388	
District 4	7,764,723	4,012,583	636,247	596,186	4,789,540	17,799,279	8,463	2,103	
District 5	8,667,992	4,906,318	605,048	1,242,850	3,430,999	18,853,206	8,347	2,259	
District 6	7,037,052	2,738,349	5,629,454	5,406,588	4,382,187	25,193,630	11,403	2,209	
District 8	12,511,675	6,308,805	1,007,636	1,444,103	3,827,134	25,099,353	12,734	1,971	
District 9	10,582,661	5,583,676	10,413	334,203	5,350,897	21,861,850	8,351	2,618	
District 10	8,323,824	3,633,593	4,519	155,356	5,141,231	17,258,522	7,003	2,464	
District 11	5,880,380	3,637,925	423,914	3,484,280	3,514,908	16,941,408	5,970	2,838	
District 12	8,452,005	4,166,516	239,082	1,346,343	5,446,352	19,650,298	8,234	2,386	
Statewide Totals	\$95,324,299	\$49,943,798	\$8,621,696	\$15,562,289	\$48,014,117	\$217,466,199	96,267	\$2,259	

District	2016-17							County Snow Lane Miles	Cost Per Snow Lane Mile
	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost			
District 1	\$11,565,020	\$8,810,581	\$39,474	\$1,008,156	\$6,446,494	\$27,869,725	8,496	3,280	
District 2	13,231,200	7,872,302	15,695	156,505	7,764,652	29,040,355	7,830	3,709	
District 3	10,901,941	4,617,707	27,713	540,765	5,012,027	21,100,154	9,427	2,238	
District 4	13,879,853	6,848,084	1,998,259	815,795	9,041,296	32,583,288	8,466	3,849	

Exhibit 40 Continued

District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 5	10,104,308	5,426,866	800,942	927,624	4,678,533	21,938,273	8,340	2,630
District 6	6,708,179	2,379,084	5,369,036	4,175,619	3,792,342	22,424,260	11,386	1,969
District 8	10,792,359	5,357,935	699,877	934,583	4,218,611	22,003,365	12,732	1,728
District 9	11,606,367	6,016,604	7,460	327,152	6,286,322	24,243,906	8,351	2,903
District 10	9,688,481	4,148,459	-	151,147	5,855,270	19,843,357	7,004	2,833
District 11	5,683,241	3,327,164	317,171	2,463,729	3,462,480	15,253,785	5,976	2,553
District 12	8,591,879	4,209,015	118,510	1,070,462	5,278,579	19,268,445	8,231	2,341
Statewide Totals	\$112,752,828	\$59,013,800	\$9,394,137	\$12,571,540	\$61,836,606	\$255,568,912	96,239	\$2,656

2017-18

District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1	\$12,778,748	\$9,065,553	\$22,303	\$907,285	\$6,675,272	\$29,449,160	8,501	\$3,464
District 2	13,144,047	8,546,181	7,785	181,353	7,273,559	29,152,924	7,824	3,726
District 3	10,891,242	5,070,674	11,291	572,730	5,187,979	21,733,916	9,420	2,307
District 4	14,024,346	7,623,243	2,275,191	574,887	9,651,440	34,149,107	8,454	4,039
District 5	12,603,901	7,387,989	1,396,259	950,369	7,038,669	29,377,188	8,334	3,525
District 6	9,241,923	3,259,986	12,893,766	4,513,274	8,124,914	38,033,864	11,227	3,388
District 8	13,238,870	7,188,209	839,462	1,152,129	6,793,873	29,212,543	12,731	2,295
District 9	11,402,721	6,704,270	7,094	366,875	7,059,723	25,540,683	8,343	3,061
District 10	10,386,125	5,015,275	7,040	149,033	6,995,140	22,552,613	7,000	3,222
District 11	6,770,642	3,994,826	903,567	2,859,086	5,130,254	19,658,376	5,972	3,292
District 12	10,055,728	5,523,469	189,187	1,126,522	7,260,883	24,155,789	8,210	2,942
Statewide Totals	\$124,538,294	\$69,379,675	\$18,552,945	\$13,353,542	\$77,191,706	\$303,016,163	96,017	\$3,156

Exhibit 40 Continued

2018-19								
District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per County Snow Lane Mile
District 1	\$12,138,311	\$6,412,235	\$22,610	\$962,123	\$5,671,073	\$25,206,353	8,504	\$2,964
District 2	12,824,267	9,458,767	57,730	204,689	7,602,082	30,147,535	7,813	3,859
District 3	11,384,824	5,495,616	15,656	482,657	5,710,705	23,089,458	9,410	2,454
District 4	12,732,565	6,964,567	1,922,852	591,747	8,689,166	30,900,897	8,466	3,650
District 5	11,888,910	6,763,032	1,544,429	1,103,578	6,274,829	27,574,779	8,345	3,304
District 6	8,270,996	2,891,416	9,396,382	4,549,093	6,432,605	31,540,493	11,195	2,817
District 8	13,708,664	7,351,664	1,270,311	1,285,061	7,507,928	31,123,627	12,725	2,446
District 9	13,618,913	7,880,103	8,521	365,816	8,656,517	30,529,870	8,383	3,642
District 10	10,202,442	4,817,980	1,020	146,618	6,567,382	21,735,442	7,003	3,104
District 11	6,927,217	4,150,962	637,792	3,022,327	4,219,610	18,957,908	5,978	3,171
District 12	9,968,524	5,325,557	357,644	1,174,019	6,018,066	22,843,810	8,211	2,782
Statewide Totals	\$123,665,633	\$67,511,900	\$15,234,947	\$13,887,728	\$73,349,963	\$293,650,172	96,034	\$3,058
2019-20								
District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per County Snow Lane Mile
District 1	\$11,459,126	\$7,629,304	\$7,308	\$919,004	\$5,324,335	\$25,339,077	8,514	2,976
District 2	10,277,994	8,200,989	6,182	213,121	5,075,864	23,774,151	7,819	3,041
District 3	8,921,414	4,322,942	18,188	531,569	4,199,797	17,993,909	9,414	1,911
District 4	11,345,421	6,302,076	1,113,478	632,288	6,854,189	26,247,452	8,522	3,080
District 5	9,102,327	5,409,540	694,679	1,100,338	3,215,310	19,522,194	8,354	2,337
District 6	3,579,195	1,521,160	3,284,250	5,170,238	1,057,931	14,612,773	11,229	1,301
District 8	6,795,740	3,811,322	484,865	1,265,356	1,532,797	13,890,079	12,744	1,090
District 9	9,919,595	5,823,057	3,063	407,849	5,220,585	21,374,149	8,383	2,550
District 10	8,800,373	4,170,851	6,539	150,571	5,048,163	18,176,498	7,006	2,595

Exhibit 40 Continued

District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 11	5,638,490	3,448,791	163,240	3,073,876	2,250,243	14,574,639	5,969	2,442
District 12	7,763,826	4,272,712	118,819	1,177,223	3,460,597	16,793,177	8,210	2,046
Statewide Totals	93,603,500	54,912,743	5,900,610	14,641,434	43,239,811	212,298,098	96,164	\$2,208

2020-21

District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1	\$9,731,266	\$6,766,926	-	\$870,172	\$6,010,816	23,379,181	7,825	\$2,988
District 2	11,060,628	10,755,557	46,652	207,253	7,220,320	29,290,410	7,683	21,501
District 3	9,648,415	\$5,645,406	30,693	484,532	6,149,103	21,958,149	8,952	12,383
District 4	10,438,589	\$6,921,229	2,028,933	563,618	9,888,815	29,841,184	8,113	13,698
District 5	10,040,027	\$6,833,949	2,312,375	1,065,289	6,349,886	26,601,527	7,038	14,452
District 6	5,477,197	\$2,682,528	11,169,646	5,328,191	6,065,253	30,722,815	7,413	22,248
District 8	9,632,467	\$6,501,854	1,163,291	1,141,967	5,981,647	24,421,227	11,521	10,635
District 9	10,782,407	\$7,832,128	3,140	343,723	7,940,022	26,901,420	8,123	11,817
District 10	9,385,997	4,962,637	2,741	146,962	7,491,441	21,989,777	6,887	9,121
District 11	5,592,931	3,780,668	852,553	3,447,861	5,495,039	19,169,052	4,144	8,659
District 12	9,354,553	6,189,504	498,104	1,117,986	7,254,362	24,414,509	7,325	7,990
Statewide Total	\$110,875,743	\$75,639,312	\$18,108,128	\$15,587,726	\$81,857,521	\$302,068,430	92,849	\$138,570

2021-22

District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1	\$12,436,970	\$7,313,722	\$700	\$1,070,557	\$5,257,250	\$25,030,412	7,932	\$3,155
District 2	10,569,753	10,043,278	68,957	207,149	5,181,099	25,863,362	7,803	3,315
District 3	10,386,695	4,737,448	17,339	500,472	5,042,669	20,184,825	8,957	2,254

Exhibit 40 Continued

District	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 4	12,486,363	6,422,726	2,107,981	607,956	7,931,142	28,959,109	8,195	3,534
District 5	9,949,333	6,469,360	1,352,415	1,562,614	5,013,657	22,790,529	7,004	3,254
District 6	5,290,861	2,143,156	7,524,751	5,159,795	4,296,315	19,257,350	7,549	2,551
District 8	10,228,973	6,974,498	596,215	1,334,942	3,779,790	21,581,170	11,458	1,884
District 9	11,660,946	6,729,850	2,381	373,668	6,302,344	24,697,773	8,156	3,028
District 10	10,351,907	4,401,192	2,423	131,784	6,155,873	20,911,825	6,954	3,007
District 11	6,016,442	3,351,836	809,467	3,622,153	4,087,324	14,270,334	4,148	10,161
District 12	9,356,615	4,841,046	382,156	985,069	6,307,436	20,892,319	7,331	2,850
Statewide Total	\$108,734,858	\$63,428,112	\$12,864,784	\$15,556,160	\$59,354,899	\$244,439,007	\$85,485	\$2,859

Source: Developed by LBFC Staff with data provided by PennDOT.

SECTION VII ROAD MAINTENANCE AND PRESERVATION PROGRAM (ROADMAP)



Fast Facts...

- ❖ *Act 2016-85 created RoadMaP to invest more than \$2 billion in roadway maintenance and highway and bridge capital projects from FY 2017-18 through FY 2027-28.*
- ❖ *714 miles were completed through RoadMaP for a total of \$47.7 million.*
- ❖ *A total of 605 miles received low-cost treatments from FY 2018-19 through FY 2021-22 for a savings of \$38.7 million.*

Senate Resolution 2021-53 directed the Legislative Budget and Finance Committee to review PennDOT's Road Maintenance and Preservation Program (RoadMaP). PennDOT created RoadMaP to address additional maintenance needs. Below, we discuss RoadMaP and its achievements. Although RoadMaP was intended to extend through FY 2027-28, on December 29, 2021, PennDOT halted the RoadMaP program due to the need to fund core maintenance activities.

A. RoadMaP Program

Act 2013-89 increased funding to the Motor License Fund (MLF) through higher liquid fuels taxes. However, more of the funding supported Pennsylvania State Police (PSP) operations rather than highway and bridge funding as was initially intended. As a result, Act 2016-85 was enacted in June 2016 to reduce the PSP's appropriation from the MLF by four percent each year through FY 2027-28, capping the PSP's appropriation from the MLF at \$500 million per year. This four percent was allocated to PennDOT for highway maintenance.

In 2017, because of Act 2016-85, PennDOT created RoadMaP to invest more than \$2 billion in highway maintenance and highway and bridge capital projects from FY 2018-19 through FY 2027-28. PennDOT intended RoadMaP to improve more miles of roads through cost savings.

The original intent of RoadMaP was to allocate \$500 million to an interstate preservation and reconstruction program, while another \$600 million was to be directed to reconstruction and rehabilitation needs identified through PennDOT engineering districts. Of the highway investments, \$1 billion over the next ten years was to have been allocated to the CMOs' maintenance budgets for core maintenance activities.

PennDOT's philosophy for secondary roads was to focus specific funding on road improvements by using appropriate low-cost treatments to impact as much of the secondary roads as possible while allowing for standard project delivery processes for higher volume roadways.

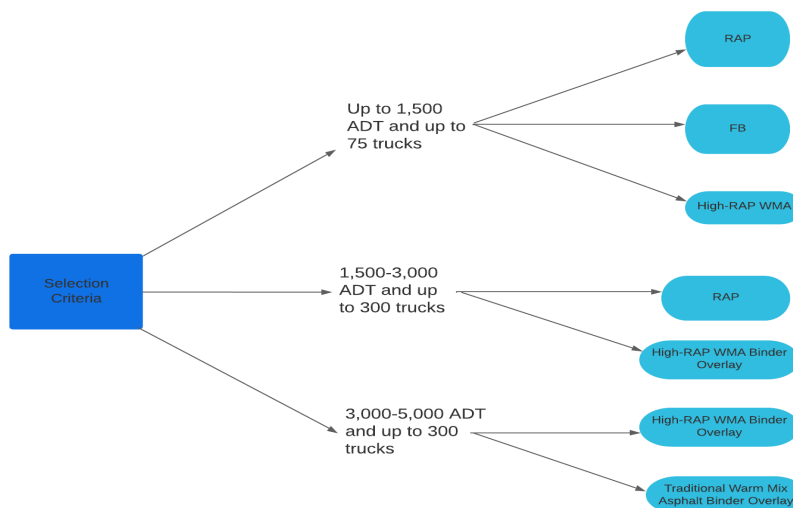
Low-cost treatments are those that make use of virgin or recycled materials or processes and cost less than traditional treatments. PennDOT uses the following low-cost treatments:

- *Recycled Asphalt Pavement (RAP)*: An environmentally conscious method that uses repurposed materials from projects and saves the need to purchase new virgin material,
- *Full Depth Reclamation (FDR)*: Existing top and base structure is reclaimed and reused, and a top surface is applied to protect the new base structures,
- *Cold in place*: Wearing surface is milled off, and new liquid asphalt is added and recycled as the new roadway.
- *High RAP WMA binder overlay*: Same as traditional paving with a similar blacktop material, except this blacktop is produced using a higher percentage of RAP material, resulting in fewer virgin materials,
- *Flexible Base Paving (FB)*: Virgin aggregate(s) and asphalt are mixed in a pug mill and then placed on the roadway in the same format as traditional paving. This material costs less, and no heat is involved in production. FB is intended for certain roads because the material remains flexible and will move with freeze/thaw under certain traffic conditions.
- *Traditional warm mix asphalt binder overlay*: Traditional paving.

These low-cost treatments on secondary roads added a minimum of two inches of additional material to the structure of the roads, and the work was completed by PennDOT personnel or by contract. To ensure that core maintenance remained the priority, PennDOT established the following selection criteria, as illustrated in Exhibit 41, to identify low-volume roads where low-cost treatments could be applied:

Exhibit 41

Selection Criteria for Low-Cost Roads and Treatments



Source: Developed by LBFC staff from information obtained from PennDOT.

B. RoadMaP Funding & Projects

Due to RoadMaP's implementation, as of December 2022, 4,000 projects were completed, roughly 450 were underway, and nearly 1,700 were on PennDOT's four- and twelve-year plans.

Funds used to finance RoadMaP projects were from one of the following four appropriations, none of which were strictly dedicated to RoadMaP:

- Appropriation 409 (A-409) – Highway and Bridge Maintenance Allocation.
- Appropriation 582 (A-582) Program 721 – Highway Maintenance.
- Appropriation 138 (A-138) Program 704 – Rural Commercial Route Funding.
- Appropriation 582 (A-582) Program 711 – Maintenance Allocation.

Exhibit 42 shows those projects that were completed using low-cost treatments. During the review period, from FY 2018-19 through FY 2021-22, 605 miles were treated for \$59.6 million, a \$38.7 million savings over traditional methods. Engineering District 9 accounts for 47 percent of the roads receiving low-cost treatments. Engineering District 12 had the least number of miles that received low-cost treatments. Appendix J shows the number of miles per county that received low-cost treatments.

Exhibit 42

**RoadMaP Miles Treated, Costs, and Savings by Engineering District
 (FY 2018-19 to FY 2020-21)**

FY 2018-19							FY 2019-20					
District	Miles	Actual Cost	Traditional Cost	Savings	Miles	Actual Cost	Traditional Cost	Savings	Miles	Actual Cost	Traditional Cost	Savings
District 1	41	\$3,497,200	\$6,223,500	\$2,726,300	-	-	\$-	\$-	-	1,247,600	1,923,000	675,400
District 2	57	5,294,400	8,478,300	3,183,900	13	3,896,600	5,991,000	2,094,400	40	3,896,600	5,991,000	2,094,400
District 3	27	2,661,000	4,117,500	1,456,500	40	3,227,400	3,608,600	381,200	38	3,227,400	3,608,600	381,200
District 4	25	2,069,600	3,816,000	1,746,400	14	1,373,700	2,109,000	735,300	14	1,373,700	2,109,000	735,300
District 5	17	1,635,000	2,619,000	984,000	15	1,619,400	3,454,045	1,834,645	15	1,619,400	3,454,045	1,834,645
District 6	14	1,352,000	2,028,000	676,000	22	2,149,700	4,156,500	2,006,800	22	2,149,700	4,156,500	2,006,800
District 8	21	2,075,000	3,193,500	1,118,500	68	7,985,500	16,021,000	8,035,500	68	7,985,500	16,021,000	8,035,500
District 9	66	7,101,000	10,546,000	3,445,000	18	1,770,000	2,655,000	885,000	18	1,770,000	2,655,000	885,000
District 10	8	790,000	1,185,000	395,000	15	1,470,000	2,205,000	735,000	15	1,470,000	2,205,000	735,000
District 11	8	760,000	1,140,000	380,000	13	1,271,000	1,906,500	635,500	13	1,271,000	1,906,500	635,500
District 12	6	455,200	853,500	398,300	254	\$26,010,900	\$44,029,645	\$18,018,745	254	\$26,010,900	\$44,029,645	\$18,018,745
TOTAL	290	\$27,690,400	\$44,200,300	\$16,509,900	254	\$26,010,900	\$44,029,645	\$18,018,745	254	\$26,010,900	\$44,029,645	\$18,018,745

FY 2020-21							FY 2021-22					
District	Miles	Actual Cost	Traditional Cost	Savings	Miles	Actual Cost	Traditional Cost	Savings	Miles	Actual Cost	Traditional Cost	Savings
District 1	-	\$-	\$-	\$-	2	\$171,200	\$321,000	\$149,800	2	\$171,200	\$321,000	\$149,800
District 2	-	-	-	-	36	3,758,220	5,893,210	2,134,990	36	3,758,220	5,893,210	2,134,990
District 3	-	-	-	-	16	1,244,000	2,332,500	1,088,500	16	1,244,000	2,332,500	1,088,500
District 4	5	551,100	1,252,500	701,400	-	-	-	-	-	-	-	-
District 5	-	-	-	-	-	-	-	-	-	-	-	-
District 6	-	-	-	-	-	-	-	-	-	-	-	-
District 8	-	-	-	-	-	-	-	-	-	-	-	-
District 9	-	-	-	-	2	160,800	301,500	140,700	2	160,800	301,500	140,700
District 10	-	-	-	-	-	-	-	-	-	-	-	-
District 11	-	-	-	-	-	-	-	-	-	-	-	-
District 12	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	5	\$551,100	\$1,252,500	\$701,400	56	\$5,334,220	\$8,848,210	\$3,513,990	56	\$5,334,220	\$8,848,210	\$3,513,990

Source: Developed by LBFC staff from data provided by PennDOT.

SECTION VIII QUESTIONNAIRE RESPONSES



We distributed a questionnaire with assistance from the PennDOT Central Office to the district executives for each of its 11 Engineering Districts. See Appendix K for the entire questionnaire instrument. The questionnaire consisted of 12 questions and was designed to solicit feedback from the Engineering District perspective versus the Central Office. We received responses from all 11 PennDOT Engineering Districts.

A. Effectiveness and Fairness of the Pennsylvania State Highway Maintenance Funding Formula.

Question 1. Does the Pennsylvania State Highway Maintenance Funding Formula (Act 1997-3) effectively and fairly distribute maintenance funding to the county maintenance offices (CMOs) contained within your respective PennDOT Engineering District?

Many PennDOT Engineering District representatives, like the Central Office, indicated that the Pennsylvania state highway maintenance funding formula is fair, albeit more funding is needed. Meanwhile, some Engineering Districts representatives reflected on areas they might consider making the funding formula fairer. Of course, any shift in funding would mean some CMOs could see an increase in funding versus other CMOs that would see a decrease in funding.

Related respondent comments:

- *The formula does distribute funding fairly and effectively to the extent that it can. The problem is that there is not enough funding to allocate to the County Organizations [CMOs].*
 - Note: This respondent further noted that by 2026 all the CMOs within the Engineering District will reach the point when they can no longer fund core maintenance and basic business functions with A-582 Highway Maintenance Appropriation funds alone.
- *Although the current system is partially asset-based, there are other components that make it ineffective when distributing the funds because it can easily be manipulated to reward Districts that are less efficient. For example, the 5-year average component and the condition-based (STAMPP) data can adversely affect Districts that are working to improve their operations and efficiencies. As*

operations and conditions within a District improve, the adjustment to these factors would result in a decrease in funding for that District. Ultimately, the current system does not provide incentives or rewards to improve operations or increase effectiveness.

- The current funding formula represents a fair distribution of maintenance funding.
- Looking at this from an overall budget need context and not focusing on STAMPP dollar needs, these changes were not distributed fairly.
- No, the current formula is not fair and equitable, specifically as it pertains to those [Engineering] districts that have both urbanized and rural counties. Traffic volumes play a significant role/impact on our roadways, especially truck traffic. The formula needs to be reworked to take this into account, plus the formula should be relooked at every five years to allow for adjustments so that it is fair and equitable to both rural and urbanized counties.
 - Note: This respondent further noted that the funding formula should consider traffic volumes and congestion (especially truck volumes).
- No. From its passage in 1997 until approximately 2014, Act 1997-3 allocated base funds according to the program. As a result, all expenditures in Program 711 [(General Maintenance)] for highway maintenance were excluded. In 2014 a change was made to include certain activities in Program 711 [(General Maintenance)] in the base allocation. Unfortunately, these changes resulted in a negative impact on the budget for . . . [some] CMOs due to the activities we historically perform compared to our more rural CMOs. The majority of our road network is considered "high level," and the primary maintenance for those roadways is resurfacing, which was not an activity included in the base. Compare this to "low-level" roadways where the primary treatment is sealcoat or tar and chip, which was included in the base. Because this change meant more of the allocation was comprised of base it meant less needs-based (ASHMA) funding. Over time this change shifted funding . . . to districts with more rural CMOs
- No.
- No, it is not effectively funding county maintenance. In some counties, we can't even cover our must-fund items of personnel, utilities, winter, equipment fuel, and equipment repair before we are out of the maintenance allocation funding. This forces us to reduce or eliminate roadway repairs and maintenance. It also does not seem that the funding formula fairly distributes the funding either. When looking at projections and the formula, it seems that the weighting on Vehicle Miles Traveled is too high. The roadways that have the highest Vehicle Miles Traveled and Highest Truck Miles Traveled are roadways that are primarily maintained/repared with other funding sources vs. maintenance allocation funding, but they boost a county's [CMO's] maintenance

allocation funding because of the traffic-weighted factors in the ASHMA formula.

- Yes, when the formula is sufficiently funded, it does distribute fairly
- With rising inflating costs, increased funding is needed to adequately support maintenance operations distributed via formula. We believe the funding through the ASHMA formula per Act 1997-3 is fairly distributed to the county maintenance offices.
- Generally, the formula distributes the funds that are allocated to it adequately, however, the base allocation . . . has absorbed a large percentage of the maintenance funding that the formula is not funded to a level that will produce answers to the needs.

B. Recommended Changes/Modifications to the Maintenance Funding Formula.

Question 2. What changes/modifications (if any) would you recommend to the existing Pennsylvania State Highway Maintenance Funding Formula?

Questionnaire respondents disagreed on specific recommended changes to the Pennsylvania state highway maintenance funding formula. However, the individual responses on behalf of each PennDOT Engineering District reflect suggestions unique to a given Engineering District's circumstances. At least one Engineering District indicated that no changes to the maintenance funding formula were needed as the current formula equitably distributed funding. Districts also noted that any changes to the maintenance funding formula would likely positively and negatively impact various Engineering Districts and their respective CMOs. It would appear that PennDOT's Center Office and its Engineering Districts would generally welcome additional funding for highway maintenance activities.

Related respondent comments:

- A respondent suggested that including Vehicle Miles Traveled (VMT) indirectly impacts bridge and highway condition indexes, resulting in more of an impact on the maintenance funding formula than it should.
- One Engineering District expressed that any changes to the existing formula may have positive and negative effects on various Engineering Districts and their respective CMOs. However, the Engineering District suggested the maintenance funding formula should prioritize asset-based funding distribution more than highway conditions.

- Another respondent suggested that efforts to increase efficiency should not negatively impact an Engineering District's maintenance funding.
- One of the Engineering Districts indicated it was part of a review team that looked at potential variations of the Pennsylvania state highway maintenance funding formula and ultimately determined that changes to the formula would negatively impact the funding received by many CMOs across the Commonwealth. As a result, the review team ceased its discussions in early 2022.
- One of the Engineering Districts suggested adding expenditures for statewide programs (e.g., Highway Occupancy Permit (HOP) review, HOP inspection, traffic signal support, highway lighting management, bridge inspection) into the base allocation portion of the maintenance funding formula as it was one of Engineering Districts that experiences higher amounts of these types of expenditures.
- One Engineering District suggested that rest areas be fully funded as part of maintenance funding.
- A respondent suggested personnel funding under the base allocation portion of the funding formula be funded at 100 percent of personnel projections for the upcoming fiscal year versus basing this component of maintenance funding on a five-year average.
- One of the Engineering Districts indicated that it would not change the maintenance funding formula after a comprehensive examination as it was well thought through when developed and equitably distributed funding.
- A respondent suggested that geotechnical/rockslide issues be included in the base allocation portion of the funding formula in that they represent a significant amount (\$2 million on average per fiscal year).

C. Obstacles to Effective State Highway Maintenance.

Question 3. What is the biggest obstacle (other than funding) to providing adequate and effective state highway maintenance?

The common themes expressed by districts regarding the biggest obstacles to effective state highway maintenance were personnel, equipment, and funding needs. However, the comments we received from the Engineering Districts reflect the nuances of how a similar message can be expressed differently.

Related respondent comments:

- Significant problems are personnel shortages and aging equipment, which tie back to funding and the need for additional monies.
- Significant obstacles are recruiting and retaining a skilled workforce and the ability to invest in new equipment (vs. continuing to use ineffective and inefficient equipment).
- The labor shortage has impacted the ability to fill vacancies and complete required planned cyclical maintenance. The labor shortage and parts availability have affected equipment repairs (e.g., milling machines, dump trucks, and pavers). The same Engineering District also raised concerns regarding over 34 embankment failures in recent years due to flooding, four of which resulted in roadway closures.
- Staffing and equipment age were mentioned as among the most significant obstacles.
- Filling vacancies (e.g., operators and mechanics), being able to offer competitive starting salaries, and the impacts of inflation on the purchasing power of existing funding.
- A significant obstacle is filling seasonal and permanent positions (e.g., this Engineering District currently has a 34 percent operator vacancy within its CMOs).
- A significant obstacle is competition for quality employees with technical knowledge at the CMO level, which is more difficult in urban areas than in rural areas.
- Personnel resources/staffing shortages coupled with funding needs limit the ability to complete maintenance work and will take several years to catch up at current staffing and funding levels.
- Personnel and attracting quality candidates are the biggest obstacles.
- Employee hiring and retention-related issues make it difficult to perform all maintenance activities, which often leads to the need to contract maintenance services at a higher cost. Higher salaries are needed to attract and retain. Ultimately, current funding levels negatively impact hiring/retention and the ability to purchase and repair equipment.
- The current market for CDL operators and mechanics has outgrown PennDOT's pay scale and funding for equipment and has not kept pace with equipment costs.

D. Additional State Highway Maintenance Funding.

Question 4. Is additional state highway maintenance funding needed?

PennDOT Engineer District responses mirror the central office position that more state highway maintenance funding is needed. Engineering District responses to this specific question about the need for additional funding correlate with Engineering District responses to the three previous questions concerning the effectiveness and fairness of the maintenance funding formula, recommended changes/modifications to the formula, and obstacles to effective highway maintenance.

Related respondent comments:

- Additional highway maintenance funding is necessary and is critical to serving the needs of the traveling public and taxpayers of the Commonwealth. A substantial increase in funding would be needed to get the maintenance community back to levels similar to the late 1990s.
- Inflationary costs must be accounted for, but an in-depth evaluation would be required to determine if additional funding is necessary.
- Additional highway maintenance funding is needed because the Commonwealth continues to extend highway surfaces beyond their useful life cycles, requiring more maintenance and costlier repairs to maintain acceptable conditions to maintain safe, passable highways.

E. Utilization of Additional Funding.

Question 5. How would your Engineering District utilize additional funding?

Generally, Engineering Districts indicated they would use the additional funding to address core cyclical maintenance activities. Engineering districts gave examples such as improved resurfacing cycles for all levels of highways, expanding the bridge maintenance program, hiring additional staff, and purchasing new equipment.

Related respondent comments:

- Additional funding would be used to modernize equipment and initiate a strategic replacement cycle to reduce maintenance and repair costs. There would be a focus on improvement activities on rural, low-volume highways and bridges to provide safer and smoother highways.
- Additional funding would be prioritized to ensure surface improvement and cyclic needs are accounted for first, to address secondary highway system needs, and to modernize equipment.

- Additional funding would be used to purchase core maintenance equipment and to eliminate dirt highways.
- Additional funding would address core cyclical (e.g., surface treatments, crack sealing, base repair, etc.) maintenance activities for low-level four-digit route networks and surface improvements for high-level traffic volume networks.
- Additional funds would be prioritized to address all core maintenance cycle goals, improve resurfacing cycles for all highway levels, and increase the bridge maintenance program.
- Additional funds would fund core maintenance activities fully and hire more field staff to work on the backlog of maintenance needs.
- Additional funds would be used in one Engineering District to perform needed tunnel facility upgrades and repairs and ensure the required 24/7 tunnel maintenance staff has the needed crash and tow trucks to ensure job safety and keep travelers safe.

F. Base Allocation vs. ASHMA Portions of Maintenance Funding Formula.

Question 6. Should additional funding be driven through the "Base Allocation" and/or "ASHMA" portions of the Pennsylvania State Highway Maintenance Funding Formula?

Additionally, concerning Question 6, we also asked:

What additional funding sources would you recommend be considered to address state highway maintenance funding needs?

Responses alternated between driving additional funding through the Base Allocation, ASHMA portion, existing Base Allocation, and ASHMA portions of the maintenance funding formula or an alternative general maintenance funding formula. Note any potential increases in funding or additional funding sources would need to be thoroughly evaluated and vetted to determine the value and impact of such.

Related respondent comments:

- A balance is needed between the two parts of the maintenance funding formula. Current funding levels result in insufficient funding after making the base allocation to apply the ASHMA portion of the formula fully.

- ASHMA portion of the maintenance funding formula should be targeted with a more significant percentage of funding based on truck traffic volume.
- Desire a general formula (vs. Base Allocation and ASMA portions) to reduce funding variances.
- Additional funding should be driven through both the Base Allocation and ASHMA portions. Concerning the Base Allocation, personnel should be 100 percent (vs. using a lagging five-year average).

Exhibit 43 shows some alternative maintenance funding suggestions.

Exhibit 43

Additional Sources of Funding Suggestions

One of the respondents indicated that state highway maintenance is not sustainable without additional funding, which would be welcomed regardless of the source. The following reflects other maintenance funding suggestions proffered by the various PennDOT Engineering Districts:

- General Fund (vs. just liquid fuels taxes) in that all individuals and industry sectors within the Commonwealth benefit from a safe and effective transportation network.
- Apply Interstate funds to maintenance activities on Pennsylvania's Interstate network.
- User fees (e.g., mileage-based, shipping/package delivery, additional registration, and license-based access user fee).
- Address insufficient or lack of tax on electric vehicle/hybrid vehicles and usage compared to liquid fuel-powered vehicles.
- Tolling of certain highways & bridges.
- Increased registration and license fees.
- Convenience fees (e.g., High Occupancy Vehicle (HOV) lanes).
- Private/public partnership of rest areas.
- Additional capital equipment budget funds.

Source: Developed by LBFC staff with information provided by PennDOT.

G. Largest Maintenance Activity Expenditures.

Question 7. What was the largest maintenance activity expenditure (e.g., winter operations, manual patching, paving, etc.) within your Engineering District and CMOs therein during the base FY 1997-98 and the other scope FYs 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22?

Engineering districts consistently report winter operations (snow and ice removal) as the most significant maintenance activity expenditure for the Engineering Districts and their respective CMOs. However, the amount for a given fiscal year can vary significantly due to the severity of the winter weather.

Related respondent comments:

- Engineering District 1 – Winter operations were the largest maintenance activity expenditure for all scope fiscal years.
- Engineering District 2 – Winter operations, paving, and equipment charges were the three highest costs for the scope years, although seal coating will soon replace paving.
- Engineering District 3 – Winter operations were the highest maintenance activity cost for all scope fiscal years except FY 2011-12 and FY 2015-16. In FYs 2011-12 and 2015-16, resurfacing was the most significant maintenance activity due to less severe winters, which allowed winter operations savings to be shifted to resurfacing activities.
- Engineering District 4 – Winter operations were the most significant maintenance activity expenditure for all scope fiscal years (ranging from a low of \$11.73 million (FY 15-16) to a high of \$25.98 million (FY 17-18)).
- Engineering District 5 – Winter operations were the most significant maintenance activity expenditure for all scope fiscal years (ranging from a low of \$17.18 million (FY 15-16) to a high of \$28.26 million (FY 17-18)).
- Engineering District 6 – The largest maintenance activity expenditure varied between winter operations (ranged from a low of \$12.74 million (FY 19-20) to a high of \$36 million (FY 17-18)) and surfacing treatment (\$28.8 million (FY 15-16) and \$31.45 million (FY 16-17)).
- Engineering District 8 – Winter operations were the most significant maintenance activity expenditure for all scope fiscal years (ranging from a low of \$17 million (FY 17-18) to a high of \$30.5 million (FY 18-19)).
- Engineering District 9 – Winter operations were the most significant maintenance activity expenditure for all scope fiscal years, with winter seal coating and base repairs being the next highest expenditures.
- Engineering District 10 – Winter operations were the largest maintenance activity expenditure for all scope fiscal years.
- Engineering District 11 – Winter operations were the largest maintenance activity expenditure for all scope fiscal years.
- Engineering District 12 – Winter operations were the largest maintenance activity expenditure for all scope fiscal years and ranged from a low of \$14.91 million (FY 19-20) to a high of \$24.72 million (FY 20-21)).

While the individual Engineering District comments provide a general insight into their largest maintenance activity expenditures, the nature of the responses indicated that the Engineering Districts did not base their answers utilizing a uniform data calculation process. Therefore, we requested that the PennDOT Central Office provide additional information representing a more consistent comparison regarding the individual Engineering Districts' most significant maintenance activity expenditures. Exhibit 44 compares the most considerable maintenance activity expenditures for each of the individual Engineering Districts based on data supplied by the PennDOT Central Office. The data provided reflected each Engineering District's ten most significant maintenance activity expenditures. Snow, paving,³⁷ and administration functions are the three largest categories of maintenance activity expenditures.

Exhibit 44

**Engineering District Largest Maintenance Activity Expenditures
 (FY 2015-16 to 2021-22)**

Engineering District	Type of Expenditures	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 1	Snow ^a	\$10,332,368	\$14,943,824	\$15,462,220	\$11,908,986	\$12,615,384	\$12,978,558	\$12,145,061
	Paving ^b	7,575,848	6,186,700	4,680,907	7,740,882	7,798,649	5,108,991	9,604,514
	Administration ^c	1,759,631	2,941,502	4,522,965	3,788,115	3,165,379	3,997,067	4,907,790
	Other ^d	5,032,577	4,445,224	5,466,385	4,161,480	3,623,353	3,374,521	7,802,511
	Total^e	\$24,700,424	\$28,517,250	\$30,132,478	\$27,599,462	\$27,202,763	\$25,459,137	\$34,459,877
District 2	Snow	10,397,169	15,436,536	15,646,154	16,935,339	13,101,773	17,729,117	14,990,747
	Paving	6,831,637	7,820,233	6,638,037	7,760,410	7,133,964	5,363,761	9,278,959
	Administration	1,443,763	3,310,257	3,715,935	3,646,991	2,808,502	3,274,580	4,449,794
	Other	7,600,451	3,848,397	9,050,753	4,181,235	4,288,808	10,971,213	5,338,612
Total	\$26,273,020	\$30,415,422	\$35,050,879	\$32,523,975	\$27,333,047	\$37,338,670	\$34,058,111	
District 3	Paving	27,099,306	23,233,913	23,518,241	23,207,304	16,129,141	11,770,346	21,997,628

³⁷ All paving operations referred to here were conducted by CMOs and are considered maintenance activities whether conducted by internal resources or by contract; the bulk of paving operations are funded by the capital fund.

Exhibit 44 Continued

Engineering District	Type of Expenditures	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 4	Snow	4,779,096	8,762,973	9,849,105	11,059,073	8,373,781	11,680,481	9,673,086
	Administration	726,566	3,084,778	3,776,932	3,992,146	3,030,189	3,372,808	4,744,845
	Other	5,945,035	5,431,272	6,675,862	5,512,621	4,200,787	4,650,333	8,470,099
	Total	\$38,550,004	\$40,512,936	\$43,820,140	\$43,771,144	\$31,733,898	\$31,473,968	\$44,885,657
District 5	Snow	9,268,390	17,740,254	19,394,741	17,533,027	14,074,686	18,589,345	16,185,544
	Paving	12,382,427	19,586,099	17,075,981	14,819,539	10,237,783	5,389,259	15,793,457
	Administration	2,028,883	3,586,503	4,064,465	4,288,983	3,531,501	4,111,843	5,607,852
	Other	3,755,356	4,766,435	5,235,121	4,229,782	4,384,861	4,295,739	3,449,575
Total	\$27,435,056	\$45,679,290	\$45,770,308	\$40,871,331	\$32,288,831	\$32,386,186	\$41,036,428	
District 6	Snow	8,781,733	10,636,073	15,639,194	14,370,891	9,151,778	15,200,499	12,444,085
	Paving	9,719,183	11,592,924	11,908,958	8,753,749	8,262,111	7,725,077	11,673,509
	Administration	882,835	2,215,943	3,740,631	3,667,476	2,833,655	4,683,568	4,799,001
	Other	5,976,377	5,995,521	8,362,301	6,282,288	5,536,145	3,899,546	5,979,582
Total	\$25,360,128	\$30,440,461	\$39,651,085	\$33,074,405	\$25,783,689	\$31,508,690	\$34,896,178	
District 8	Snow	12,697,516	11,708,127	24,431,741	19,576,802	5,603,771	19,823,661	13,462,895
	Paving	5,593,667	7,307,012	7,066,408	4,691,067	4,052,041	3,218,557	4,761,197
	Administration	1,085,828	2,188,212	2,726,057	2,721,931	1,776,601	2,644,417	3,324,446
	Other	6,995,974	10,020,841	9,925,763	12,438,311	14,909,096	8,133,199	11,413,157
Total	\$26,372,986	\$31,224,192	\$44,149,969	\$39,428,110	\$26,341,507	\$33,819,835	\$32,961,694	
District 9	Paving	14,998,976	17,166,103	21,014,663	14,192,883	8,337,614	9,120,555	13,054,559
	Snow	11,056,486	10,045,254	14,651,551	16,126,422	5,611,413	13,336,461	10,816,571
	Administration	2,538,195	3,877,621	5,164,543	4,842,496	3,564,918	6,419,035	6,817,015
	Other	4,817,822	6,292,768	5,287,182	5,541,112	6,960,539	5,025,721	5,786,494
Total	\$33,411,479	\$37,381,746	\$46,117,939	\$40,702,912	\$24,474,484	\$33,901,773	\$36,474,639	
Snow		10,849,505	12,075,124	13,607,673	16,610,643	10,849,705	15,501,792	12,802,662
	Paving	13,133,143	17,077,763	13,979,331	18,497,313	6,647,131	5,655,055	9,997,605

Exhibit 44 Continued

Engineering District	Type of Expenditures	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Administration	1,434,440	3,323,439	4,406,015	4,702,787	3,532,447	4,580,327	5,224,115
	Other	2,805,777	1,804,566	3,263,602	5,913,434	3,597,040	4,022,305	4,081,770
	Total	\$28,222,864	\$34,280,891	\$35,256,620	\$45,724,176	\$24,626,323	\$29,759,480	\$32,106,152
District 10								
	Snow	8,737,488	9,856,886	11,934,623	11,517,597	9,117,676	12,347,623	10,478,528
	Paving	9,652,242	11,259,546	12,830,961	9,748,729	11,477,868	7,067,340	10,559,245
	Administration	1,935,419	2,978,772	3,809,996	3,549,492	2,971,111	4,533,266	4,717,550
	Other	2,870,039	2,738,807	2,794,759	2,833,571	2,731,082	3,506,262	5,315,178
	Total	\$23,195,188	\$26,834,011	\$31,370,339	\$27,649,389	\$26,297,737	\$27,454,491	\$31,070,501
District 11								
	Snow	7,499,191	6,956,318	9,898,850	8,849,737	5,693,320	10,013,171	7,759,468
	Paving	5,680,173	5,303,015	5,137,892	7,093,549	2,844,991	4,925,244	7,442,421
	Administration	955,710	2,150,451	2,727,900	2,574,306	1,948,044	1,986,483	2,830,794
	Tunnell	694,443	679,135	831,451	1,348,592	1,614,526	1,412,226	1,391,490
	Other	4,106,185	5,276,914	5,765,519	4,884,881	10,095,979	5,369,942	5,475,546
	Total	\$18,935,701	\$20,365,832	\$24,361,612	\$24,751,066	\$22,196,860	\$23,707,065	\$24,899,720
District 12								
	Snow	9,797,502	9,440,455	12,892,539	11,571,934	7,728,733	13,743,889	11,410,899
	Paving	5,913,855	6,175,264	8,506,217	7,496,948	9,152,127	4,685,364	7,756,235
	Administration	2,087,710	2,893,051	3,438,241	3,066,177	2,807,313	3,165,974	3,764,945
	Other	5,641,444	7,021,223	5,670,764	6,958,644	7,130,118	5,708,140	4,443,151
	Total	\$23,440,511	\$25,529,994	\$30,507,761	\$29,093,704	\$26,818,291	\$27,303,367	\$27,375,229

^a The "Snow" dollar amount includes the following snow season-related activities: (Program 712 – Winter Traffic Service); Snow Removal and Ice Control (Plow Snow, Spread Anti-Skid, Chemical or Plow/Spreading Simultaneously-Truck Plowing-Grader Plowing (712-7521-01); Other Snow and Ice Control (712-7522-01); Anti-Icing (712-7523-01); and Salt Brine Manufacture (712-7524-01). Note: Salt Brine Manufacture is only reflected in "Snow" dollar amounts for Engineering District 2 as it was the only Engineering District in which Salt Brine Manufacture was a top ten maintenance expenditure.

^b The "Paving" dollar amount includes the following paving related activities: Roads-Paved: Leveling < 2" Tow/Finish Paver, Base/Subbase Flex Heavy, Base/Subbase Widener, Crack Seal Bituminous Surface, Risk Management/Safety, Spray Patch Manual, Stockpile Aggregate, Surface Treatment Liquid Bituminous, Widening with Base Course, Bituminous Recycle Mechanized, Surface Treatment Liquid Bituminous-Double Application, Leveling > 2" Binder Finish Paver, Bituminous Recycle Mechanized Full Department FDR (Full Depth Reclamation), Skin Patching, FB-Central Mix Plant-Pug Mill; Roads-Paved-Patch: Partial Depth, Edge-Only-Mecha-

nized, Manual, Manual-Mechanized Cutting, Mechanized Finish Paver, Mechanized Tow Paver, Manual-Non Standard; Roads-Paved-RAP (Recycled Asphalt Pavement); Leveling > = 3" Finish Paver, Pug Mill-Production, Cold-in-Place Recycling, Overlay > = 3" Finish Paver; Shoulders-Paved; Surface Treatment Liquid Bituminous, Paving, Driveway Adjustment, Base/Subbase Heavy, Patching-Mechanized, Skin Patch-Mechanized; Pave Wide Recycle Material, Expanded Maintenance Projects-Paved Roads: Surface Treatment Liquid Bituminous (A-409), General Maintenance-Paved Roads: Scratch Coat and Surface Treatment 1 1/2" Plant Mix, Surface Treatment: 1", Plant Mix > = 1.5" Finish Paver, Plant Mix 1" Finish Paver.

^c The "Administration" dollar amount includes the following administrative activities: Administration; In-Service Safety; AE: Administration, New Vehicle Preparation, Non-Reimbursable Accident Repairs Diagnostic Test, Seasonal Inspection Diagnostic Test, Labor Equipment & Material for Fuel Dispensing, Transportation Diagnostic Test, Blades and Buckets Diagnostic Test, Painting Diagnostic Test, Tires/Tubes Diagnostic Test, Reimburse Repair Damage to Department Equipment, Cleaning Diagnostic Test; COVID-19 Administration; Maintenance Administration: In-Service Training, Special Payments-Administration, COVID-19/Coronavirus Activity, Design Project Management, Occupancy Permits/Licenses-Highway Occupancy Permits, Special Payments-Graphic Service Center Costs (GSC Personnel Only); Maintenance/Operation of Equipment/Machinery: Field Operations Administration, Special Payments-Administration; Special Projects-Non Reimbursable: Special Payments-Administration (A-581), Special Payments-Administration; Maintenance/Operation of Building & Grounds: Special Payments-Administration; Special Projects-Reimbursable: Special Payments-Administration (A-581); Traffic Services: Special Payments-Administration.

^d The "Other" dollar amount includes the remaining ten most significant maintenance activity expenditures by each Engineering District: Drain Cleaning, Expanded Maintenance Projects, Maintenance & Operation of Buildings & Grounds, Shoulders, Special Projects, Signs, Traffic, Support Services, Replacing Pipes, Restoration, Roadside Services, Vegetation Management, Incidental Services, FHWA-Disaster: Emergency Disaster Restoration, etc.

^e The "Total" dollar amount reflects only each Engineering District's ten most significant maintenance activity expenditures.

^f The "Tunnel" dollar amount includes all tunnel-related activities, exclusive to Engineering District 11: Activities: Other; Maintenance/Repair: Electrical/Mechanical, Light Systems Service, Traffic Service, Wash/Clean.

Source: Developed by LBFC staff from data provided by PennDOT.

H. Unique Challenges.

Question 8. {Challenges} What unique challenges does your Engineering District face (e.g., developing and implementing the Winter Maintenance Program, hiring temporary equipment operators, contracting for rental equipment and operators)?

Common themes of hiring difficulties, problems soliciting bids/awarding contracts, and increased costs are reflected in the responses regarding the unique challenges faced by PennDOT's Engineering Districts. Some of the Engineering Districts also highlighted the issue of contracting for rental trucks with operators, particularly for winter activities, and others expressed difficulty obtaining aggregate and concrete deliveries.

Related respondent comments:

- Engineering District 1 indicated this was the first year it had experienced hiring challenges or pursued rental options to supplement its workforce. The Engineering District further suggested it is hard to know if the hiring problem would continue or if it is part of a post-pandemic condition affecting the economy. The Engineering District also expressed serious concern about the state of its snow removal fleet, given that it gets the most snow and has the longest winter season.
- Engineering District 2 indicated it struggles with recruiting winter staff, given that it encompasses a rural area with a limited population and vendor pool for materials and services. Hiring struggles are not made easier, given that the Engineering District competes with local industry for the same limited workforce.
- Engineering District 3 indicated that it experienced problems filling operator vacancies in the past two years and hiring temporary winter operators. The Engineering District currently has 64 vacancies for 499 operator positions. The Engineering District has also experienced difficulty receiving bids and contracting with operators for non-routed rental trucks (e.g., dump trucks).
- Engineering District 4 indicated that hiring temporary equipment operators is challenging. The Engineering District also noted that its smaller CMOs have a limited number of operators responsible for the same number of maintenance programs as its larger CMOs, resulting in staff from the smaller CMOs having more diversified job duties and tasks. Its CMOs are constantly challenged by the limited availability of vendors and contractors to bid on contracts, rentals, aggregate and concrete deliveries.
- Engineering District 5 indicated the following challenges:
 - Performing maintenance activities on Interstates in its urban counties due to significant volumes of traffic (specifically trucks), limited hours of maintenance operations,

- and the need for more traffic control measures, increases the cost of doing business and reduces productivity.
- Winter maintenance the past few years due to price increases (e.g., road salt, fuel, truck repair, and parts), the ability to obtain truck rentals with operators, and the increased cost associated with such rentals (average of \$376 per hour).
 - Hiring permanent mechanics, CDL operators, and seasonal winter workers as it is difficult to compete based on salary with the industry in the area (e.g., warehouse distribution centers). The hiring process itself is time-consuming and can take months (e.g., during its last Winter Job Fair, 33 conditional offers were made on the spot, but by the time the hiring process was finalized approximately two months later, only ten hires were made because the other applicants had taken other jobs).
 - Engineering District 6 has continual issues with hiring full-time and seasonal staff due to the competitive job market and cost of living. More recently, the Engineering District has experienced challenges regarding the limited availability of vendors and contractors to bid on contracts, rentals, aggregate and concrete deliveries.
 - Engineering District 8 indicated it has challenges hiring full-time and seasonal operators as it competes for a limited qualified workforce. Limited hours of maintenance operations on interstates due to traffic volumes limit the ability to do maintenance.
 - Engineering District 9 has struggled to get the desired number of seasonal winter operators over the past several years, particularly in the CMOS of the three southern counties that border Maryland. In the past year, the Engineering District has also experienced some difficulty filling full-time operator positions in some CMOS.
 - Engineering District 10 indicated it faces challenges hiring full-time and seasonal operators and has equipment rental issues (i.e., sweeper, vacuum trucks, pavers, low clearance remote control loader, belt loader, distributors). The Engineering District mentioned agility agreements and municipal agreements for winter maintenance routes in that rural municipalities lack resources in terms of funding and staff to handle the additional workload required by a municipality to implement such agreements.
 - Engineering District 11 has a particularly unique challenge as the only Engineering District responsible for a highway tunnel network. Over \$8.2 million is needed for the Allegheny CMO to operate and staff the tunnels 24/7. Staffing shortages create hardships and require staff to work 12 to 16-hour days. The tunnel network is unique because tunnel staff maintains directional changes between the morning and afternoon rush hours on High

Occupancy Vehicle (HOV) lanes. Due to maintenance and related staffing demands throughout the Engineering District, bidding out several on-demand contracts at a total cost of between \$8 to \$10 million is necessary. An example is the Bridge On-Demand Contract maintained by the Allegheny CMO, responsible for maintaining the highest bridge count (1,181 bridges) and the second-highest bridge deck area (11,867,540 sq.) in the state. Due to the hilly topography and soil consistency, the Engineering District is also subject to many landslides. Regular flooding of the Monongahela River in Pittsburgh results in a portion of I-376, known as the "Bathtub," needing water to be pumped out and cleaning the residual (each occurrence costs approximately \$100,000). All CMOs within the Engineering District have experienced issues with hiring operators. This staffing issue has been most prominent in Beaver County due to the Shell Cracker Plant and other related developments. Shortages of workers have also impacted the ability to contract rented winter trucks with operators. Three of the four garages maintained by the Engineering District are under 50 percent in diesel mechanic positions.

- Engineering District 12 indicated the Marcellus shale industry challenges its ability to hire mechanics and operators. The Engineering District is also faced with geotechnical issues, including landslides, longwall mining, and impacts from Marcellus gas drilling. The ability to acquire rental trucks for winter operations is also a challenge.

I. Winter Program.

*Question 9. {Winter Program – Municipal Contracts} How many **winter season municipal contracts** were awarded in your Engineering District and the CMOs therein, including the dollar amount, during the base FY 1997-98 and FYs 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021.*

- Please provide a listing of winter resources (i.e., trucks, plows, salt spreaders, front-end loaders, anti-icing trucks, snow blowers, and mechanics).*
- Indicate whether your Engineering District was required to augment its winter program with rental trucks and operators, including the number of rental trucks and operator contracts for each of the scope FYs.*

Exhibit 45 shows an overview of the various Engineering District responses to our winter program question.³⁸

Exhibit 45

Winter Program Engineering District Comments

Engineering District	Winter Season Municipal Agreements	Winter Resources	Winter Program Augmentation (Rental Trucks & Operators)
1	<p>Winter Municipal Agreements (FY 15/16 to 21-22) averaged 32 in a given fiscal year with an average cost of \$916,000).</p> <p>Agility Program Snow Removal Agreements (FYs 15/16 to 21/22) – Averaged 11 (average cost – \$203,000).</p>	<p>Anti-icing Trucks – 14 Graders (used to plow and break the ice) – 5 Loaders – 40 Plow Trucks – 210 Tow Plows – 1</p> <p>Knock-out Trucks^a – 14</p> <p>Mechanics – 32 Operators – 343 Temporary Operators* - 45</p>	<p>Between FY 93/94 to 20/21, the Engineering District did not augment its winter program with rental trucks or contract operators (although previously, there may have been some augmentations).</p> <p>Note: For the current winter season (FY 22/23), due to full-time vacancies and difficulties with hiring temporary employees, the Engineering District is pursuing contracts for rental trucks and operations, but re-bid the contracts, given the initial bids were rejected due to the exorbitant cost.</p>
2	<p>Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 21 and 23 agreements per fiscal year, with costs ranging from \$193,196 to \$224,787.</p>	<p>Anti-icing Trucks – 17 Graders – 6 Loaders – 54 Plow Trucks – 188 Tow Plows – 1</p> <p>Mechanics – 37 Operators – 330 Temporary Operators* – 36</p>	<p>Did not augment winter program with rental trucks or contract operators during FY 15-16 to 21-22.</p>

³⁸ While the information presented in Exhibit __ under the column headings “Winter Season Municipal Agreements” and “Winter Program Augmentation (Rental Trucks and Operators)” is primarily based on the individual Engineering District responses to Question 9 of our questionnaire, the winter resources data was not uniformly presented. Therefore, the data presented under the column heading “Winter Resources” was instead based on data contained in PennDOT’s 2022 Winter Services Program Guide - Pub. 628 (10/22), except for the knock-out truck data which was based on the individual Engineering District responses to Question 9 of our questionnaire.

Exhibit 45 Continued

Engineering District	Winter Season Municipal Agreements	Winter Resources	Winter Program Augmentation (Rental Trucks & Operators)
3	Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 34 and 38 agreements per fiscal year, with costs ranging from \$425,679 to \$531,569.	Anti-icing Trucks – 11 Graders – 15 Loaders – 45 Plow Trucks – 220 Knock-out Trucks ^a – 19 Mechanics – 46 Operators – 484 Temporary Operators* - 19	Solicited bids for non-routed rental trucks for the winter season for FY 09 to 21 in all CMOs within the Engineering District with no bids received (proposals included \$1,000 mobilization and a 40-hour guarantee). In FY 22-23, all the CMOs again solicited bids for non-routed rental trucks. Only the Bradford and Tioga CMO received bids (\$550/hr. single axle and \$675/hr. tandem). Bids were also solicited for on-demand operators for contracts for winter services for Columbia/Montour CMOs (40-hour guarantee and included 440 regular hours – bid at \$375/hr. and 220 overtime hours – bid at \$425/hr.) and Northumberland CMO (40-hour guarantee and included 160 hours of regular hours – bid at \$525/hr. and 80 overtime hours – bid at \$545/hr.).
4	Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 23 and 39 agreements per fiscal year, with costs ranging from \$296,515 to \$624,941.	Anti-icing Trucks – 33 Graders – 14 Loaders – 50 Plow Trucks – 199 Mechanics – 39 Operators – 315 Temporary Operators* - 128	Rental equipment with operators was deployed in all CMOs within the Engineering District along with on-demand winter operator contracts: During FY 15-16 to 21-22, the number of rental trucks ranged from 70 to 82, and the cost ranged from \$507,011 to \$1.98 million.

Exhibit 45 Continued

Engineering District	Winter Season Municipal Agreements	Winter Resources	Winter Program Augmentation (Rental Trucks & Operators)
5	<p>Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 2 and 57 agreements per fiscal year, with costs ranging from \$89,217 to \$4.02 million.</p> <p>Note: Each agreement was for a 5-year term, and the dollar amounts reflected the total cost for those five years.</p>	<p>Anti-icing Trucks – 20 Graders – 9 Loaders – 44 Plow Trucks – 208 Tow Plows – 3</p> <p>Mechanics – 38 Operators – 319 Temporary Operators* – 77</p>	<p>Rental equipment with operators was deployed within the Engineering District: During FY 15-16 to 21-22, the number of rental trucks ranged from 43 to 72, and the cost ranged from \$691,983 to \$1.92 million.</p> <p>The Engineering District also executed two winter on-demand contracts in FY 21-22, although neither was utilized. Two On-demand contracts were executed for the FY 22-23 winter season.</p>
6	<p>Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 95 and 119 agreements per fiscal year, with costs ranging from \$4.25 to \$5.41 million.</p>	<p>Anti-icing Trucks – 50 Graders – 4 Loaders – 39 Plow Trucks – 182</p> <p>Mechanics – 19 Operators – 196 Temporary Operators* – 64</p>	<p>Engineering District indicated it must use rental trucks, temporary operators, and contracted operators to perform winter services successfully. Rental equipment deployed within the Engineering District: 288 rental trucks (FY 15-16 to 21-22). Beginning in FY 20-21, the Engineering District started utilizing contracted operators to supplement winter staffing and bid for ten contracted operators between Bucks, Chester, and Montgomery CMOs, and ten contracted operators between Delaware and Philadelphia CMOs.</p>
8	<p>Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 57 and 105 agreements per fiscal year, with costs ranging from \$640,000 to \$1.31 million.</p>	<p>Anti-icing Trucks – 23 Graders – 12 Loaders – 78 Plow Trucks – 310 Tow Plows – 5</p> <p>Mechanics – 44 Operators – 537 Temporary Operators* - 116</p>	<p>Engineering District supplemented its winter program with 35 rental trucks from FY 15/16 to FY 21-22 and implemented 12 on-demand contract operators for FY 20/21 and 21/22 winter seasons.</p>

Exhibit 45 Continued

Engineering District	Winter Season Municipal Agreements	Winter Resources	Winter Program Augmentation (Rental Trucks & Operators)
9	Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 35 and 40 agreements per fiscal year, with costs ranging from \$328,000 to \$407,000.	Anti-icing Trucks – 19 Graders – 15 Loaders – 55 Plow Trucks – 220 Tow Plows – 3 Mechanics – 41 Operators – 384 Temporary Operators* - 70	Engineering District has not supplemented its winter program with rental trucks or operators. The Engineering District did solicit bids for rental trucks once in the past but received none. Due to high vacancy rates, the Engineering District is exploring a rental operator agreement for the Somerset CMO.
10	Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 21 and 28 agreements per fiscal year, with costs ranging from \$124,850 to \$162,747.	Anti-icing Trucks – 14 Graders – 10 Loaders – 41 Plow Trucks – 163 Mechanics – 37 Operators – 344 Temporary Operators* - 52	Did not augment winter program with rental trucks or contract operators during FY 15-16 to 21-22. However, due to a lack of staffing, the Engineering District has attempted to secure bids for rental trucks and operators, but there has been no interest in their rural district.
11	Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 113 and 116 agreements per fiscal year, with costs ranging from \$2.45 to \$3.57 million.	Anti-icing Trucks – 14 Graders – 5 Loaders – 35 Plow Trucks – 124 Knock-out Trucks ^a – 14 Mechanics – 17 Operators – 208 Temporary Operators* - 52	Engineering District indicated it must augment its winter program with rental trucks: During FY 15-16 to 21-22, the number of rental trucks ranged from 21 to 33. The Engineering District also implemented winter operator contracts: <ul style="list-style-type: none"> • FY 20/21 - \$18,336 (one snow event - \$181/hr.) • FY 21/22 – \$61,911 (two snow events - \$190/hr.)

Exhibit 45 Continued

Engineering District	Winter Season Municipal Agreements	Winter Resources	Winter Program Augmentation (Rental Trucks & Operators)
12	Winter Municipal Agreements (FY 15/16 to 21/22) ranged between 66 and 67 agreements per fiscal year, with costs ranging from \$1.08 to \$1.31 million.	Anti-icing Trucks – 18 Graders – 10 Loaders – 41 Plow Trucks – 198 Mechanics – 35 Operators – 306 Temporary Operators* - 81	Engineering District indicated that all four CMOs have attempted to procure rental trucks with varying degrees of success: During FY 15-16 to 20-21, the number of rental trucks ranged from 5 to 14.

* Anticipated temporary operators.

^a Knock-out trucks are replacement trucks that PennDOT would otherwise sell but are held in reserve within a specific CMO for winter services if another truck is nonoperational. Note: When provided, we presented data about knock-out trucks to highlight their existence, but we did not specifically ask for this data. If an Engineering District did not provide a number, its respective CMOs might still maintain any knock-out trucks.

Source: Developed by LBFC staff with information provided by PennDOT.

J. Incident Management Readiness.

Question 10. {Incident Management – Readiness} What processes does your Engineering District have in place to manage crisis events (e.g., winter storms, etc.)?

PennDOT defines incident management as the deployment of planned resources relating to state-owned infrastructure in response to an unplanned emergency, which has the potential to deteriorate rapidly without effective actions. Incident management aims to provide life safety, protect remaining facilities from further damage, and restore essential traffic. PennDOT takes an "all hazards" approach to incident management, meaning the process should be used no matter the cause of the state-owned roadway emergency. All-hazards is a term that recognizes incidents occur for a variety of reasons, with a variety of causes and a variety of impacts.

An all-hazards approach allows PennDOT to assist others within the emergency response community as a non-emergency partner, regardless of the parameters of the emergency. Partners include law enforcement, fire and rescue, emergency medical services (EMS), coroner/medical examiner, towing operators, emergency management agencies (e.g., federal – FEMA, state – PEMA, local – County Emergency Management Agency

(911), municipal governments, and hazardous materials responders (Haz-Mat Unit). PennDOT and its partners' tactical activities are performed independently but seek to fulfill the common goal of responding to events and incidents by addressing life safety issues, stabilizing incidents, conserving property, and returning to a normal environment as quickly as possible.

Incident management includes events and incidents, as both require the ability to identify the proper response to ensure an adequate recovery.

An event is a predictable or scheduled occurrence to which planning, preparedness, response, and recovery activities can be applied.

Examples of events:

- Concerts/Fair/Parade.
- Road maintenance.
- Winter storm.
- Training exercise.
- Recurring traffic congestion.

An incident is defined as a non-recurring condition that creates a change in normal activity. Incidents require a focus on identifying the situation, analysis of the cause, response, and resources needed for stabilization and recovery activities.

Examples of instances:

- Fire/Vehicle Fire.
- Flood.
- Bridge collapse.
- Vehicle crash.
- Disabled vehicles.
- Recurring traffic congestion.
- Chemical release/spill.
- Medical emergency.

Related respondent comments:

- Engineering District 1, like the other Engineering Districts, follows the federal incident command protocols; key managers receive Incident Command System (ICS) training. Field staff is also provided with general overviews and training. While steps are taken to avoid incidents as much as possible, when incidents occur, efforts are centered on managing traffic flow by working with emergency services and Pennsylvania State Police (PSP) to restore traffic flow, implementing detours, and clearing vehicles from trapped queues.

- Engineering District 2 has worked over the past three years to improve how it manages crisis events. All incident command center (ICC) staff receive ICS and incident management training. Numerous steps are taken to ensure preparedness for crisis events (e.g., contingency plans are loaded into the winter operational folder, pre-winter meetings are held with PSP, 911 centers, and fire companies, snow academies are held all personnel, develop written truck diversion plans for each limited access route).
- Engineering District 3 activates its district ICC for all significant storms and weather events with the primary objectives of situational awareness and public awareness. It coordinates with PennDOT's Regional Traffic Management Center (RTMC), press officer, CMOs, counties, and area command. All information is stored in the ICC e-mail account exchange and shared drive. Reporting incident procedures have been documented, and a District Emergency Contact reminder e-mail is distributed each Friday afternoon to the Engineering District and CMOs staff. An Assistance Highway Maintenance Manager must be on the scene for interstate closures.
- Engineering District 4 utilizes a District Manage Crisis (DMC) Winter Services Plan, Winter Expectations document, Winter Preparedness document, contingency plans, CMO County Reporting Sheet (scorecard), Downed Winter Equipment Report, On-call Manager, etc.
- Engineering District 5 provided the following overview of the elements in place to address winter storm events and flooding events:

Winter Storm Events:

- a. Event management begins with good advance planning . . . which starts with annually updating the Snow Route Planning Tool*
- *b. Counties [CMOs] have an on-call schedule, and the [Engineering] District has an ICC Team schedule finalized prior to winter.*
- *c. District 5 TOC [Transportation Operation Center] and D8 RTMC [Regional Traffic Management Center located in Engineering District 8] are available to assist with any emergency coordination as they arise, including displaying messages on the message boards for the motoring public.³⁹*

³⁹ There are seven Traffic Management Centers (TMCs), of which four are Regional Traffic Management Centers (24/7 RTMCs): Southeastern RTMC (located in Engineering District 6/D6), Eastern RTMC (located in Engineering District 8/D8), Central RTMC (located in Engineering District 2/D2), and Western RTMC (located in Engineering District

- *d. We have two Winter Operator On-Demand Contracts available if needed as a last resort when all other available resource options have been exhausted.*
- *e. We hold Pre-Winter Event Meetings with County [CMO] and District Management to discuss any staffing, equipment, and facilities issues. To discuss extending shifts, extending routes, usage of knock-outs [trucks], usage of CDL volunteers to operate equipment during event[s] or after event[s] for clean-up, and usage of MET [Mobile Equipment Team] Teams.⁴⁰*
- *f. [Engineering] District and County [CMO] management attend Winter Weather WebEx as scheduled by BOMO [Bureau of Management Operations].*
- *g. [Engineering] District activates the ICC either remotely or in-person during winter storms as determined by the ADE-M [Assistant District Executive for Maintenance] based on the event type and duration.*
- *h. During the event, communications at the county [CMO] level are maintained by dispatcher, the manager on call, and the branch manager, when activated. At the [Engineering] District level, the ICC maintains communication with the counties [CMOs] by phone and e-mail and updates the ADE Maintenance as necessary.*
- *i. Essential communication is maintained with municipalities, PSP, and local police prior to and throughout events.*
- *j. Utilization of commercial vehicle bans and right-lane-only restrictions as well as 45 mph speed reduction as needed.*
- *k. Pre-stage equipment of strategic locations along the Interstates and look-a-likes.*
- *l. Press releases to notify the public of vehicle restrictions, speed reductions, major closures, etc.*
- *m. RCRS [Road Condition Reporting System] is updated as road conditions change throughout the event and closures and restrictions are entered. This information filters to the PA 511 system.*
- *n. After-action reviews are conducted either after a major winter storm event and/or at the end of the*

11/D11). The other three TMCs (non-regional) are located in Engineering District 1, Engineering District 4, and Engineering District 5 and are only open during normal operating hours.

⁴⁰ Mobile Equipment Team (MET) is a deployable resource of personnel, equipment, and other assets assembled by PennDOT for response to events or incidents occurring in an area, outside their normal reporting location, due to a situation that exceeds an organization's capacity (a hot spot in Pennsylvania).

season to establish things that went wrong, things that went well, and things to improve.

- *o. Many different tools are used throughout events, such as weather forecasts, weather apps (Weather Sentry & RWIS),⁴¹ traffic cameras, and weather radar. In addition, continuous communications via phone, e-mail, and text between the county manager, AHMM foremen, operators, and other staff, and driving snow routes occur throughout the events.*

Flooding Events (Hurricanes/Tropical Storms):

- *a. We coordinate with Bridge Unit prior to the event to ensure county staff is familiar with their scour critical bridge list.*
 - *b. Change numbers are created in advance of any major flood event to ensure costs can be captured as quickly as possible if needed for FHWA or FEMA/PEMA reimbursement.*
 - *c. County [CMO] personnel clean drains and ditches prior to the event and throughout the event as needed.*
 - *d. County [CMO] personnel fuel vehicles and chain-saws prior to the event to ensure a quick emergency response.*
 - *e. Inventory of road closure signs, barricades, and cones is completed.*
 - *f. County maintenance continuously monitors roads and bridges for any flooding issues and reports them back to the radio operator.*
 - *g. ICC is activated for any major flood event.*
 - *h. Roads and/or bridges are closed as soon as possible to ensure the public's safety.*
 - *i. Closures are entered into RCRS.*
 - *j. After the event, bridge inspectors review the scour critical bridges and any other bridges of concern.*
 - *k. Design Pavement Management and In-house Project Management staff assist the [Engineering] District Maintenance Manager with post-storm road reviews to assess the damage and provide cost estimates.*
 - *l. Roads and bridges are re-opened as soon as it is deemed safe for the motoring public.*
- Engineering District 6 utilizes the ICS framework to maintain situational awareness and manage incidents. For winter

⁴¹ Weather Sentry provides industry-leading insights that allow emergency management agencies and first responders to track and prepare for catastrophic weather events. Get real-time actionable alerts and comprehensive forecasts for lightning detection, storm corridors, wet-bulb globe temperature forecasts for lightning detection, storm corridors, wet-bulb global temperature forecasts, pavement forecasts, flood levels and more. RWIS is an acronym for PennDOT's Road Weather and Information System.

events, four teams of senior management staff communicate with CMOs. During non-winter events, it plans and coordinates closely with partner agencies. The following programs and processes are utilized: Winter Preparedness, ICC activations, TMC, radio school for office staff and clerks, snow route assignments, contingency plans, first reports, RCTS, pre-storm Web-Ex, county reporting sheet (scorecard), downed winter equipment report.

- Engineering District 8 ADE-M holds pre-storm conference calls with County Maintenance Manager (CMM) to verify readiness. Personnel, equipment, and materials are pre-positioned as needed (e.g., knock-out trucks, tow trucks, message boards, etc.), and a storm coverage plan is verified with managers and operators. Interstate corridor reviews are conducted during storms to confirm service levels and that RCR information is accurately reported. CMOs conduct internal AARs after significant events to identify opportunities for improvement. The Engineering District is highly proactive with ICC activations during winter storms. When ICC is not activated, managers on duty maintain communications through e-mails and phone calls with area command and the Engineering District management.
- Engineering District 9 has its ICC on-call schedule for commanders from Thanksgiving week in November through March. Once the decision is made to activate ICC, the Engineering District enters an emergency mode in RCRS. An incident action plan (IAP) is completed and sent to the area command. CMO dispatchers then complete County First reports every hour (or sooner if needed). The ICC commander incorporates this information into the District First report and sends it to the area command. During non-winter months and non-activations, its ICC phone is forwarded to the Engineering District 2/D2 RTMC, which is staffed 24/7 if there is a need to activate to manage an incident.
- Engineering District 10 indicated it utilizes the Continuity of Operation Plan (COOP) to establish policy and guidance to ensure the execution of critical functions in the event of an emergency at the Engineering Districts facilities or in its service area that threatens or incapacitates operations and/or requires the relocation of selected personnel and functions. Its ICC utilizes an incident response team designed to assist during emergencies to provide situational awareness, resource coordination, establish detours, etc.
- Engineering District 11 has an ICC protocol for winter storms with criteria that determine when ICC activation is necessary and depends on whether it is snow or ice, intensity, and timing of the event (e.g., rush hour). Similar ICC protocols are in place for any emergencies besides a snow event.

- Engineering District 12 explained that a communication structure is established to maintain situational awareness before a winter event. During a winter event, Engineering District and CMO staff are on the road reviewing conditions in the field and providing situational awareness to leadership. The Engineering District constantly monitors changing conditions and resources to assist in decision-making.

K. Paving Operations.

Question 11. {Paving Operations} Do all CMOs within your PennDOT Engineering District conduct paving operations with internal resources (as such appears to result in reasonable unit costs)?

Paving operations refer to paved highways surfaced with asphalt (bituminous concrete). Asphalt is a mixture of coarse and fine aggregates (stone, gravel, or sand), filler (dust and/or hydrated lime), and bitumen (asphalt cement, a product of crude oil) that is heated and mixed, resulting in hot/warm mix asphalt (HMA). There may be variants to typical asphalt where specialized materials are used to manufacture asphalt for specific purposes. Virgin Asphalt vs. Recycled Asphalt: virgin asphalt is a standard reference for a newly mixed batch of HMA, whereas recycled asphalt consists of asphalt that has been removed from existing paved roads and reconstituted/used in a batch of HMA (which may or may not have been mixed on site). Cold mixed asphalt (CMA) is also produced by emulsifying the asphalt in a blend of cutter products (e.g., blends of aircraft fuel or commercially produced oils) before mixing the aggregate. CMA is generally used as a repair patching material (e.g., potholes). Other asphalt paving-related terms include micro surfacing and mill and fill. Micro-surfacing is a pavement preservation method that employs cold mix slurry made on the job site by mixing aggregate, mineral filler, water, and a polymer-modified asphalt emulsion used for wearing courses, leveling surfaces, and filling wheel ruts with creating seams. Mill and fill consist of milling/removing existing surface paving and replacing it with new asphalt, resulting in seams that must be sealed and maintained. Micro-surfacing is a more recent process and tends to cost less than mill and fill as it requires less material and does not create seams that need to be sealed and maintained.

Paving operations are not considered maintenance activities, and the bulk of paving operations are funded by the capital program, given that such operations are classified as rehabilitation. However, all paving done by CMOs is classified as preservation/rehabilitation given that the resurfacing and related prep work is minimal (e.g., base repair, patching, etc.) and meant to extend the useful life whether or not this type of maintenance activity is completed by internal resources or contract.

Engineering districts indicated that their respective CMOs conducted various paving operations with internal resources (PennDOT forces and equipment). However, due to tight budgets and personnel resources required to complete core cyclical highway maintenance, engineering districts have generally seen a decline in paving operations conducted with internal resources.

Related respondent comments:

- Engineering District 1 responded that it does not do a significant amount of virgin asphalt paving in that all of the asphalt producers in the area are also paving contractors or are owned by them. Generally, the cost to purchase asphalt in place on the highway is nearly the same price as it would be for the Engineering District to pick it up at the asphalt production facility. The small quantity of virgin asphalt paving done by the Engineering District is described as reactive when using a paving contractor would be a premium price. The Engineering District further explained that, in the past, it had a robust and cost-effective cold-recycled asphalt paving program that was utilized on its secondary low-volume highway network. However, it was discontinued due to the lack of funding and increased personnel requirements to complete basic core maintenance. Enhanced traffic control and safety requirements were absorbed by existing personnel resulting in a lack of personnel to direct towards other activities such as the cold recycled asphalt paving program.
- Engineering District 2 responded that it does many internal mill and fill maintenance activities. The internal mill and fill pricing is comparable to similar activities completed by a contractor. Small paving projects are finished with internal resources that supplement paving contracts. These paving projects are usually in isolated areas and are completed with internal resources due to operational needs.
- Engineering District 3 responded that it uses a balance of contracted and internal resources to address highway paving/resurfacing needs. The Engineering District uses three regional paving crews to resurface its lower volume network of highways (typically less than 5,000 ADT), allowing it to address these paving needs cost-effectively. Internal resource paving for 2022 costs approximately \$100/ton, with contracted paving estimated at \$130/ton.
- Engineering District 4 responded that recycled asphalt paving had been completed with internal resources on a limited basis and noted that several CMOs contract base repair as part of the Engineering District's recovery plan for seal coat prep work.

- Engineering District 5 responded that it had utilized internal resources to conduct limited paving operations. The accompanying data provided about HMA leveling/overlay indicated asphalt materials ranged between 20,736 and 44,915 tons and a fiscal year total cost of between \$1.78 million and \$3.17 million for FY 15-16 to FY 17-18 compared to the significantly fewer amounts of between 1,433 and 1,976 tons and a fiscal year total cost of between \$105,008 and \$205,411 for FY 18-19 to FY 21-22. The Engineering District also had recycled asphalt paving operations in FY 18-19 involving 30,077 tons for \$1.45 million.
- Engineering District 6 responded that it contracts for 100 percent of its full-width paving operations. However, its CMOs perform limited mechanized patching consisting of either full lane or full roadway width for limited distances.
- Engineering District 8 responded that its CMOs conduct paving operations with internal resources and share paving equipment across its CMOs.
- Engineering District 9 responded that it has and does complete paving operations with internal resources. However, with tight budgets and personnel resources required to perform core cyclical highway maintenance, it has significantly reduced the number of internal resources for paving in the past few years. Most paving operations in the Engineering District are completed through contract work, although the CMOs within the Engineering District still do some short, long line paving and mechanical patches.
- Engineering District 10 responded that it does conduct paving operations with internal resources, which can save money. However, those resources are limited.
- Engineering District 11 responded that at one point, its CMOs completed full-width paving projects with internal resources; however, this is no longer the case due to staffing limits and cost increases. The Allegheny CMO may complete some full-width paving in an emergency, but the CMOs within the Engineering District do not actively plan for this type of work. Since 2020 the CMOs have focused more on core maintenance activities, and asphalt work has been concentrated on patching and base repairs that prepare the highways for seal coating (e.g., before 2022, Allegheny CMO internal resources paved between 7 to 14 miles of road per year and Beaver CMO paved between 2 and 8 miles of road per year). This leads to contracting all maintenance paving operations at a significantly increased cost.
- Engineering District 12 responded that one of its CMOs currently performs full-width paving with internal resources. In contrast, the other three CMOs perform base repair, edge paving, and mechanical patching with internal resources.

Limited personnel resources preclude the other CMOs within the Engineering District from performing full-width paving as their personnel are fully engaged in general maintenance activities.

L. Reduce Costs.

Question 12. {Reduce Costs} What measures have been taken over the past seven FYs to reduce the costs to perform maintenance operations through Maintenance Efficiency and Cost Effectiveness Initiative (MECE) or otherwise within your engineering district?

The engineering districts all expressed the general theme of looking for ways to reduce maintenance operations costs and implement those measures through MECE and other efficiency initiatives. As previously mentioned in Section II Background Information, PennDOT's Operations and Performance Office (OPO) was established in 2017 to ensure best practices and innovations regarding highway maintenance activities were shared among its engineering districts and CMOs. The OPO was built upon the County Accreditation initiative the CMOs and their respective engineering districts participated in to identify best practices, innovations, and challenges. The overview of the engineering district comments is not all-inclusive.

Related respondent comments:

- Engineering District 1 has been involved with MECE and other efficiency efforts (e.g., right-sizing, modernization, etc.). It mentioned that many efficient efforts have ultimately been implemented by PennDOT departmentwide. The Engineering District also commented on the County Accreditation effort that all CMOs participated in within each Engineering District. A strong focus on employee involvement has resulted in process improvements in safety, efficiency, and cost-effectiveness.
- Engineering District 2, over the past five fiscal years, has reduced 160 pieces of equipment (resulting in direct savings of \$7.7 million in replacement value). It has also reduced ten truck routes districtwide by maximizing snow lane miles (SLM) per truck from the mid-30s to over 40 SLM per truck. The Engineering District utilizes detailed scheduling that ensures efficient use of personnel and equipment (e.g., reduced overtime, material usage, etc.). The Engineering District achieved resource balancing and maximization by implementing districtwide equipment sharing. Maximization of resources was also achieved through inventory management

that minimized materials sitting on a shelf and implemented accountability for all inventory purchases. Expanded salt brine usage has reduced solid material usage (studies have shown that brine usage results in up to a 30% reduction in solid material loss from scatter and bounce).

- Engineering District 3 has continued to reduce costs while maintaining efficiency and quality of maintenance operations (e.g., personnel reductions and reallocations). It continues to utilize snow routing applications to establish snow routes and maximize SLM within PennDOT guidelines and has maintained its truck fleet at or below the MECE quota. Engineering District 3 highlighted that it has been in the top three for the lowest cost per SLM for the last seven years, including three years with the lowest cost per SLM.
- Engineering District 4 has increased brine usage to reduce the amount of salt/solid material and has also implemented resource-sharing and cost-effective planning.
- Engineering District 5 indicated the following:
 - Use a GANNT chart (project planner chart) to identify available equipment, thereby reducing the need for rental equipment and allowing for the correct sizing of its fleet.
 - All of its CMOs are utilizing recycled asphalt paving (RAP) in some fashion in the annual maintenance asphalt paving plans and operations. RAP (vs. asphalt with any recycled asphalt component) can lead to significant material cost reductions.
 - Under the right circumstance, using salt brine (vs. salt) has reduced SLM cost by 60 percent.
 - In 2019, the district established an equipment cleaning policy to reduce maintenance equipment repair costs. For example, all dump trucks must be cleaned at least four times per year, and all plow vehicles and attachments must be cleaned immediately after a winter storm event).
- Engineering District 6 has been specializing in most of its maintenance work crews within its CMOs, hoping to improve their efficiencies and reduce costs.
- Engineering District 8 implemented Count Accreditation measures (e.g., equipment sharing, regional crews). It commented that it had reduced complement levels through attrition. It has also applied salt brine (vs. solid materials).
- Engineering District 9 has instituted alternative work schedules allowing personnel to work longer days for specific activities to maximize productivity with fewer work zone traffic control setups and teardowns. Similarly, night work is utilized for select activities to improve safety and increase productivity due to lighter traffic. Districtwide, it rebalanced

its operator complement among its CMOs to better align its resources with cycle maintenance needs and fully implemented sectional cycle maintenance.

- Engineering District 10 implemented County Accreditation measures and held CMO-level positions to reduce personnel costs (but acknowledged this impacts capacity and the amount of work CMOs could complete).
- Engineering District 11 indicated that it worked with PennDOT's OPO to increase efficiencies and avoid unnecessary mobilization and implemented the stockpiling of materials at the activity location to increase efficiency. These efforts also allowed for the districtwide use and sharing of its assets.
- Engineering District 12 implemented sharing of seal coat equipment districtwide to reduce the amount of equipment needed and the maintenance of such.

APPENDICES



Appendix A: SR 2021-53

PRIOR PRINTER'S NO. 472

PRINTER'S NO. 637

THE GENERAL ASSEMBLY OF PENNSYLVANIA

SENATE RESOLUTION

No. 53 Session of
2021

INTRODUCED BY BAKER, ARGALL, J. WARD, MENSCH, MARTIN, YAW,
YUDICHAK, PITTMAN, MASTRIANO, STEFANO, SCHWANK AND AUMENT,
MARCH 19, 2021

SENATOR LANGERHOLC, TRANSPORTATION, AS AMENDED, APRIL 20, 2021

A RESOLUTION

Directing the Legislative Budget and Finance Committee to conduct a study and issue a report, by 12 months from the date of the adoption of this resolution, on the Pennsylvania Department of Transportation's highway maintenance funding.

WHEREAS, Reliable and sustainable transportation funding remains a critical issue in this Commonwealth; and

WHEREAS, Investments in State road and bridge construction contracts, public transportation capital projects, local road and bridge assistance, certain turnpike expansion projects, multi-modal capital projects and the condition of dirt, gravel or low-volume roads are critical to highway safety, mobility and economic development; and

WHEREAS, Under 75 Pa.C.S. Ch. 91, the Pennsylvania Department of Transportation (PennDOT) provides maintenance to highways

using a funding formula that has not been updated since 1997;
and

WHEREAS, In 2002, the Legislative Budget and Finance Committee (LBFC) conducted a performance audit of PennDOT, a portion of which assessed the 1997 changes; and

WHEREAS, At the time, LBFC found the new formula resulted in a fairer allocation of maintenance money; and

WHEREAS, A contemporary review comparing the conditions from 1997 to present and projections for the foreseeable future is both appropriate and vital as a valuable tool to assess our State highway maintenance funding program; and

WHEREAS, The study should consist of the following:

- (1) A review of the funding formula for each of PennDOT's county maintenance offices (CMOs), including maintenance needs versus maintenance allocation.
- (2) An analysis of the data under paragraph (1) to determine whether CMOs may have been overfunded or underfunded.
- (3) A comparison by CMOs of the condition of highways, bridges and other major assets to ascertain efficacy of management, funding provided and results achieved.
- (4) PennDOT's lane miles and bridges in each CMO, including the number and percentage that are three-digit and four-digit highways.
- (5) Vehicle miles traveled in each CMO. This includes larger truck vehicle miles, the percentage of vehicle miles that is from residents versus out-of-State vehicles and vehicle miles on bonded roads.
- (6) State emergency funding totals by CMOs for acts of nature, such as flooding and landslides.
- (7) A comparison among the 42 PennDOT districts on the effects of winter maintenance, such as freeze/thaw cycles, snowfall averages and number, type and duration of winter events.
- (8) The percentage of State highway maintenance funding that goes toward major, fixed expenditures, including personnel salary and benefit costs in each CMO.

(9) A review of PennDOT's Road Maintenance and Preservation (Road MaP) program created in 2016, including projects completed and selection criteria for these projects and future fiscal stability of the program.

(10) County populations from 1997 to the present and projections for the foreseeable future;

therefore be it

RESOLVED, That the Senate direct the Legislative Budget and Finance Committee to conduct a study and issue a report, by 12 months from the date of the adoption of this resolution, on the Pennsylvania Department of Transportation's highway maintenance funding.

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Appendix B – Discretionary Expanded Highway and Bridge Allocation^a

District/ County	FY 2015- 16	FY 2016- 17	FY 2017- 18	FY 2018- 19	FY 2019- 20	FY 2020- 21	FY 2021- 22
District 1							
Crawford	-	\$2,108	-	-	-	-	-
Erie	14	-	-	-	-	-	-
Venango	50	-	-	-	-	-	-
Warren	-	7,131	5,150	-	-	-	-
Total	\$64	\$9,239	\$5,150	-	-	-	-
District 2							
Centre	15	-	-	-	-	-	-
Clearfield	343	-	-	-	-	-	-
Clinton	19	-	-	-	-	-	-
Cameron	39	-	-	-	-	-	-
McKean	36	3,650	3,000	-	-	-	-
Potter	14,809	7,350	3,580	-	-	-	-
Mifflin	3	-	-	-	-	-	-
Elk	185	-	2,354	-	-	-	-
Juniata	8	-	-	-	-	-	-
Total	\$15,457	\$11,000	\$8,934	-	-	-	-
District 3							
Columbia	3	-	-	-	-	-	-
Lycoming	31	-	-	-	139	-	-
Montour	1	-	-	-	-	-	-
Northumber- land	1	-	-	-	-	-	-
Snyder	1	-	-	-	-	-	-
Sullivan	19	-	1,872	-	365	-	-
Tioga	1,725	845	307	-	908	-	617
Union	2	-	-	-	-	-	-
Bradford	962	-	691	-	376	-	-
Total	\$2,745	\$845	\$2,870	-	\$1,788	-	\$617
District 4							
Lackawanna	11	-	-	-	-	-	-
Luzerne	10	-	-	-	-	-	-
Pike	11	-	2,300	-	-	-	-
Susquehanna	1,157	907	1,549	-	400	-	982
Wayne	3,595	1,000	-	400	-	-	-
Wyoming	26	300	-	-	-	-	-
Total	\$4,810	\$2,207	\$3,849	\$400	\$400	-	\$982

Appendix B Continued

District 5							
Monroe	-	-	300	-	-	200	-
Total	-	-	\$300	-	-	\$200	-
District 6							
Bucks	-	3,750	2,025	-	-	-	-
Chester	-	2,100	2,025	-	-	-	-
Delaware	-	2,250	6,725	-	-	-	-
Montgomery	-	-	125	-	-	-	-
Philadelphia	700	700	700	-	-	-	-
Total	\$700	\$8,800	\$11,600	-	-	-	-
District 8							
Cumberland	-	-	500	-	-	-	-
York	-	-	500	-	-	-	-
Total	-	-	\$1,000	-	-	-	-
District 9							
Bedford	4	-	-	-	-	-	-
Blair	5	-	-	-	-	-	-
Cambria	27	958	2,189	-	-	-	-
Fulton	4	906	-	-	-	-	-
Huntingdon	14	-	-	-	-	-	-
Somerset	2,157	858	2,035	-	-	-	-
Total	\$2,211	\$2,722	\$4,224	-	-	-	-
District 10							
Armstrong	35	300	560	-	-	331	-
Butler	5,056	-	3,079	-	-	-	-
Clarion	34	-	322	-	-	-	-
Indiana	339	-	264	-	-	-	-
Jefferson	46	-	275	-	-	-	-
Total	\$5,510	\$300	\$4,500	-	-	\$331	-
District 11							
Allegheny	8	-	-	-	-	-	-
Beaver	19	-	-	496	-	-	-
Lawrence	-	-	904	-	-	-	-
Total	\$27	-	\$904	\$496	-	-	-
District 12							
Fayette	38	-	-	-	-	-	-
Greene	2,001	4,050	3,776	-	4,267	-	-
Washington	37	-	1,250	3,320	-	-	-
Westmoreland	28	-	-	-	-	-	-
Total	\$2,104	\$4,050	\$5,026	\$3,320	\$4,267	-	-

Appendix B Continued

Central Office	10,372	4,837	2,643	47,417	42,898	43,754	46,495
Statewide Total	\$44,000	\$44,000	\$51,000	\$51,633	\$49,353	\$44,285	\$48,094

^a Not all counties received discretionary funding.

Source: Developed by LBFC Staff with information provided by PennDOT.

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Appendix C – County Maintenance Office Allocations Versus Needs^a

	FY 1997-98			FY 2015-16				
	Gross Allocation	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
District 1								
Crawford	\$16,427	\$27,508	-\$11,081	\$22,140	\$3,545	\$25,685	\$54,942	-\$29,257
Erie	20,206	58,301	-38,095	26,122	4,524	30,646	69,455	-38,809
Forest	4,133	8,533	-4,400	4,908	744	5,652	11,120	-5,468
Mercer	15,492	48,562	-33,070	20,400	3,084	23,484	37,717	-14,233
Venango	9,587	15,029	-5,442	15,257	2,449	17,706	44,300	-26,594
Warren	9,907	18,672	-8,765	13,999	2,349	16,348	47,187	-30,839
District Total	75,752	176,605	-100,853	102,826	16,695	119,521	264,720	-145,199
District 2								
Centre	11,950	15,410	-3,460	19,068	3,139	22,207	42,766	-20,559
Clearfield	16,391	35,288	-18,897	22,719	3,808	26,527	62,513	-35,986
Clinton	7,092	13,657	-6,565	10,126	1,470	11,596	20,599	-9,003
Cameron	1,927	2,702	-775	2,595	399	2,994	8,520	-5,526
McKean	8,083	16,987	-8,904	11,277	1,888	13,165	37,188	-24,023
Potter	8,523	16,857	-8,334	12,285	2,238	14,523	52,046	-37,523
Mifflin	4,944	6,689	-1,745	7,949	1,217	9,166	17,508	-8,342
Elk	5,743	8,579	-2,836	8,213	1,487	9,700	22,194	-12,494
Juniata	5,733	10,618	-4,885	9,231	1,664	10,895	32,058	-21,163
District Total	70,386	126,787	-56,401	103,463	17,310	120,773	295,391	-174,618
District 3								
Columbia	9,803	18,538	-8,735	14,565	2,497	17,062	33,822	-16,760
Lycoming	14,962	33,155	-18,193	22,236	3,839	26,075	59,705	-33,630
Montour	3,495	3,830	-335	5,303	757	6,060	5,899	161
Northumberland	11,050	23,189	-12,139	15,574	2,571	18,145	38,520	-20,375
Snyder	5,579	8,184	-2,605	7,943	1,371	9,314	17,536	-8,222
Sullivan	4,005	6,103	-2,098	6,243	921	7,164	11,476	-4,312
Tioga	11,073	25,058	-13,985	18,700	3,503	22,203	61,985	-39,782
Union	5,187	6,907	-1,720	7,313	1,249	8,562	12,989	-4,427
Bradford	16,071	38,196	-22,125	22,758	4,055	26,813	63,194	-36,381
District Total	81,225	163,161	-81,936	120,635	20,763	141,398	305,126	-163,728
District 4								
Lackawanna	14,582	30,587	-16,005	26,392	4,700	31,092	84,806	-53,714
Luzerne	22,069	56,442	-34,373	33,633	6,546	40,179	136,886	-96,707
Pike	7,305	12,645	-5,340	12,481	2,070	14,551	40,529	-25,978

Appendix C Continued

	FY 1997-98			FY 2015-16			Difference	
	Gross Allocation	Needs	Difference	Gross Allocation	409	Total		Needs
Susquehanna	14,120	29,299	-15,179	23,578	4,247	27,825	93,675	-65,850
Wayne	12,637	19,583	-6,946	17,890	3,605	21,495	74,120	-52,625
Wyoming	6,568	15,900	-9,332	9,728	1,769	11,497	40,624	-29,127
District Total	77,281	164,456	-87,175	123,702	22,937	146,639	470,639	-324,000
District 5								
Berks	18,009	41,810	-23,801	28,198	6,332	34,530	92,407	-57,877
Carbon	6,130	13,875	-7,745	9,748	1,522	11,270	28,086	-16,816
Lehigh	12,203	16,325	-4,122	19,431	3,810	23,241	56,922	-33,681
Monroe	12,911	31,559	-18,648	20,702	3,760	24,462	68,108	-43,646
Northampton	11,850	29,875	-18,025	18,931	3,784	22,715	66,102	-43,387
Schuylkill	13,809	20,740	-6,931	23,020	4,326	27,346	80,675	-53,329
District Total	74,912	154,185	-79,273	120,030	23,534	143,564	392,301	-248,737
District 6								
Bucks	28,081	49,241	-21,160	36,795	9,053	45,848	180,231	-134,383
Chester	25,828	51,011	-25,183	34,424	7,510	41,934	148,930	-106,996
Delaware	18,366	26,259	-7,893	23,956	5,620	29,576	109,521	-79,945
Montgomery	25,335	50,037	-24,702	34,844	8,607	43,451	169,270	-125,819
Philadelphia	29,073	114,245	-85,172	39,117	11,411	50,528	275,416	-224,888
District Total	126,683	290,792	-164,109	169,136	42,201	211,337	883,367	-672,030
District 8								
Adams	8,901	9,781	-880	14,192	2,420	16,612	30,415	-13,803
Cumberland	13,206	15,780	-2,574	19,998	3,498	23,496	28,827	-5,331
Franklin	10,828	11,100	-272	16,796	2,893	19,689	32,906	-13,217
York	21,608	47,538	-25,930	32,570	6,504	39,074	89,134	-50,060
Dauphin	15,166	35,550	-20,384	22,487	4,425	26,912	67,564	-40,652
Lancaster	23,370	60,977	-37,607	32,525	7,162	39,687	104,724	-65,037
Lebanon	7,636	8,856	-1,220	11,538	1,846	13,384	14,762	-1,378
Perry	7,485	13,551	-6,066	11,686	1,803	13,489	27,307	-13,818
District Total	108,200	203,133	-94,933	161,792	30,551	192,343	395,639	-203,296
District 9								
Bedford	14,537	38,132	-23,595	18,580	2,985	21,565	60,003	-38,438
Blair	12,242	18,075	-5,833	14,617	2,287	16,904	26,933	-10,029
Cambria	17,657	28,201	-10,544	22,141	3,365	25,506	62,919	-37,413
Fulton	6,134	7,492	-1,358	8,970	916	9,886	7,570	2,316
Huntingdon	10,575	17,854	-7,279	14,868	2,467	17,335	46,724	-29,389

Appendix C Continued

		FY 2016-17				FY 2017-18					
		Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
District 2											
Centre		18,875	3,151	22,026	44,052	-22,026	18,925	3,639	22,564	36,276	-13,712
Clearfield		22,613	3,737	26,350	52,700	-26,350	22,547	4,315	26,862	44,599	-17,737
Clinton		10,094	1,437	11,531	23,062	-11,531	9,910	1,657	11,567	14,785	-3,218
Cameron		2,605	405	3,010	6,020	-3,010	2,643	469	3,112	5,804	-2,692
McKean		11,137	1,859	12,996	25,992	-12,996	11,189	2,148	13,337	27,427	-14,090
Potter		12,254	2,252	14,506	29,012	-14,506	12,284	2,601	14,885	32,560	-17,675
Mifflin		7,758	1,179	8,937	17,874	-8,937	7,697	1,363	9,060	13,658	-4,598
Elk		7,989	1,397	9,386	18,772	-9,386	7,949	1,613	9,562	17,082	-7,520
Juniata		9,047	1,621	10,668	21,336	-10,668	9,041	1,871	10,912	17,601	-6,689
District Total		102,372	17,038	119,410	238,820	-119,410	102,185	19,676	121,861	209,793	-87,932
District 3											
Columbia		14,321	2,404	16,725	33,450	-16,725	14,585	2,776	17,361	28,246	-10,885
Lycoming		34,205	3,768	37,973	75,946	-37,973	22,589	4,352	26,941	52,707	-25,766
Montour		5,233	732	5,965	11,930	-5,965	5,269	845	6,114	6,047	67
Northumberland		15,315	2,515	17,830	35,660	-17,830	15,546	2,905	18,451	30,834	-12,383
Snyder		7,861	1,312	9,173	18,346	-9,173	8,086	1,515	9,601	15,560	-5,959
Sullivan		11,097	880	11,977	23,954	-11,977	6,172	1,016	7,188	9,444	-2,256
Tioga		18,615	3,416	22,031	44,062	-22,031	18,958	3,944	22,902	50,010	-27,108
Union		7,330	1,217	8,547	17,094	-8,547	7,708	1,407	9,115	13,168	-4,053
Bradford		22,160	3,754	25,914	51,828	-25,914	22,674	4,335	27,009	53,713	-26,704
District Total		136,137	19,998	156,135	312,270	-156,135	121,587	23,095	144,682	259,729	-115,047
District 4											
Lackawanna		26,517	4,600	31,117	62,234	-31,117	27,159	5,312	32,471	90,045	-57,574
Luzerne		33,376	6,656	40,032	80,064	-40,032	33,866	7,687	41,553	107,086	-65,533
Pike		12,375	2,045	14,420	28,840	-14,420	12,516	2,362	14,878	30,500	-15,622
Susquehanna		22,893	4,215	27,108	54,216	-27,108	25,081	4,869	29,950	98,176	-68,226

Appendix C Continued

	FY 2016-17				FY 2017-18					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Wayne	17,407	3,563	20,970	41,940	-20,970	17,707	4,115	21,822	68,049	-46,227
Wyoming	9,676	1,792	11,468	22,936	-11,468	9,780	2,071	11,851	43,760	-31,909
District Total	122,244	22,871	145,115	290,230	-145,115	126,109	26,416	152,525	437,616	-285,091
District 5										
Berks	28,017	6,154	34,171	68,342	-34,171	28,328	7,107	35,435	79,878	-44,443
Carbon	9,719	1,509	11,228	22,456	-11,228	10,783	1,743	12,526	18,552	-6,026
Lehigh	19,208	3,790	22,998	45,996	-22,998	19,365	4,377	23,742	42,224	-18,482
Monroe	20,539	3,721	24,260	48,520	-24,260	20,542	4,297	24,839	56,634	-31,795
Northampton	18,707	3,762	22,469	44,938	-22,469	19,008	4,346	23,354	63,212	-39,858
Schuylkill	24,832	4,273	29,105	58,210	-29,105	22,894	4,936	27,830	62,823	-34,993
District Total	121,022	23,209	144,231	288,462	-144,231	120,920	26,806	147,726	323,322	-175,596
District 6										
Bucks	35,687	9,121	44,808	89,616	-44,808	35,478	10,533	46,011	156,350	-110,339
Chester	33,986	7,603	41,589	83,178	-41,589	35,064	8,782	43,846	123,297	-79,451
Delaware	23,179	5,704	28,883	57,766	-28,883	23,045	6,588	29,633	89,470	-59,837
Montgomery	33,826	8,644	42,470	84,940	-42,470	33,709	9,985	43,694	161,020	-117,326
Philadelphia	37,496	11,448	48,944	97,888	-48,944	36,171	13,220	49,391	235,957	-186,566
District Total	164,174	42,520	206,694	413,388	-206,694	163,467	49,108	212,575	766,094	-553,519
District 8										
Adams	13,763	2,370	16,133	32,266	-16,133	14,066	2,736	16,802	23,235	-6,433
Cumberland	19,500	3,408	22,908	45,816	-22,908	19,770	3,937	23,707	25,714	-2,007
Franklin	16,213	2,824	19,037	38,074	-19,037	16,347	3,261	19,608	25,304	-5,696
York	31,971	6,406	38,377	76,754	-38,377	32,641	7,398	40,039	76,837	-36,798
Dauphin	22,005	4,418	26,423	52,846	-26,423	22,557	5,103	27,660	54,478	-26,818
Lancaster	31,093	7,026	38,119	76,238	-38,119	31,625	8,115	39,740	98,831	-59,091
Lebanon	11,246	1,821	13,067	26,134	-13,067	12,225	2,103	14,328	12,388	1,940
Perry	12,009	1,807	13,816	27,632	-13,816	12,599	2,087	14,686	23,964	-9,278

Appendix C Continued

	FY 2016-17				FY 2017-18					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
District Total	157,800	30,080	187,880	375,760	-187,880	161,830	34,740	196,570	340,751	-144,181
District 9										
Bedford	18,460	3,069	21,529	43,058	-21,529	19,196	3,546	22,742	51,022	-28,280
Blair	14,252	2,247	16,499	32,998	-16,499	14,373	2,594	16,967	21,738	-4,771
Cambria	21,553	3,415	24,968	49,936	-24,968	22,119	3,944	26,063	45,014	-18,951
Fulton	8,935	914	9,849	19,698	-9,849	9,190	1,057	10,247	6,960	3,287
Huntingdon	14,579	2,454	17,033	34,066	-17,033	14,751	2,835	17,586	32,045	-14,459
Somerset	25,789	4,251	30,040	60,080	-30,040	26,105	4,910	31,015	75,570	-44,555
District Total	103,568	16,350	119,918	239,836	-119,918	105,734	18,886	124,620	232,350	-107,730
District 10										
Armstrong	20,133	3,865	23,998	47,996	-23,998	20,575	4,462	25,037	73,962	-48,925
Butler	24,247	4,545	28,792	57,584	-28,792	24,898	5,248	30,146	71,507	-41,361
Clarion	14,535	2,455	16,990	33,980	-16,990	14,912	2,835	17,747	40,351	-22,604
Indiana	22,488	4,153	26,641	53,282	-26,641	23,296	4,797	28,093	74,307	-46,214
Jefferson	16,859	2,944	19,803	39,606	-19,803	17,323	3,399	20,722	43,875	-23,153
District Total	98,262	17,962	116,224	232,448	-116,224	101,004	20,741	121,745	304,001	-182,256
District 11										
Allegheny	73,271	16,880	90,151	180,302	-90,151	80,719	19,485	100,204	398,310	-298,106
Beaver	21,594	4,107	25,701	51,402	-25,701	21,493	4,742	26,235	64,178	-37,943
Lawrence	13,705	2,371	16,076	32,152	-16,076	13,558	2,737	16,295	41,663	-25,368
District Total	108,570	23,358	131,928	263,856	-131,928	115,770	26,964	142,734	504,151	-361,417
District 12										
Fayette	23,754	3,835	27,589	55,178	-27,589	22,245	4,431	26,676	63,379	-36,703
Greene	16,015	2,858	18,873	37,746	-18,873	16,525	3,301	19,826	59,539	-39,713
Washington	34,945	6,567	41,512	83,024	-41,512	36,882	7,584	44,466	117,157	-72,691
Westmoreland	40,173	7,816	47,989	95,978	-47,989	41,002	9,027	50,029	145,431	-95,402
District Total	114,887	21,076	135,963	271,926	-135,963	116,654	24,343	140,997	385,506	-244,509

Appendix C Continued

		FY 2016-17				FY 2017-18				
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Statewide Total	\$1,330,418	\$251,170	\$1,581,588	\$3,163,176	-\$1,581,588	\$1,340,318	\$290,072	\$1,630,390	\$4,002,810	-\$2,372,420
		FY 2018-19				FY 2019-20				
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
District 1										
Crawford	\$22,105	\$4,167	\$26,272	\$51,566	-\$25,294	\$21,024	\$3,985	\$25,009	\$58,715	-\$33,706
Erie	26,622	5,315	31,937	64,340	-32,403	25,614	5,114	30,728	88,333	-57,605
Forest	5,025	790	5,815	6,907	-1,092	4,736	709	5,445	7,034	-1,589
Mercer	20,723	3,682	24,405	38,798	-14,393	19,818	3,526	23,344	41,143	-17,800
Venango	15,893	3,053	18,946	47,840	-28,894	16,296	2,984	19,280	54,883	-35,603
Warren	14,125	2,721	16,846	30,284	-13,438	13,211	2,503	15,714	35,783	-20,069
District Total	104,493	19,728	124,221	239,736	-115,515	100,699	18,821	119,520	285,892	-166,372
District 2										
Centre	18,781	3,629	22,410	33,509	-11,099	17,719	3,430	21,149	37,889	-16,740
Clearfield	22,396	4,212	26,608	44,962	-18,354	21,459	3,946	25,405	56,705	-31,300
Clinton	9,724	1,619	11,343	13,266	-1,923	9,406	1,525	10,931	16,503	-5,572
Cameron	2,708	487	3,195	6,853	-3,658	2,606	470	3,076	12,975	-9,899
McKean	11,195	2,098	13,293	27,463	-14,170	10,567	1,981	12,548	44,965	-32,417
Potter	12,406	2,475	14,881	32,087	-17,206	11,840	2,296	14,136	43,427	-29,291
Mifflin	7,665	1,304	8,969	13,993	-5,024	7,142	1,226	8,368	19,306	-10,938
Elk	7,905	1,512	9,417	16,250	-6,833	7,562	1,404	8,966	23,538	-14,572
Juniata	8,957	1,759	10,716	17,891	-7,175	8,607	1,639	10,246	21,119	-10,873
District Total	101,737	19,095	120,832	206,274	-85,442	96,908	17,917	114,825	276,427	-161,602
District 3										
Columbia	14,999	2,647	17,646	32,666	-15,020	14,275	2,499	16,774	38,283	-21,509
Lycoming	24,979	4,241	29,220	57,044	-27,824	21,263	4,032	25,295	72,236	-46,941
Montour	5,277	831	6,108	6,659	-551	5,065	790	5,855	10,155	-4,300

Appendix C Continued

	FY 2018-19				FY 2019-20					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Northumberland	15,772	2,795	18,567	32,541	-13,973	15,118	2,627	17,745	37,222	-19,477
Snyder	8,278	1,471	9,749	15,931	-6,182	7,752	1,392	9,144	22,047	-12,903
Sullivan	6,649	941	7,590	12,218	-4,628	6,099	881	6,980	17,867	-10,887
Tioga	19,329	3,811	23,140	54,971	-31,831	18,463	3,547	22,010	67,723	-45,713
Union	7,855	1,386	9,241	12,251	-3,010	7,558	1,323	8,881	17,565	-8,684
Bradford	24,229	4,182	28,411	59,519	-31,108	21,659	3,954	25,613	61,288	-35,675
District Total	127,367	22,305	149,672	283,800	-134,128	117,252	21,045	138,297	344,385	-206,089
District 4										
Lackawanna	27,634	5,434	33,068	78,299	-45,231	26,591	5,145	31,736	84,124	-52,388
Luzerne	34,116	8,010	42,126	123,598	-81,472	32,064	7,655	39,719	192,119	-152,400
Pike	12,656	2,357	15,013	30,245	-15,232	12,240	2,216	14,456	37,354	-22,898
Susquehanna	24,622	5,105	29,727	95,047	-65,320	24,189	4,981	29,170	140,844	-111,674
Wayne	17,775	4,116	21,891	73,577	-51,686	16,891	3,970	20,861	93,496	-72,635
Wyoming	10,284	2,273	12,557	42,228	-29,672	9,733	2,223	11,956	78,882	-66,926
District Total	127,087	27,295	154,382	442,995	-288,613	121,708	26,190	147,898	626,819	-478,921
District 5										
Berks	27,744	6,953	34,697	81,967	-47,270	25,475	6,581	32,056	88,260	-56,204
Carbon	9,758	1,706	11,464	21,537	-10,073	9,320	1,629	10,949	28,177	-17,228
Lehigh	18,937	4,341	23,278	49,599	-26,321	17,742	4,183	21,925	56,701	-34,776
Monroe	20,663	4,309	24,972	60,803	-35,831	19,584	4,156	23,740	74,735	-50,995
Northampton	18,936	4,480	23,416	68,091	-44,674	17,721	4,358	22,079	70,346	-48,267
Schuylkill	22,613	4,883	27,496	62,274	-34,779	21,264	4,617	25,881	91,418	-65,537
District Total	118,651	26,672	145,323	344,271	-198,948	111,106	25,524	136,630	409,636	-273,006
District 6										
Bucks	34,897	10,839	45,736	157,044	-111,308	32,128	10,358	42,486	197,116	-154,630
Chester	34,255	9,037	43,292	144,082	-100,790	32,411	8,829	41,240	161,543	-120,303
Delaware	22,404	6,747	29,151	94,590	-65,439	21,090	6,474	27,564	112,802	-85,238

Appendix C Continued

	FY 2018-19				FY 2019-20					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Montgomery	32,769	10,408	43,177	167,966	-124,789	30,177	10,137	40,314	176,874	-136,560
Philadelphia	34,317	13,159	47,476	236,219	-188,743	29,851	12,471	42,322	252,959	-210,637
District Total	158,642	50,190	208,832	799,901	-591,069	145,657	48,269	193,926	901,294	-707,368
District 8										
Adams	13,933	2,655	16,588	24,436	-7,848	13,283	2,534	15,817	28,343	-12,526
Cumberland	19,927	3,855	23,782	27,383	-3,601	19,138	3,677	22,815	33,129	-10,314
Franklin	16,188	3,170	19,358	25,077	-5,719	15,683	2,983	18,666	34,631	-15,965
York	32,451	7,309	39,760	76,247	-36,488	30,697	6,934	37,631	92,207	-54,576
Dauphin	22,013	5,092	27,105	51,633	-24,528	20,732	4,794	25,526	58,573	-33,047
Lancaster	30,986	8,044	39,030	100,146	-61,116	28,780	7,641	36,421	105,324	-68,903
Lebanon	11,542	2,089	13,631	14,787	-1,157	13,756	1,966	15,722	17,182	-1,460
Perry	13,134	2,120	15,254	26,433	-11,179	11,322	2,036	13,358	30,295	-16,937
District Total	160,174	34,334	194,508	346,142	-151,635	153,391	32,565	185,956	399,683	-213,727
District 9										
Bedford	19,253	3,724	22,977	57,627	-34,650	18,811	3,645	22,456	57,246	-34,790
Blair	14,550	2,556	17,106	23,606	-6,500	13,635	2,429	16,064	22,327	-6,263
Cambria	22,978	3,979	26,957	46,180	-19,223	20,878	3,746	24,624	55,866	-31,242
Fulton	9,262	1,080	10,342	9,769	573	9,200	1,057	10,257	9,522	735
Huntingdon	14,809	2,739	17,548	31,766	-14,218	14,224	2,594	16,818	33,612	-16,794
Somerset	26,516	5,103	31,619	90,011	-58,392	26,309	4,973	31,282	106,424	-75,141
District Total	107,368	19,181	126,549	258,960	-132,411	103,057	18,444	121,501	284,996	-163,495
District 10										
Armstrong	20,543	4,532	25,075	82,302	-57,227	19,315	4,389	23,704	90,133	-66,429
Butler	25,067	5,240	30,307	72,344	-42,037	23,449	4,992	28,441	86,146	-57,705
Clarion	14,932	2,929	17,861	42,907	-25,046	14,106	2,843	16,949	48,871	-31,922
Indiana	23,613	4,872	28,485	83,725	-55,240	22,476	4,769	27,245	98,210	-70,965

Appendix C Continued

	FY 2018-19				FY 2019-20					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Jefferson	17,319	3,359	20,678	45,936	-25,258	16,556	3,186	19,742	55,525	-35,783
District Total	101,474	20,932	122,406	327,213	-204,807	95,902	20,179	116,081	378,885	-262,804
District 11										
Allegheny	83,223	20,100	103,323	395,835	-292,512	72,212	19,406	91,618	446,079	-354,461
Beaver	20,907	4,597	25,504	69,402	-43,898	20,134	4,346	24,480	91,991	-67,511
Lawrence	13,202	2,708	15,910	37,263	-21,353	12,279	2,536	14,815	50,090	-35,275
District Total	117,332	27,405	144,737	502,500	-357,763	104,625	26,288	130,913	588,160	-457,247
District 12										
Fayette	22,462	4,589	27,051	63,795	-36,744	20,855	4,367	25,222	60,837	-35,615
Greene	16,550	3,561	20,111	64,253	-44,142	15,557	3,487	19,044	60,202	-41,158
Washington	36,125	8,035	44,160	123,035	-78,875	33,555	7,719	41,274	126,100	-84,826
Westmoreland	40,856	9,267	50,123	140,851	-90,728	43,046	8,853	51,899	145,880	-93,981
District Total	115,994	25,452	141,446	391,934	-250,488	113,013	24,426	137,439	393,018	-255,579
Statewide Total	\$1,340,318	\$292,589	\$1,632,907	\$4,143,726	\$-2,510,819	\$1,263,318	\$279,668	\$1,542,986	\$4,889,197	\$-3,346,211
	FY 2020-21				FY 2021-22					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
District 1										
Crawford	\$20,363	\$3,568	\$23,931	\$71,161	-\$47,230	\$23,319	\$3,908	\$27,227	\$85,820	-\$58,593
Erie	24,677	4,700	29,377	98,109	-68,732	28,139	5,185	33,324	90,182	-56,858
Forest	4,587	586	5,173	8,881	-3,708	4,837	609	5,446	25,861	-20,415
Mercer	19,056	3,185	22,241	56,260	-34,019	21,355	3,529	24,884	59,679	-34,795
Venango	14,722	2,705	17,427	64,031	-46,604	16,673	2,967	19,640	72,167	-52,527
Warren	12,519	2,141	14,660	38,597	-23,937	13,715	2,211	15,926	50,027	-34,101
District Total	95,924	16,885	112,809	337,039	-224,230	108,038	18,409	126,447	383,736	-257,289
District 2										
Centre	16,939	3,062	20,001	41,198	-21,197	18,612	3,271	21,883	42,365	-20,482

Appendix C Continued

	FY 2020-21				FY 2021-22					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Clearfield	20,685	3,506	24,191	57,100	-32,909	22,424	3,695	26,119	53,512	-27,393
Clinton	9,113	1,361	10,474	15,863	-5,389	9,624	1,442	11,066	15,785	-4,719
Cameron	2,565	450	3,015	15,391	-12,376	2,801	518	3,319	15,250	-11,931
McKean	10,290	1,845	12,135	51,208	-39,073	11,556	2,044	13,600	51,423	-37,823
Potter	11,410	1,977	13,387	50,018	-36,631	12,543	2,057	14,600	50,289	-35,689
Mifflin	6,867	1,111	7,978	21,373	-13,395	7,570	1,221	8,791	22,436	-13,645
Elk	7,302	1,250	8,552	25,575	-17,023	8,100	1,351	9,451	31,036	-21,585
Juniata	8,505	1,412	9,917	22,143	-12,226	8,542	1,443	9,985	23,228	-13,243
District Total	93,676	15,974	109,650	299,870	-190,220	101,772	17,042	118,814	305,324	-186,510
District 3										
Columbia	13,798	2,230	16,028	45,697	-29,669	15,342	2,443	17,785	46,631	-28,846
Lycoming	20,527	3,660	24,187	75,291	-51,104	23,066	3,997	27,063	81,609	-54,546
Montour	4,842	711	5,553	11,758	-6,205	5,401	791	6,192	10,146	-3,954
Northumberland	14,596	2,340	16,936	38,321	-21,385	16,055	2,495	18,550	43,470	-24,920
Snyder	7,627	1,260	8,887	23,264	-14,377	8,405	1,377	9,782	25,336	-15,554
Sullivan	5,943	812	6,755	17,629	-10,874	6,549	896	7,445	13,628	-6,183
Tioga	17,786	3,152	20,938	79,714	-58,776	19,973	3,464	23,437	98,901	-75,464
Union	7,483	1,203	8,686	19,872	-11,186	8,237	1,327	9,564	20,986	-11,422
Bradford	20,487	3,509	23,996	65,394	-41,398	22,810	3,751	26,561	73,008	-46,447
District Total	113,089	18,877	131,966	376,938	-244,972	125,838	20,541	146,379	413,715	-267,336
District 4										
Lackawanna	25,364	4,579	29,943	92,484	-62,541	27,532	4,900	32,432	103,495	-71,063
Luzerne	31,401	7,270	38,671	214,727	-176,056	36,495	8,243	44,738	242,486	-197,748
Pike	11,762	1,959	13,721	33,768	-20,047	12,790	2,034	14,824	36,018	-21,194
Susquehanna	22,494	4,727	27,221	185,816	-158,595	25,936	5,528	31,464	183,123	-151,659
Wayne	16,575	3,626	20,201	122,820	-102,619	19,198	4,120	23,318	149,177	-125,859

Appendix C Continued

	FY 2020-21				FY 2021-22					
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Wyoming	9,896	2,223	12,119	106,986	-94,867	11,491	2,742	14,233	98,586	-84,353
District Total	117,492	24,384	141,876	756,600	-614,724	133,442	27,567	161,009	812,885	-651,876
District 5										
Berks	23,700	5,886	29,586	92,760	-63,174	26,706	6,336	33,042	93,749	-60,707
Carbon	9,023	1,438	10,461	37,980	-27,519	9,809	1,584	11,393	38,935	-27,542
Lehigh	16,902	3,781	20,683	61,324	-40,641	19,111	4,078	23,189	69,085	-45,896
Monroe	18,738	3,750	22,488	88,702	-66,214	21,140	4,093	25,233	94,645	-69,412
Northampton	16,734	3,918	20,652	78,208	-57,556	19,120	4,227	23,347	85,256	-61,909
Schuylkill	20,170	4,114	24,284	116,947	-92,663	23,059	4,556	27,615	116,216	-88,601
District Total	105,267	22,887	128,154	475,921	-347,767	118,945	24,874	143,819	497,886	-354,067
District 6										
Bucks	29,642	9,175	38,817	235,363	-196,546	34,745	10,039	44,784	234,368	-189,584
Chester	30,671	8,010	38,681	191,126	-152,445	34,721	8,779	43,500	210,167	-166,667
Delaware	19,586	5,765	25,351	123,275	-97,924	22,575	6,194	28,769	125,779	-97,010
Montgomery	28,048	9,043	37,091	182,523	-145,432	33,071	9,705	42,776	197,068	-154,292
Philadelphia	26,584	10,911	37,495	261,067	-223,572	32,217	11,551	43,768	263,336	-219,568
District Total	134,531	42,904	177,435	993,353	-815,918	157,329	46,268	203,597	1,030,717	-827,120
District 8										
Adams	12,556	2,247	14,803	34,391	-19,588	13,880	2,423	16,303	37,351	-21,048
Cumberland	18,414	3,267	21,681	41,332	-19,651	20,361	3,605	23,966	38,983	-15,017
Franklin	14,824	2,666	17,490	41,858	-24,368	16,473	2,911	19,384	62,389	-43,005
York	29,246	6,196	35,442	114,334	-78,892	32,157	6,776	38,933	110,882	-71,949
Dauphin	19,462	4,263	23,725	69,289	-45,564	21,566	4,601	26,167	73,830	-47,663
Lancaster	26,575	6,839	33,414	114,630	-81,216	30,438	7,435	37,873	111,100	-73,227
Lebanon	11,035	1,744	12,779	23,271	-10,492	11,685	1,930	13,615	22,975	-9,360
Perry	10,972	1,809	12,781	39,978	-27,197	12,053	1,993	14,046	49,186	-35,140
District Total	143,084	29,031	172,115	479,084	-306,969	158,613	31,674	190,287	506,697	-316,410

Appendix C Continued

		FY 2020-21				FY 2021-22					
		Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
District 9											
Bedford	18,933	3,284	22,217	61,399	-39,182	20,388	3,547	23,935	62,846	-38,911	
Blair	13,121	2,159	15,280	23,727	-8,447	14,358	2,297	16,655	23,201	-6,546	
Cambria	19,705	3,295	23,000	61,630	-38,630	21,685	3,496	25,181	52,079	-26,898	
Fulton	9,053	959	10,012	14,876	-4,864	9,593	1,085	10,678	15,759	-5,081	
Huntingdon	13,670	2,224	15,894	40,478	-24,584	15,019	2,345	17,364	35,413	-18,049	
Somerset	23,989	4,510	28,499	115,369	-86,870	26,697	4,891	31,588	118,156	-86,568	
District Total	98,471	16,431	114,902	317,478	-202,576	107,740	17,661	125,401	307,455	-182,054	
District 10											
Armstrong	17,972	3,919	21,891	87,980	-66,089	20,293	4,105	24,398	93,259	-68,861	
Butler	21,884	4,413	26,297	108,287	-81,990	24,815	4,815	29,630	95,508	-65,878	
Clarion	13,358	2,528	15,886	50,527	-34,641	14,849	2,675	17,524	53,540	-36,016	
Indiana	21,506	4,296	25,802	101,216	-75,414	24,153	4,589	28,742	107,824	-79,082	
Jefferson	15,878	2,820	18,698	61,334	-42,636	17,373	2,981	20,354	66,222	-45,868	
District Total	90,598	17,976	108,574	409,343	-300,769	101,483	19,165	120,648	416,351	-295,703	
District 11											
Allegheny	72,517	17,837	90,354	457,336	-366,982	81,091	19,553	100,644	445,687	-345,043	
Beaver	18,909	3,943	22,852	111,810	-88,958	20,485	4,343	24,828	113,679	-88,851	
Lawrence	11,839	2,287	14,126	61,235	-47,109	13,167	2,528	15,695	66,295	-50,600	
District Total	103,265	24,067	127,332	630,381	-503,049	114,743	26,424	141,167	625,661	-484,494	
District 12											
Fayette	20,753	3,803	24,556	68,681	-44,125	21,970	3,987	25,957	75,218	-49,261	
Greene	14,806	3,104	17,910	63,759	-45,849	16,336	3,248	19,584	66,980	-47,396	
Washington	31,757	6,818	38,575	139,319	-100,744	35,345	7,365	42,710	147,618	-104,908	
Westmoreland	35,951	7,807	43,758	157,272	-113,514	40,600	8,305	48,905	171,384	-122,479	
District Total	103,267	21,532	124,799	429,031	-304,232	114,251	22,905	137,156	461,201	-324,045	

Appendix C Continued

	FY 2020-21		FY 2021-22							
	Gross Allocation	409	Total	Needs	Difference	Gross Allocation	409	Total	Needs	Difference
Statewide Total	\$1,198,664	\$250,948	\$1,449,612	\$5,505,040	-\$4,055,428	\$1,342,194	\$272,530	\$1,614,724	\$5,761,628	-\$4,146,904

^a Figures shaded in yellow are instances of years when counties had a total maintenance allocation amount greater than its calculated maintenance needs.

Source: Developed by LBFC Staff with data provided by PennDOT.

Appendix D: Actual Fixed Assets Expenditures by Engineering District and CMO - FY 2015-22

Engineering District / CMO	FY 2015-16		FY 2016-17		FY 2017-18	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
DISTRICT 1						
District 1 Office	\$94,596	-	\$579,829	-	\$345,875	-
Crawford	62,833	-	371,785	-	528,766	-
Erie	302,631	1,008	538,281	-	558,062	1,611
Forest	9,265	-	-	-	131,050	-
Mercer	213,308	-	501,007	-	697,100	-
Venango	192,270	-	194,654	-	150,000	-
Warren	-	-	146,962	-	256,549	-
District 1 Total	\$874,902	\$1,008	\$2,332,518	-	\$2,667,401	\$1,611
DISTRICT 2						
District 2 Office	-	-	510,821	-	590,227	-
Cameron	-	-	-	-	-	-
Centre	81,605	-	109,121	-	20,410	-
Clearfield	14,785	-	56,970	-	-	-
Clinton	63,182	-	29,728	-	55,940	-
Elk	31,625	-	40,050	-	-	-
Juniata	45,639	-	33,676	-	-	-
McKean	46,028	-	28,558	-	183,110	3,194
Mifflin	-	-	-	-	21,465	-
Potter	-	-	18,250	-	-	-
District 2 Total	\$282,863	-	\$832,174	-	\$871,152	\$3,194
DISTRICT 3						
District 3 Office	385,867	-	589,623	-	199,744	-
Bradford	198,290	-	244,646	-	170,963	-
Columbia	113,960	-	92,197	-	149,748	-

Appendix D Continued

Engineering District / CMO	FY 2015-16		FY 2016-17		FY 2017-18	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
District 3 Total	\$1,476,894	\$1,015	\$1,768,848	\$23,639	\$1,224,066	\$101,105
DISTRICT 4						
District 4 Office	-	-	-	-	-	-
Lackawanna	271,973	-	298,275	-	34,738	-
Luzerne	697,346	-	715,570	-	231,399	-
Pike	117,851	-	139,880	-	250,870	-
Susquehanna	260,645	-	203,054	7,817	109,459	-
Wayne	-	-	79,970	-	253,184	-
Wyoming	160,898	-	740,405	-	90,645	-
District 4 Total	\$1,498,712	-	\$2,177,154	\$7,817	\$1,099,994	-
DISTRICT 5						
District 5 Office	495	-	59,450	-	501,049	-
Berks	583,781	-	250,544	-	660,371	-
Carbon	115,390	-	88,611	-	112,282	-
Lehigh	306,526	-	164,208	-	211,487	-
Monroe	-	-	173,924	18,934	160,004	-
Northampton	256,645	-	187,779	-	177,494	-
Schuylkill	117,506	-	210,138	-	143,428	-
District 5 Total	\$1,380,341	-	\$1,134,653	\$18,934	\$1,966,115	-
DISTRICT 6						
District 6 Office	-	-	96,078	-	162,634	-
Bucks	165,629	-	149,985	-	145,522	-

Appendix D Continued

Engineering District / CMO	FY 2015-16		FY 2016-17		FY 2017-18	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
District 6 Total	\$615,975	-	\$861,683	-	\$682,737	-
DISTRICT 8						
District 8 Office	90,216	-	86,224	-	60,678	-
Adams	118,840	-	161,070	-	177,548	-
Cumberland	198,037	-	270,643	-	350,561	-
Dauphin	182,953	-	867,703	-	255,830	-
Franklin	377,001	-	306,789	-	577,407	-
Lancaster	1,111,930	-	950,091	-	1,474,954	-
Lebanon	25,636	-	130,720	-	214,961	-
Perry	6,635	-	43,778	-	288,261	90,578
York	374,186	-	930,752	-	1,755,034	-
District 8 Total	\$2,485,435	-	\$3,747,771	-	\$5,155,234	\$90,578
DISTRICT 9						
District 9 Office	48,638	-	131,410	-	458,471	-
Bedford	7,090	18,203	107,543	-	353,257	-
Blair	41,514	515	74,659	-	463,165	-
Cambria	178,948	-	130,983	-	400,703	97,848
Fulton	-	-	-	-	36,620	-
Huntingdon	-	905	118,143	-	197,923	-
Somerset	10,080	-	143,879	-	191,055	-
District 9 Total	\$286,270	\$19,622	\$706,615	-	\$2,101,193	\$97,848
DISTRICT 10						
District 10 Office	332,818	-	33,324	-	147,049	-
Armstrong	-	-	55,963	-	42,533	-
Butler	8,449	-	70,128	-	73,668	-

Appendix D Continued

Engineering District / CMO	FY 2015-16		FY 2016-17		FY 2017-18	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
Clarion	126	-	19,811	-	79,940	-
Indiana	1,752	-	11,898	-	45,586	-
Jefferson	-	-	44,698	-	44,230	-
District 10 Total	\$343,145	-	\$235,822	-	\$433,007	-
DISTRICT 11						
District 11 Office	-	-	-	-	-	-
Allegheny	-	73,099	85,860	13,091	687,499	200,651
Beaver	-	-	50,181	3,647	-	3,211
Lawrence	-	-	87,510	508	17,634	-
Tunnel Maintenance	16,747	-	-	-	-	-
District 11 Total	\$16,747	\$73,099	\$223,551	\$17,246	\$705,133	\$203,862
DISTRICT 12						
District 12 Office	-	-	-	-	42,083	-
Fayette	12,781	-	-	-	14,655	-
Greene	-	-	-	7,922	9,006	-
Washington	-	-	19,227	-	69,213	-
Westmoreland	39,679	-	-	-	6,268	-
District 12 Total	\$52,460	-	\$19,227	\$7,922	\$141,225	-
GRAND TOTAL	9,313,744	\$94,744	\$14,040,016	\$75,558	\$17,047,257	\$498,198

Engineering District / CMO	FY 2018-19		FY 2019-20		FY 2020-21	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
DISTRICT 1						
District 1 Office	-	-	\$311,971	-	\$85,756	-
Crawford	293,689	-	293,342	-	52,662	-
Erie	308,132	2,893	327,106	-	412,266	-

Appendix D Continued

Engineering District / CMO	FY 2018-19		FY 2019-20		FY 2020-21	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
District 1 Total	\$1,025,596	\$2,893	\$1,584,005	-	\$1,152,619	-
DISTRICT 2						
District 2 Office	110,116	-	307,234	-	32,076	-
Cameron	15,530	-	-	-	-	-
Centre	47,916	-	40,874	-	16,876	-
Clearfield	-	-	146,545	-	-	-
Clinton	19,020	-	23,564	-	9,525	-
Elk	47,870	-	10,998	-	-	-
Juniata	28,990	-	156,082	9,859	18,751	201
McKean	47,870	-	110,255	-	10,998	134
Mifflin	19,020	-	93,493	-	35,673	-
Potter	16,969	-	-	-	6,106	-
District 2 Total	\$353,302	-	\$889,046	\$9,859	\$130,005	\$335
DISTRICT 3						
District 3 Office	199,052	-	173,576	-	28,789	-
Bradford	150,407	11,322	168,688	-9	70,985	-
Columbia	157,757	-	161,891	-	101,380	-
Lycoming	168,592	24,537	162,736	3,940	80,245	-
Montour	-	-	-	-	-	-
Northumberland	161,686	-	208,725	-	-	-
Snyder	34,900	-	61,066	-	45,933	-
Sullivan	-	-	40,762	-	-	-
Tioga	135,137	-	122,239	-	67,482	14,241
Union	-	-	71,385	-	45,933	-

Appendix D Continued

Engineering District / CMO	FY 2018-19		FY 2019-20		FY 2020-21	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
District 3 Total	\$1,007,531	\$35,859	\$1,171,067	\$3,931	\$440,747	\$14,241
DISTRICT 4						
District 4 Office	116,263	-	151,313	-	-	-
Lackawanna	291,647	-	37,044	-	62,213	-
Luzerne	275,969	-	-110	-	337,390	-
Pike	295,119	-	-	-	111,799	-
Susquehanna	179,054	19,021	-	9,834	123,210	27,084
Wayne	117,758	-	-	-	35,578	-
Wyoming	70,312	-	-	-	70,859	-
District 4 Total	\$1,346,121	\$19,021	\$1,888,247	\$9,834	\$741,049	\$27,084
DISTRICT 5						
District 5 Office	105,749	-	25,648	-	2,852	-
Berks	355,821	-	635,249	-	256,732	-
Carbon	186,044	-	85,408	-	-	-
Lehigh	344,795	-	261,976	-	-	-
Monroe	164,670	-	191,760	9,517	65,100	-
Northampton	106,935	-	194,015	2,163	-	6,000
Schuylkill	170,593	1,038	183,076	2,759	99,941	-
District 5 Total	\$1,414,606	\$1,038	\$1,577,132	\$14,439	\$424,625	\$6,000
DISTRICT 6						
District 6 Office	-	-	100,971	-	32,684	-
Bucks	10,314	-	134,300	-	144,379	-
Chester	17,118	-	118,925	-	13,417	-
Delaware	67,951	-	138,046	-	61,452	-
Montgomery	138,563	-	177,948	-	144,379	-
Philadelphia	327,787	-	53,429	-	209,189	-
District 6 Total	\$561,733	-	\$723,618	-	\$605,499	-

Appendix D Continued

Engineering District / CMO	FY 2018-19		FY 2019-20		FY 2020-21	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
DISTRICT 8						
District 8 Office	-	15,286	60,389	2,963	-	-
Adams	204,416	-	148,212	-	369,563	-
Cumberland	133,802	-	49,898	-	168,373	-
Dauphin	298,056	-	105,608	-	282,740	-
Franklin	210,094	-	143,226	-	167,697	-
Lancaster	886,830	-	182,484	-	566,569	-
Lebanon	122,997	-	-	-	-	-
Perry	152,042	9,579	9,299	-	77,926	-
York	990,054	2,637	333,042	4,482	704,135	2,389
District 8 Total	\$2,998,290	\$27,501	\$1,032,158	\$7,445	\$2,337,003	\$2,389
DISTRICT 9						
District 9 Office	109,952	-	204,100	-	139,378	-
Bedford	327,702	29,105	271,720	-	273,977	-
Blair	270,332	-	185,330	-	12,490	1,486
Cambria	255,889	152,411	149,999	-133	-	2,030
Fulton	75,121	-	-	-	-	-
Huntingdon	97,122	-	68,663	-	24,981	-
Somerset	35,206	-	324,945	-	64,800	-
District 9 Total	\$1,171,324	\$181,516	\$1,204,758	-\$133	\$515,626	\$3,516
DISTRICT 10						
District 10 Office	8,400	-	-	-	-	-
Armstrong	49,840	-	136,463	-	-	-
Butler	19,063	-	137,374	-	468	-
Clarion	-	-	57,795	-	-	-
Indiana	147,549	-	1,210	-	-	-
Jefferson	224,285	-	-	-	25,458	-
District 10 Total	\$449,137	-	\$332,842	-	\$25,925	-

Appendix D Continued

Engineering District / CMO	FY 2018-19		FY 2019-20		FY 2020-21	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
DISTRICT 11		409		409		409
District 11 Office	24,847	-	-	-	-	-
Allegheny	431,365	688,974	482,460	461,978	392,893	81,960
Beaver	126,372	14,318	127,338	-	105,207	-
Lawrence	62,929	-	36,759	2,014	65,728	195
Tunnel Maintenance	39,107	-	-	-	-	-
District 11 Total	\$684,621	\$703,292	\$646,557	\$463,991	\$563,829	\$82,155
DISTRICT 12						
District 12 Office	43,606	-	43,030	-	-	-
Fayette	-	-	13,375	-	-	-
Greene	71,849	-	12,550	-	-	-
Washington	-	-	47,829	-	26,413	-
Westmoreland	81,116	-	24,694	-	-8,940	-
District 12 Total	\$196,571	-	\$141,478	-	\$17,473	-
GRAND TOTAL	\$11,208,832	\$971,120	\$9,490,908	\$509,366	\$6,954,400	\$135,720
Engineering District / CMO	FY 2021-22		Non-Base		409	
District 1 Office						
Crawford	-	-	-	-	-	-
Erie	574,968	-	574,968	-	-	-
Forest	404,046	-	404,046	-	-	-
Mercer	41,090	-	41,090	-	-	-
Venango	367,274	-	367,274	-	-	-
Warren	188,207	-	188,207	-	-	-
GRAND TOTAL	\$1,575,585	\$1,575,585	\$1,575,585	-	-	-

Appendix D Continued

Engineering District / CMO	FY 2021-22	
	Base	Non-Base
District 2 Office		409
Cameron	59,994	-
Centre	16,723	-
Clearfield	77,523	-
Clinton	47,681	-
Elk	18,987	-
Juniata	9,996	-
McKean	4,999	1,500-
Mifflin	80,977	-
Potter	12,520	-
Potter	73,824	-
GRAND TOTAL	\$403,224	\$1,500
District 3 Office	93,170	-
Bradford	169,884	46,905
Columbia	31,456	-
Lycoming	80,026	-
Montour	10,915	-
Northumberland	146,166	-
Snyder	86,014	-
Sullivan	-	1,523
Tioga	245,727	8,689
Union	87,516	-
GRAND TOTAL	\$950,874	\$57,116
District 4 Office	117,936	-
Lackawanna	226,480	-
Luzerne	633,555	-
Pike	160,278	-
Susquehanna	358,423	52,617
Wayne	184,902	-

Appendix D Continued

Engineering District / CMO	FY 2021-22	
	Base	Non-Base
Wyoming	269,414	-
GRAND TOTAL	\$1,950,987	\$52,617
District 5 Office	163,698	-
Berks	378,031	-
Carbon	39,299	-
Lehigh	-	-
Monroe	23,250	-
Northampton	254,457	-
Schuylkill	2,877	-
GRAND TOTAL	\$861,611	-
District 6 Office	-	-
Bucks	35,224	-
Chester	104,541	-
Delaware	88,609	-
Montgomery	88,609	-
Philadelphia	309,335	-
GRAND TOTAL	\$626,320	-
District 8 Office	-	26,111
Adams	260,179	-
Cumberland	103,348	-
Dauphin	32,276	-
Franklin	96,886	-
Lancaster	1,547,468	-
Lebanon	409,369	-
Perry	115,242	-
York	1,118,500	500
GRAND TOTAL	\$3,683,268	\$26,611
District 9 Office	-	-

Appendix D Continued

Engineering District / CMO	FY 2021-22	
	Base	Non-Base
Bedford	157,287	2,023
Blair	14,479	-
Cambria	123,249	-
Fulton	23,780	-
Huntingdon	-	-
Somerset	119,519	-
GRAND TOTAL	\$438,314	\$2,023
District 10 Office	418,840	-
Armstrong	28,777	-
Butler	-	-
Clarion	26,552	-
Indiana	-	-
Jefferson	-	-
GRAND TOTAL	\$474,169	-
District 11 Office	-	-
Allegheny	210,230	69,921
Beaver	52,496	-
Lawrence	20,220	-
Tunnel	70,877	-
Maintenance	-	-
GRAND TOTAL	\$353,823	\$69,921
District 12 Office	8,465	-
Fayette	23,313	-
Greene	28,344	4,710
Washington	-	-
Westmoreland	87,516	-
GRAND TOTAL	\$147,637	\$4,710
GRAND TOTAL	\$11,465,812	\$214,498

Source: Developed by LBFC staff from information obtained from PennDOT.

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Appendix E: Actual Operational Expenses by Engineering District and CMO - FY 2015-22

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
DISTRICT 1									
District 1 Office	\$221,385	\$219,915	-	\$228,665	\$227,371	-	\$260,193	\$150,704	-
Crawford	10,231,061	941,252	1,664,201	6,802,567	278,743	4,752,115	6,848,900	508,788	3,337,798
Erie	8,920,207	836,720	-	9,085,581	486,047	-	9,304,859	839,370	-
Forest	1,583,150	96,319	-	1,487,263	49,865	-	1,466,974	84,569	-
Mercer	7,443,667	865,129	-	5,477,135	227,565	-	6,104,745	501,951	-
Venango	5,402,951	915,277	-	4,645,823	435,801	-	5,421,924	311,833	-
Warren	5,450,661	370,603	5,142,782	3,899,156	234,903	2,122,070	4,981,699	202,585	8,906,280
District 1 Total	\$39,253,081	\$4,245,216	\$6,806,983	\$31,626,191	\$1,940,294	\$6,874,185	\$34,389,294	\$2,599,799	\$12,244,078
DISTRICT 2									
District 2 Office	203,834	462,008	-	527,558	523,664	-	342,302	599,806	-
Cameron	878,845	116,779	-	1,114,080	16,916	-	658,810	138,554	-
Centre	5,128,566	281,857	2,399,574	5,183,468	602,591	2,523,503	7,498,050	622,528	2,672,403
Clearfield	5,842,387	392,536	3,421,572	6,072,881	576,052	3,679,836	9,765,598	528,833	4,006,930
Clinton	1,864,242	207,856	-	2,924,427	132,807	-	4,300,854	180,705	-
Elk	3,408,768	203,864	1,320,628	3,046,984	63,006	1,445,096	3,366,908	72,063	1,734,606
Juniata	3,111,452	3,785	-	2,274,493	195,471	-	3,914,668	157,786	-
McKean	2,976,645	107,443	9,388,350	4,838,659	144,250	1,897,490	2,838,516	265,476	5,293,647
Mifflin	2,306,571	79,482	-	2,349,291	203,369	-	3,068,748	155,596	-
Potter	4,634,442	810,867	5,469,815	4,048,942	40,009	16,147,480	3,732,590	141,906	10,505,373
District 2 Total	\$30,355,753	\$2,666,477	\$21,999,939	\$32,380,785	\$2,498,136	\$25,693,404	\$39,487,043	\$2,863,255	\$24,212,960
DISTRICT 3									
District 3 Office	543,182	219,810	-	716,893	171,143	-	673,636	207,309	-
Bradford	6,184,098	276,530	2,125,718	7,082,152	368,460	5,123,971	6,090,759	316,754	4,479,620
Columbia	4,202,113	73,716	1,897,207	3,325,708	85,523	2,640,187	4,032,858	126,216	1,803,432
Lycoming	7,434,725	300,551	2,364,129	8,379,552	4,485,662	4,308,795	6,212,306	5,939,338	2,980,628

Appendix E Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
District 3 Total	\$33,534,685	\$2,138,400	\$14,255,336	\$40,036,740	\$10,465,894	\$25,252,751	\$35,273,612	8,573,081	\$19,528,058
DISTRICT 4									
District 4 Office	540,993	379,681	-	598,826	615,570	-	715,027	724,678	-
Lackawanna	10,779,967	670,656	-	9,490,463	778,327	-	9,329,661	959,836	-
Luzerne	11,086,828	1,701,647	-	13,784,192	1,144,211	-	13,296,065	1,401,604	-
Pike	4,424,023	749,923	906,096	4,114,782	199,559	1,755,125	4,567,581	369,518	2,293,393
Susquehanna	7,807,813	2,861,578	3,561,613	203,054	7,817	-	253,184	-	-
Wayne	-	-	-	79,970	-	-	90,645	-	-
Wyoming	160,898	-	-	740,405	-	-	129,698	-	-
District 4 Total	\$42,490,488	\$6,796,950	\$8,851,990	\$45,653,072	\$4,193,618	\$12,729,080	\$46,200,307	\$4,659,190	\$10,325,943
DISTRICT 5									
District 5 Office	578,447	1,330,313	-	1,320,909	1,487,617	-	854,580	1,686,591	-
Berks	12,740,963	1,732,690	-	8,704,973	1,981,982	-	12,223,630	2,705,707	-
Carbon	2,459,177	183,958	-	3,338,627	246,681	-	3,243,625	343,650	-
Lehigh	6,065,839	1,526,331	-	4,906,376	1,609,560	-	7,485,757	1,406,334	-
Monroe	8,453,412	891,277	3,489,127	6,272,779	921,002	876,837	7,227,252	983,351	4,458,262
Northampton	7,115,070	967,195	-	4,401,672	927,082	-	6,650,105	1,047,224	-
Schuylkill	8,061,843	1,134,470	-	8,716,187	604,310	-	8,811,534	902,471	-
District 5 Total	\$45,474,750	\$7,766,234	\$3,489,127	\$37,661,523	\$7,778,233	\$876,837	\$46,496,484	\$9,075,328	\$4,458,262
DISTRICT 6									
District 6 Office	389,152	2,222,236	-	451,753	2,794,494	-	347,153	3,095,324	-

Appendix E Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
Bucks	19,505,457	1,843,068	4,258,523	10,417,099	1,736,683	10,685,483	19,833,329	1,838,683	9,048,941
Chester	15,028,346	2,030,730	6,473,285	9,788,075	2,677,767	7,281,566	18,749,034	2,754,112	5,059,792
Delaware	9,220,752	1,705,324	3,379,913	8,860,977	2,058,694	5,198,022	14,217,426	2,146,299	3,830,767
Montgomery	12,682,752	4,053,260	4,228,979	15,303,663	2,880,041	6,878,350	16,928,365	3,975,433	2,897,191
Philadelphia	26,496,002	2,741,327	6,927,318	26,624,635	3,240,657	10,141,644	19,722,383	3,111,262	4,737,208
District 6 Total	\$83,322,461	\$14,595,945	\$25,268,016	\$71,446,202	\$15,388,336	\$40,185,065	\$89,797,688	\$16,921,113	\$25,555,899
DISTRICT 8									
District 8 Office	411,670	2,168,989	-	395,369	2,376,112	-	534,552	2,654,210	-
Adams	1,961,860	5,818,001	-	3,824,572	1,670,377	-	3,729,694	163,457	-
Cumberland	5,173,383	3,004,304	928,857	6,334,189	1,007,409	4,087,433	6,665,618	811,118	1,255,180
Dauphin	6,463,781	5,388,687	-	6,313,169	3,873,486	-	7,024,707	557,408	-
Franklin	3,651,905	3,041,163	-	45,787,185	669,192	-	6,063,984	1,206,000	-
Lancaster	4,749,710	15,102,484	-	9,642,177	5,325,641	-	8,880,257	3,298,658	-
Lebanon	2,592,882	2,591,240	-	3,718,469	1,563,883	-	3,414,225	318,075	-
Perry	2,608,012	1,970,042	-	3,424,684	248,217	-	4,048,046	138,512	-
York	8,843,863	6,735,357	1,001,185	9,800,100	1,007,921	2,712,928	9,819,000	2,764,883	7,477,825
District 8 Total	\$36,457,066	\$45,820,266	\$1,930,042	\$49,239,915	\$17,742,237	\$6,800,361	\$50,180,082	\$11,912,320	\$8,733,005
DISTRICT 9									
District 9 Office	299,033	265,777	-	363,473	362,012	-	363,199	305,846	-
Bedford	5,370,692	239,796	-	4,869,056	149,430	-	3,797,372	174,853	-
Blair	4,666,904	298,721	-	3,626,335	139,724	-	4,134,805	608,049	-
Cambria	7,995,038	731,364	2,307,315	7,014,377	313,257	1,977,341	6,290,091	1,116,009	6,283,874
Fulton	1,562,523	149,967	55,752	2,209,903	204,744	212,093	2,087,948	291,657	1,515,407
Huntingdon	4,818,553	76,056	-	4,256,540	127,801	-	3,466,842	83,246	-
Somerset	8,308,820	237,499	2,556,893	8,609,763	78,221	6,240,954	8,343,444	577,345	5,338,505
District 9 Total	\$33,021,563	\$1,999,180	\$4,919,960	\$30,949,447	\$1,375,189	\$8,430,388	\$28,483,700	\$3,157,005	\$13,137,787

Appendix E Continued

Engineering District / CMO	FY 2015-16		FY 2016-17		FY 2017-18	
	Base	Non-Base 409	Base	Non-Base	Base	Non-Base 409
DISTRICT 10						
District 10 Office	399,993	243,117	209,051	140,753	361,805	106,023
Armstrong	8,244,109	137,428	6,718,617	586,733	6,846,896	238,910
Butler	10,109,980	534,149	6,823,338	676,252	7,667,733	525,675
Clarion	3,720,999	454,362	3,727,646	436,620	5,056,301	427,795
Indiana	7,843,560	441,955	7,143,942	453,466	7,176,605	342,759
Jefferson	5,814,037	162,262	6,266,059	358,477	4,959,299	231,620
District 10 Total	\$36,132,679	\$1,973,274	\$30,888,652	\$2,652,300	\$32,068,640	\$1,872,782
DISTRICT 11						
District 11 Office	642,505	1,102,310	745,145	834,634	884,337	849,524
Allegheny	30,696,169	31,341,664	36,085,980	24,032,551	36,350,800	18,041,860
Beaver	6,671,636	2,841,321	10,547,655	2,369,020	9,194,449	7,443,064
Lawrence	4,921,975	172,133	5,447,875	1,968,368	9,051,189	3,912,554
Tunnel Maintenance	1,120,467	-	1,072,018	-	1,172,043	16,050
District 11 Total	\$44,052,752	\$35,457,429	\$53,898,673	\$29,204,573	\$56,652,818	\$30,263,053
DISTRICT 12						
District 12 Office	325,768	234,352	184,204	253,707	315,919	311,627
Fayette	7,362,750	337,947	7,895,474	1,666,254	8,457,282	211,442
Greene	4,908,496	405,109	4,116,576	378,426	3,824,090	283,602
Washington	12,838,073	937,443	13,116,809	1,143,986	14,864,229	1,758,177
Westmoreland	18,402,717	646,048	15,341,488	467,174	13,966,253	1,236,962
District 12 Total	\$43,837,804	\$2,560,900	\$40,654,552	\$3,909,547	\$41,427,774	\$3,801,811
GRAND TOTAL	\$467,933,081	\$126,020,271	\$464,435,752	\$97,148,357	\$500,457,442	\$95,698,736

Appendix E Continued

Engineering District / CMO	FY 2018-19			FY 2019-20			FY 2020-21		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
Snyder	2,392,184	64,604	1,274,886	1,630,833	157,954	1,293,411	1,733,442	107,827	1,225,307
Sullivan	1,601,954	1,255,021	2,597,281	1,094,919	345,074	1,237,362	1,167,947	49,877	1,683,261
Tioga	5,257,076	-109,013	5,195,014	5,081,477	877,637	3,218,077	4,766,225	274,528	3,991,943
Union	2,103,663	205,608	1,095,013	1,553,201	136,956	1,141,878	1,836,206	81,887	1,658,886
District 3 Total	\$36,935,884	-\$2,759,469	\$24,335,676	\$28,732,332	\$12,289,684	\$23,385,973	\$25,229,399	\$1,721,841	\$21,344,908
DISTRICT 4									
District 4 Office	847,801	32,218	-	634,875	364	-	557,081	-	-
Lackawanna	10,879,531	623,999	-	8,521,869	1,131,429	-	5,310,624	605,894	-
Luzerne	12,486,137	1,276,206	-	10,560,970	1,172,364	-	6,164,160	868,988	-
Pike	3,920,302	273,421	4,402,047	3,720,541	279,645	2,915,208	2,336,877	224,208	1,439,837
Susquehanna	6,590,348	-1,897,120	5,018,698	8,492,899	3,474,021	4,262,895	3,478,205	1,856,569	3,971,765
Wayne	3,995,366	376,487	4,829,948	3,884,008	185,218	4,233,633	3,314,661	304,454	2,331,297
Wyoming	1,662,921	137,283	2,383,771	2,726,090	337,690	2,155,089	1,420,752	364,064	1,282,563
District 4 Total	\$40,382,406	\$822,493	\$16,634,465	\$38,541,253	\$6,580,731	\$13,566,825	\$22,582,360	\$4,224,176	\$9,025,463
DISTRICT 5									
District 5 Office	671,865	1,120,920	-	666,311	1,208,417	-	516,527	1,142,129	-
Berks	11,577,95	1,403,754	-	6,612,865	2,178,957	-	3,519,065	2,400,882	-
Carbon	2,993,140	172,743	-	1,704,981	236,726	-	929,258	316,913	-
Lehigh	5,223,114	1,127,190	-	4,641,776	1,454,113	-	1,965,494	1,530,862	-
Monroe	6,760,742	558,303	3,793,972	5,563,184	1,070,859	6,306,528	2,632,417	1,080,761	2,249,409
Northampton	6,619,735	575,280	-	4,214,970	1,029,824	-	1,292,256	1,311,796	-
Schuylkill	6,765,781	817,343	-	5,515,744	1,159,802	-	2,822,961	1,004,511	-
District 5 Total	\$40,612,327	\$5,775,533	\$3,793,972	\$28,919,830	\$8,338,698	\$6,306,528	\$13,677,977	\$8,787,855	\$2,249,409
DISTRICT 6									
District 6 Office	360,982	17,734	-	336,156	19,876	-	281,084	10,427	-
Bucks	17,142,985	3,082,034	9,768,225	11,294,135	2,743,447	10,113,284	10,670,167	2,555,155	6,197,398
Chester	15,680,120	3,154,255	6,514,880	8,953,873	1,690,025	11,130,321	8,746,129	2,400,295	5,119,631

Appendix E Continued

Engineering District / CMO	FY 2018-19			FY 2019-20			FY 2020-21		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
Delaware	8,242,166	2,849,100	4,986,784	6,879,703	2,487,228	13,128,343	6,892,262	2,343,074	6,272,538
Montgomery	13,681,908	5,057,412	4,602,808	8,800,606	9,864,393	10,558,423	10,677,603	10,968,472	12,471,033
Philadelphia	16,938,211	4,705,393	16,140,826	15,987,702	3,484,600	14,408,036	12,701,090	3,735,835	6,306,443
District 6 Total	\$72,046,372	\$18,865,928	\$42,013,523	\$52,252,175	\$20,289,570	\$59,338,406	\$49,968,334	\$22,013,258	\$36,367,043
DISTRICT 8									
District 8 Office	435,939	1,828,044	-	414,695	1,553,099	-	281,816	963,603	-
Adams	4,025,771	459,384	-	2,694,585	275,603	-	1,896,783	459,269	-
Cumberland	6,250,252	831,545	5,186,454	4,156,138	735,748	5,008,886	5,397,954	752,539	2,985,795
Dauphin	7,379,258	2,637,917	-	5,794,795	568,639	-	4,285,457	1,089,556	-
Franklin	5,559,749	513,417	-	3,336,609	471,363	-	3,675,576	581,982	-
Lancaster	8,561,367	3,258,571	-	6,761,810	1,899,728	-	5,351,914	1,308,776	-
Lebanon	2,719,796	478,006	-	2,281,536	3,026,638	-	970,420	1,040,861	-
Perry	3,639,281	98,595	-	2,674,861	191,575	-	1,399,625	285,929	-
York	10,020,965	280,668	4,780,509	8,517,032	1,161,465	7,275,179	5,626,083	1,515,911	6,028,463
District 8 Total	\$48,592,379	\$10,386,147	\$9,966,963	\$36,632,062	\$9,883,859	\$12,284,065	\$28,885,627	\$7,998,426	\$9,014,258
DISTRICT 9									
District 9 Office	367,835	32,618	-	358,900	51,475	-	264,714	46,305	-
Bedford	5,849,145	329,187	-	3,854,588	325,143	-	4,277,562	1,008,964	-
Blair	2,746,873	1,151,278	-	3,127,216	557,322	-	1,574,184	560,131	-
Cambria	6,223,293	2,011,152	5,549,236	5,732,007	1,034,376	4,119,775	3,390,384	381,158	2,211,068
Fulton	1,044,336	233,706	1,446,783	1,069,389	321,367	1,291,523	658,479	236,177	831,000
Huntingdon	3,722,171	79,191	-	2,650,488	174,603	-	2,255,818	60,000	-
Somerset	7,947,552	2,611,007	9,101,189	6,616,669	1,671,626	3,680,656	6,215,449	325,022	2,194,622
District 9 Total	\$27,901,205	\$6,448,138	\$16,097,208	\$23,403,258	\$4,135,911	\$9,091,953	\$18,636,591	\$42,617,757	\$5,236,690
DISTRICT 10									
District 10 Office	408,486	14,505	-	392,950	9,037	2,632	232,116	23,251	1,813
Armstrong	8,266,278	465,781	3,639,189	6,905,587	280,390	4,440,119	3,262,770	319,356	3,916,554

Appendix E Continued

Engineering District / CMO	FY 2018-19			FY 2019-20			FY 2020-21		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
District 10 Total	\$36,424,073	\$2,300,885	\$21,029,518	\$30,863,842	\$2,852,389	\$23,998,255	\$21,506,435	\$2,004,388	\$18,185,355
DISTRICT 11									
District 11 Office	790,406	21,154	-	704,225	117,988	-	577,113	9,520	-
Allegheny	35,602,241	10,917,710	-	35,888,868	22,501,414	-	22,225,544	39,655,482	-
Beaver	7,284,671	6,213,770	3,701,518	9,445,214	4,837,178	3,906,296	4,311,934	10,649,573	6,298,992
Lawrence	5,900,681	11,266,662	2,480,238	4,821,382	5,966,201	2,863,626	2,502,586	6,117,822	2,220,758
Tunnel Maintenance	1,207,084	742	-	1,497,826	1,412	-	1,451,664	9,240	-
District 11 Total	\$50,785,083	\$28,420,038	\$6,181,756	\$52,357,515	\$33,424,193	\$6,769,922	\$31,068,840	\$56,441,636	\$8,519,750
DISTRICT 12									
District 12 Office	375,011	399,193	51	401,294	310,942	35	321,334	139,634	227
Fayette	8,511,100	-414,879	-	7,503,247	315,261	-	4,291,625	1,034,957	-
Greene	5,498,937	-243,871	3,264,978	7,267,106	374,830	5,253,035	3,847,343	293,280	1,420,436
Washington	15,907,565	-1,892,883	10,478,170	14,129,239	1,263,942	11,405,814	8,267,614	1,334,678	6,144,324
Westmoreland	17,212,282	1,122,627	-	16,504,896	652,515	-	12,244,318	896,549	-
District 12 Total	\$47,504,895	-\$1,029,813	\$13,743,198	\$45,805,781	\$2,917,490	\$16,658,884	\$28,972,235	\$3,699,098	\$7,564,987
GRAND TOTAL	\$463,891,674	\$75,570,971	\$194,507,339	\$390,188,231	\$109,728,486	\$194,840,711	\$280,419,567	\$120,548,337	\$136,123,611

Appendix E Continued

Engineering District / CMO	FY 2021-22		
	Base	Non-Base	409
District 1 Office	371,117	7,602	-
Crawford	7,715,367	254,747	5,054,496
Erie	10,882,206	663,304	-
Forest	1,455,793	1,519	-
Mercer	7,140,729	296,526	-
Venango	4,861,455	60,024	-
Warren	4,404,837	202,141	1,447,903
GRAND TOTAL	\$36,831,504	\$1,485,861	\$6,502,399
District 2 Office	322,560	79	-
Cameron	814,923	9,369	-
Centre	5,425,850	2,544,208	931,160
Clearfield	7,742,064	1,354,928	1,526,477
Clinton	3,334,346	146,923	-
Elk	2,812,128	113,517	721,848
Juniata	3,745,101	101,613	-
McKean	3,358,761	238,002	321,817
Mifflin	2,750,570	2,325,808	-
Potter	4,523,525	209,068	2,951,831
GRAND TOTAL	\$34,829,829	\$7,043,515	\$6,453,134
District 3 Office	1,541,950	187,983	-
Bradford	7,017,668	835,449	2,721,377
Columbia	4,020,245	362,196	5,164,466
Lycoming	8,196,343	685,834	3,814,827
Montour	1,488,493	94,926	936,257
Northumberland	3,929,519	427,581	1,951,554
Snyder	2,288,437	117,059	1,676,234
Sullivan	1,934,333	186,032	744,126
Tioga	7,029,383	317,448	3,587,187
Union	2,347,738	122,441	962,285
GRAND TOTAL	\$39,794,109	\$3,336,949	\$21,558,314
District 4 Office	659,161	170,102	-
Lackawanna	11,794,179	1,155,347	-
Luzerne	14,636,780	3,859,499	-
Pike	3,491,135	710,869	2,138,391
Susquehanna	11,074,951	1,208,257	5,897,258
Wayne	5,483,583	458,001	3,089,494
Wyoming	3,776,020	242,679	1,583,581
GRAND TOTAL	\$50,915,810	\$7,804,753	\$12,708,725
District 5 Office	575,737	1,006,251	-
Berks	9,678,509	2,009,760	-
Carbon	2,013,797	363,264	-

Appendix E Continued

Engineering District / CMO	FY 2021-22		
	Base	Non-Base	409
Lehigh	5,552,245	1,871,608	-
Monroe	7,480,381	1,027,800	4,860,642
Northampton	5,787,772	1,214,743	-
Schuylkill	8,904,025	846,272	-
GRAND TOTAL	\$39,992,467	\$8,339,698	\$4,860,642
District 6 Office	350,494	17,971	-
Bucks	12,270,664	6,125,656	6,062,542
Chester	11,842,531	6,307,901	6,165,915
Delaware	7,585,735	2,591,801	5,502,149
Montgomery	11,311,381	8,224,378	6,916,425
Philadelphia	12,714,994	6,924,195	3,693,371
GRAND TOTAL	\$56,075,799	\$30,191,901	\$28,340,401
District 8 Office	517,422	1,316,540	-
Adams	4,940,682	441,041	-
Cumberland	5,884,128	1,696,610	4,012,200
Dauphin	7,729,651	2,783,353	-
Franklin	4,386,176	529,200	-
Lancaster	8,261,711	1,008,782	-
Lebanon	409,369	2,988,051	528,218
Perry	3,768,008	295,538	-
York	10,302,709	2,483,037	9,217,367
GRAND TOTAL	\$48,778,538	\$11,082,318	\$13,229,567
District 9 Office	402,229	113	-
Bedford	4,771,997	632,353	-
Blair	4,144,656	572,931	-
Cambria	6,717,297	357,979	1,990,901
Fulton	2,417,221	203,841	1,000,000
Huntingdon	2,063,781	126,369	-
Somerset	8,380,052	455,594	2,607,785
GRAND TOTAL	\$28,897,234	\$2,349,179	\$5,598,686
District 10 Office	411,330	102,061	-5,402
Armstrong	6,145,583	419,442	4,630,202
Butler	7,268,746	760,752	4,714,669
Clarion	4,245,456	211,967	2,988,458
Indiana	7,789,356	294,498	3,172,609
Jefferson	7,590,073	233,146	2,769,139
GRAND TOTAL	\$33,450,545	\$2,021,866	\$18,269,675
District 11 Office	799,695	14,381	-
Allegheny	30,131,754	23,844,575	-
Beaver	8,492,633	6,506,683	5,634,469

Appendix E Continued

Engineering District / CMO	FY 2021-22		
	Base	Non-Base	409
Lawrence	4,863,312	652,912	4,330,562
Tunnel Maintenance	1,512,875	923	-
GRAND TOTAL	\$45,800,269	\$31,019,474	\$9,965,031
District 12 Office	792,299	40,297	-312
Fayette	9,339,744	3,559,195	-
Greene	6,027,504	223,319	6,106,589
Washington	12,179,222	1,212,528	3,596,442
Westmoreland	14,220,067	1,646,203	-
GRAND TOTAL	\$42,558,837	\$6,681,542	\$9,702,719
GRAND TOTAL	\$457,924,940	\$111,357,056	\$137,189,294

Source: Developed by LBFC staff from information obtained from PennDOT.

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Appendix F: Actual Personnel Services Expenditures by Engineering District and CMO - FY 2015-22

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
DISTRICT 1									
District 1 Office	\$3,349,052	\$132,981	-	\$3,927,193	\$139,871	-	\$4,055,610	\$57,169	\$267
Crawford	10,158,944	143,496	38,112	10,664,961	117,987	114,882	10,786,735	134,822	92,331
Erie	10,843,154	241,583	-	11,963,346	225,958	-	12,297,179	204,047	-
Forest	2,494,089	29,821	-	2,592,394	29,771	-	2,278,171	23,981	-
Mercer	9,415,660	284,269	-	10,215,768	265,179	-	9,879,739	146,378	-
Venango	7,522,798	77,184	-	7,648,912	94,118	-	7,878,252	117,685	-
Warren	6,741,362	90,390	34,771	6,921,600	87,032	72,756	6,553,161	130,809	135,446
District 1 Total	\$50,525,059	\$999,724	\$72,883	\$53,934,174	\$959,915	\$187,638	\$53,728,847	\$814,891	\$228,044
DISTRICT 2									
District 2 Office	4,583,346	901,254	-	4,605,473	1,382,828	-	4,816,661	1,285,323	-
Cameron	1,556,302	21,686	-	1,489,056	44,236	-	1,569,365	52,647	-
Centre	9,093,585	299,172	-	9,569,056	544,479	-	9,556,134	213,035	-
Clearfield	10,896,025	286,077	-	12,023,930	303,990	-	11,284,234	230,027	-
Clinton	4,592,630	468,995	-	5,146,905	335,884	-	5,142,115	180,434	-
Elk	3,983,789	90,582	-	3,904,312	93,737	846	4,032,624	93,457	224
Juniata	4,484,844	140,558	-	4,673,472	48,575	-	4,664,122	94,252	-
McKean	5,563,106	121,034	103,187	6,029,090	125,118	32,614	5,677,123	130,177	129,490
Mifflin	3,718,286	83,280	-	3,956,876	66,858	-	3,831,716	86,153	-
Potter	6,374,644	90,541	188,971	6,731,383	140,127	77,991	6,318,985	120,021	222,609
District 2 Total	\$54,846,556	\$2,503,179	\$292,158	\$58,129,553	\$3,085,832	\$111,451	\$56,893,078	\$2,485,525	\$352,323
DISTRICT 3									
District 3 Office	4,239,344	487,542	-	4,225,146	533,195	-	4,182,012	525,991	-
Bradford	10,582,867	487,402	116,447	11,597,790	634,491	389,506	10,918,806	783,009	147,147
Columbia	7,775,656	206,956	-	7,987,495	199,180	-	7,814,635	159,039	-

Appendix F Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
Lycoming	9,906,017	293,304	60,112	10,934,433	1,595,964	309,035	10,612,676	683,936	127,188
Montour	2,904,757	92,949	-	2,959,545	53,910	-	3,010,040	102,923	-
Northumberland	7,560,060	297,545	-	8,237,951	195,472	-	7,775,506	267,255	-
Snyder	4,081,525	163,950	-	4,500,287	105,737	-	4,119,960	112,705	-
Sullivan	3,319,347	86,186	32,494	3,414,967	549,545	66,303	3,576,937	134,171	57,192
Tioga	8,406,153	316,381	111,133	9,917,450	195,164	671,949	9,175,986	164,623	78,893
Union	3,752,938	177,911	-	4,341,756	151,356	-	4,017,081	149,879	-
District 3 Total	\$62,528,665	\$2,610,727	\$320,186	\$68,116,821	\$4,214,014	\$1,436,793	\$65,203,638	\$3,083,530	\$410,420
DISTRICT 4									
District 4 Office	5,278,910	186,705	-	5,325,611	299,673	-	5,681,873	250,474	-
Lackawanna	10,590,862	225,753	78,972	11,377,180	247,576	278,183	11,401,554	130,115	86,641
Luzerne	12,397,604	255,303	-	14,162,785	261,929	-	13,622,059	206,567	-
Pike	5,072,227	77,342	44,256	5,979,682	67,738	22,686	5,682,393	299,745	10,278
Susquehanna	9,799,150	352,574	80,689	11,132,244	209,518	158,796	11,015,811	233,282	115,785
Wayne	8,058,922	110,302	32,834	8,735,636	75,948	122,399	8,542,899	60,967	42,451
Wyoming	4,693,458	55,160	-	5,251,546	59,734	-	5,318,008	94,424	-
District 4 Total	\$55,891,133	\$1,263,139	\$236,751	\$61,964,684	\$1,222,116	\$582,064	\$61,264,597	\$1,275,573	\$255,156
DISTRICT 5									
District 5 Office	5,361,462	483,110	-	5,704,105	597,435	-	5,636,848	808,425	-
Berks	9,341,566	557,233	-	9,747,811	367,390	-	9,659,642	315,124	-
Carbon	4,735,345	94,403	-	5,074,482	92,587	-	5,050,668	50,637	-
Lehigh	8,126,602	328,116	-	8,633,668	204,469	-	8,671,227	175,422	-
Monroe	8,356,819	385,930	-	9,074,335	350,488	-	9,420,593	304,849	-
Northampton	8,199,416	170,240	-	8,658,328	161,251	-	8,763,528	161,806	-
Schuylkill	9,758,326	25,470	-	10,113,615	81,871	-	10,681,104	65,799	-
District 5 Total	\$53,879,537	\$2,044,503	-	\$57,006,344	\$1,857,491	-	\$57,883,609	\$1,882,062	-

Appendix F Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
DISTRICT 6									
District 6 Office	7,763,299	884,128	-	8,010,236	913,495	-	8,232,158	821,527	-
Bucks	10,555,944	486,800	-	11,127,018	282,710	-	11,203,791	319,959	-
Chester	10,803,892	288,979	-	11,728,696	134,253	-	12,058,027	180,033	-
Delaware	6,692,020	236,058	-	7,028,242	69,687	-	7,100,221	202,211	-
Montgomery	10,724,194	560,172	-	11,286,450	143,600	-	10,700,026	171,789	-
Philadelphia	6,140,270	327,282	-	6,952,719	87,111	-	6,926,951	76,288	-
District 6 Total	\$52,679,620	\$2,783,418	-	\$56,133,361	\$1,630,857	-	\$56,221,173	\$1,771,808	-
DISTRICT 8									
District 8 Office	5,304,831	1,257,751	-	5,649,781	1,169,137	-	5,662,289	1,292,130	-
Adams	6,942,063	486,690	-	6,926,586	649,088	-	6,960,196	314,002	-
Cumberland	9,014,410	502,538	2,225	9,337,897	382,754	16,505	9,438,669	310,416	75,313
Dauphin	9,140,402	437,534	-	9,322,273	349,553	-	9,521,340	314,307	-
Franklin	7,361,169	421,792	-	7,703,932	501,603	-	7,512,473	494,317	-
Lancaster	12,689,933	918,477	-	12,867,685	875,984	-	12,794,147	481,695	-
Lebanon	5,592,422	206,834	-	5,994,000	314,501	-	5,974,073	279,414	-
Perry	6,020,896	173,903	-	6,379,384	91,222	-	6,307,692	63,938	-
York	13,603,199	770,940	-	14,197,035	441,710	-	13,889,195	382,835	-
District 8 Total	\$75,669,324	\$5,176,458	\$2,225	\$78,378,574	\$4,775,551	\$16,505	\$78,060,074	\$3,933,054	\$75,313
DISTRICT 9									
District 9 Office	5,149,713	315,769	-	5,338,527	318,548	-	5,503,127	255,087	-
Bedford	9,388,922	226,781	-	9,827,425	314,966	-	9,821,271	314,876	-
Blair	6,744,062	157,501	-	6,950,379	284,813	-	7,123,167	111,580	-
Cambria	9,642,108	456,684	106,955	10,380,867	320,428	91,751	10,146,187	252,577	192,602
Fulton	5,766,569	141,233	-	6,024,293	118,319	-	5,793,734	106,620	-
Huntingdon	7,483,885	139,987	-	8,096,896	209,079	-	7,694,100	247,234	-
Somerset	11,715,289	165,789	34,318	12,242,833	287,904	129,311	11,696,790	338,419	103,604
District 9 Total	\$55,890,548	41,603,744	\$141,272	\$58,861,220	\$1,854,058	\$221,061	\$57,778,375	\$1,626,392	\$296,206

Appendix F Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			FY 2017-18		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
DISTRICT 10									
District 10 Office	4,740,968	892,629	-	4,858,728	894,480	-	5,359,177	935,276	-
Armstrong	8,718,987	87,255	84,680	8,895,135	94,571	78,570	8,323,566	139,481	268,155
Butler	10,592,546	99,711	104,226	10,528,743	83,505	93,224	10,290,959	149,885	162,147
Clarion	6,933,481	113,388	-	7,435,357	97,583	-	7,072,331	155,988	-
Indiana	10,238,817	166,831	-	10,839,405	182,229	-	9,820,408	562,844	-
Jefferson	7,288,251	103,986	-	7,963,447	116,366	-	7,373,871	96,074	-
District 10 Total	\$48,513,050	\$1,463,799	\$188,906	\$50,520,814	\$1,469,733	\$171,794	\$48,240,312	\$2,039,548	\$430,302
DISTRICT 11									
District 11 Office	5,379,110	1,938,939	-	6,233,377	2,030,902	-	6,091,410	1,784,034	-
Allegheny	19,569,042	1,222,850	-	19,740,977	1,251,826	-	19,935,032	1,528,701	-
Beaver	8,556,480	531,940	-	8,973,930	720,785	-	8,764,764	641,977	-
Lawrence	5,124,804	273,002	-	5,519,410	192,801	-	5,737,914	519,463	-
Tunnel Maintenance	5,805,722	-	-	6,182,121	-	-	6,319,255	2,509	-
District 11 Total	\$44,435,158	\$3,966,731	-	\$46,649,816	\$4,196,315	-	\$46,848,375	\$4,476,683	-
DISTRICT 12									
District 12 Office	3,902,149	110,875	-	4,026,160	151,215	-	4,570,568	89,783	-
Fayette	9,684,959	301,878	-	9,818,259	644,527	-	9,601,610	612,439	-
Greene	7,118,393	255,956	9,534	7,640,556	261,89	30,789	7,474,153	235,222	58,081
Washington	13,541,952	292,837	24,595,	14,241,284	358,192	49,636	13,606,579	546,013	60,794
Westmoreland	15,989,090	464,145	9,420	16,674,611	471,157	33,938	16,366,906	490,989	125,893
District 12 Total	\$50,236,542	\$1,425,691	\$43,550	\$52,400,869	\$1,886,981	\$114,363	\$51,619,817	\$1,974,446	\$244,767
GRAND TOTAL	\$605,095,19	\$25,841,113	\$1,297,930	\$642,096,22	\$27,152,862	\$2,841,669	\$633,741,89	\$25,363,513	\$2,292,531
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Appendix F Continued

Engineering District / CMO	FY 2018-19			FY 2019-20			FY 2020-21		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
DISTRICT 1									
District 1 Office	3,879,463	136,200	-	4,252,885	190,232	7,298	4,237,776	-45,431	-7,737
Crawford	10,435,498	302,966	126,167	10,615,365	280,073	130,696	10,337,509	88,041	164,472
Erie	12,105,138	120,407	-	11,744,349	95,737	-	11,357,072	53,293	-
Forest	2,466,710	26,200	-	2,561,395	4,698	-	2,562,782	11,091	-
Mercer	10,402,974	74,085	-	10,614,848	72,646	-	10,408,203	94,504	-
Venango	7,491,723	68,844	-	7,441,669	203,225	-	7,050,315	86,180	-
Warren	6,404,523	22,827	84,110	6,324,969	96,120	70,340	6,197,404	40,230	22,655
District 1 Total	\$53,186,028	\$751,528	\$210,277	\$53,555,480	\$942,731	\$208,333	\$52,151,062	\$327,908	\$179,389
DISTRICT 2									
District 2 Office	4,911,679	188,111	-	5,083,308	73,600	-	4,970,405	78,367	-
Cameron	1,570,282	4,488	-	1,370,884	13,442	-	1,475,078	3,541	-
Centre	9,041,396	629,117	-	8,696,527	255,775	-	8,857,072	316,112	-
Clearfield	11,656,977	410,569	-	11,574,848	134,303	-	11,231,749	146,545	-
Clinton	5,062,804	239,521	-	4,739,470	113,069	-	5,088,748	121,141	-
Elk	4,073,073	40,983	77,862	3,915,189	22,210	-4	3,954,033	13,244	12,039
Juniata	4,582,558	46,196	-	4,074,323	114,673	-	4,283,651	66,368	-
McKean	5,580,897	54,528	65,230	5,525,826	51,897	108,207	5,676,644	27,077	56,797
Mifflin	4,005,709	23,472	-	3,956,507	51,803	-	3,998,114	325,739	-
Potter	6,302,727	223,175	132,054	6,169,972	31,439	3,327	6,110,067	39,407	107,784
District 2 Total	\$56,788,102	\$1,860,119	\$275,146	\$55,106,855	\$862,211	\$111,530	\$55,645,563	\$1,137,541	\$176,620
DISTRICT 3									
District 3 Office	4,261,603	913,843	-	4,458,9660	484,185	-	4,383,357	493,335	-
Bradford	10,498,529	238,878	59,679	11,095,774	315,375	191,897	10,988,065	322,237	212,922
Columbia	7,588,985	173,651	-	7,940,919	136,103	-	8,181,248	66,875	-
Lycoming	10,891,575	503,236	117,449	10,866,585	302,449	135,450	10,879,924	212,877	170,652
Montour	2,919,207	71,302	-	2,972,279	46,778	-	3,155,879	29,881	-
Northumberland	7,816,138	133,404	-	7,913,439	136,024	-	8,169,559	63,666	-
Snyder	3,961,427	108,202	-	4,164,699	79,348	-	4,376,897	59,750	-

Appendix F Continued

Engineering District / CMO	FY 2018-19			FY 2019-20			FY 2020-21		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
District 3 Total	\$63,897,185	\$2,489,090	\$256,590	\$65,919,367	\$1,911,507	\$404,827	\$66,391,626	\$1,592,862	\$627,227
DISTRICT 4									
District 4 Office	5,886,688	226,813	-	6,121,973	153,170	-	5,924,170	181,778	-
Lackawanna	11,412,464	197,329	178,740	10,744,099	207,849	186,301	11,228,728	241,786	251,490
Luzerne	13,919,184	142,389	-	13,632,526	75,986	-	13,920,966	90,806	-
Pike	5,398,165	44,572	81,566	5,471,932	16,572	63,647	5,557,938	36,055	77,125
Susquehanna	9,472,525	150,447	80,149	10,567,105	135,212	132,038	10,066,052	272,998	127,988
Wayne	8,706,854	668,755	58,883	9,290,068	145,547	34,524	8,319,378	490,685	46,919
Wyoming	4,972,032	78,617	-	5,038,479	122,872	-	5,060,348	106,100	-
District 4 Total	\$59,767,912	\$1,508,922	\$399,338	\$60,866,183	\$857,207	\$416,510	\$60,077,590	\$1,420,208	\$503,523
DISTRICT 5									
District 5 Office	5,500,722	773,488	-	5,581,756	812,218	-	5,450,593	389,308	-
Berks	9,881,000	306,750	-	9,184,177	389,320	-	9,154,836	566,485	-
Carbon	5,439,798	36,388	-	5,199,049	24,692	-	5,076,212	146,597	-
Lehigh	8,618,139	383,820	-	8,508,384	163,185	-	8,382,180	274,623	-
Monroe	9,054,246	260,409	-	9,105,527	226,813	-	8,816,981	401,974	-
Northampton	8,604,840	359,539	-	8,335,417	162,478	-	8,502,026	328,961	-
Schuylkill	9,751,483	1,165,311	-	10,203,649	117,212	-	10,449,710	88,719	-
District 5 Total	\$56,850,228	\$3,285,705	-	\$56,117,958	\$1,895,919	-	\$55,832,539	\$2,196,667	-
DISTRICT 6									
District 6 Office	8,751,696	61,129	-	8,996,153	25,255	-	8,476,214	28,154	-
Bucks	10,959,241	338,683	-	9,504,348	204,537	-	9,432,082	266,833	-
Chester	12,356,109	190,287	-	10,831,546	89,605	-	11,151,659	43,059	-
Delaware	7,196,829	159,702	-	6,191,804	40,824	-	6,157,776	171,079	-
Montgomery	10,929,444	277,117	-	9,856,044	278,393	-	9,769,116	526,810	-

Appendix F Continued

Engineering District / CMO	FY 2018-19		FY 2019-20		FY 2020-21	
	Base	Non-Base	Base	Non-Base	Base	Non-Base
District 6 Total	\$7,122,343	\$1,151,822	6,262,062	101,393	5,742,664	99,340
	\$57,315,662	\$1,151,822	\$51,641,958	\$740,006	\$50,729,511	\$1,135,275
DISTRICT 8						
District 8 Office						
Adams	5,834,995	227,860	5,741,426	218,497	5,439,608	281,794
Cumberland	7,167,418	139,912	6,845,704	70,723	6,933,316	82,915
Dauphin	9,310,316	396,504	9,073,858	183,984	9,386,417	113,068
Franklin	9,404,082	731,141	9,027,480	156,604	9,010,622	77,645
Lancaster	8,103,821	215,301	7,256,571	299,393	7,916,844	202,272
Lebanon	12,380,851	482,676	11,541,443	312,440	11,509,903	133,760
Perry	5,662,373	266,282	5,616,863	241,194	5,789,444	108,326
York	6,375,707	146,555	5,961,667	47,471	6,177,110	34,310
District 8 Total	13,246,698	1,267,873	12,833,840	196,822	13,250,436	109,819
	\$77,486,260	\$3,874,104	\$73,898,852	\$1,727,129	\$75,413,700	\$1,143,909
	\$77,486,260	\$3,874,104	\$73,898,852	\$1,727,129	\$75,413,700	\$1,143,909
DISTRICT 9						
District 9 Office						
Bedford	5,600,986	278,595	5,268,563	270,924	4,967,591	116,829
Blair	10,253,064	225,541	9,459,527	206,107	9,760,437	116,337
Cambria	7,058,589	313,990	7,127,532	54,222	7,259,628	54,642
Fulton	10,654,605	312,872	10,092,295	155,342	10,343,279	88,115
Huntingdon	5,963,605	211,501	5,792,769	106,684	5,940,782	46,406
Somerset	8,139,416	225,591	8,011,760	98,149	7,821,293	62,450
District 9 Total	11,428,601	472,914	11,203,516	227,778	11,526,317	73,243
	\$59,098,867	\$2,041,003	\$56,955,961	\$1,119,206	\$57,619,326	\$558,023
	\$59,098,867	\$2,041,003	\$56,955,961	\$1,119,206	\$57,619,326	\$558,023
DISTRICT 10						
District 10 Office						
Armstrong	5,104,440	1,027,301	5,238,970	607,271	5,261,447	399,656
Butler	8,557,903	219,360	8,809,889	72,403	8,565,354	106,111
Clarion	10,518,042	256,050	10,781,053	325,245	10,645,709	119,290
Indiana	7,136,450	186,045	6,942,283	215,363	6,905,729	74,139
	10,018,180	635,223	9,913,311	134,524	10,755,616	120,245
	\$59,098,867	\$2,041,003	\$56,955,961	\$1,119,206	\$57,619,326	\$558,023
	\$59,098,867	\$2,041,003	\$56,955,961	\$1,119,206	\$57,619,326	\$558,023

Appendix F Continued

Engineering District / CMO	FY 2018-19			FY 2019-20			FY 2020-21		
	Base	Non-Base	409	Base	Non-Base	409	Base	Non-Base	409
Jefferson	7,549,237	114,810	-	7,386,521	82,444	-	7,637,526	31,126	-
District 10 Total	\$48,884,251	\$2,438,790	\$244,070	\$49,072,027	\$1,437,252	\$340,271	\$49,771,380	\$850,568	\$293,690
DISTRICT 11									
District 11 Office	6,167,316	324,462	-	6,359,452	460,564	-	6,073,077	512,507	-
Allegheny	20,677,592	1,437,264	-	21,246,742	1,842,229	-	19,263,757	1,574,852	-
Beaver	8,606,867	707,044	-	8,300,491	647,720	-	7,688,556	730,574	-
Lawrence	5,717,044	545,129	-	5,822,124	327,050	-	5,425,344	432,376	-
Tunnel Maintenance	6,596,144	-	-	6,916,832	-	-	7,052,489	-	-
District 11 Total	\$47,764,963	\$3,013,899	-	\$48,645,641	\$3,277,563	-	\$45,476,223	\$3,250,310	-
DISTRICT 12									
District 12 Office	4,485,284	149,250	-	4,626,175	1,250,534	-	4,880,674	43,338	-
Fayette	10,291,966	319,898	-	9,921,195	313,736	-	10,275,097	314,988	-
Greene	7,492,089	211,440	19,539	7,032,312	213,789	36,147	7,485,191	304,556	37,656
Washington	14,085,425	314,120	118,295	13,763,833	303,069	103,389	13,836,033	312,495	124,675
Westmoreland	16,637,584	335,756	74,607	15,984,985	283,856	125,444	16,125,160	258,122	58,389
District 12 Total	\$52,992,348	\$1,330,465	\$212,441	\$51,328,500	\$2,364,984	\$264,980	\$52,602,156	\$1,233,500	\$220,720
GRAND TOTAL	\$634,031,807	\$23,745,446	\$2,372,187	\$623,108,779	\$17,135,715	\$2,312,301	\$621,710,676	\$14,846,770	\$2,248,617

Appendix F Continued

Engineering District / CMO	FY 2021-22		
	Base	Non-Base	409
District 1 Office	4,767,788	212,704	163
Crawford	10,545,752	113,890	75,184
Erie	12,100,400	82,784	-
Forest	2,668,868	4,276	-
Mercer	10,586,460	117,709	-
Venango	6,783,301	160,900	-
Warren	6,412,149	68,278	31,666
GRAND TOTAL	\$53,864,718	\$760,540	\$107,013
District 2 Office	5,291,977	130,618	-
Cameron	1,537,952	23,129	-
Centre	8,875,046	488,504	-
Clearfield	11,026,764	202,091	-
Clinton	5,041,737	187,980	-
Elk	3,734,501	26,794	-
Juniata	4,485,437	53,732	-
McKean	5,356,028	7,195	1,575
Mifflin	3,833,074	233,717	-
Potter	6,130,661	128,130	55,385
GRAND TOTAL	\$55,313,178	\$1,531,889	\$56,959
District 3 Office	4,716,995	375,744	-
Bradford	10,388,621	1,108,208	81,338
Columbia	7,953,198	121,185	-
Lycoming	11,085,401	308,595	133,191
Montour	2,991,359	65,561	-
Northumberland	7,620,940	116,202	-
Snyder	4,214,066	90,463	-
Sullivan	3,468,388	65,747	14,818
Tioga	8,861,504	521,072	95,707
Union	4,232,695	108,268	-
GRAND TOTAL	\$65,533,169	\$2,881,042	\$325,054
District 4 Office	6,109,610	144,999	-
Lackawanna	12,041,714	241,336	52,284
Luzerne	13,875,595	350,015	-
Pike	5,771,884	104,693	10,547
Susquehanna	10,888,728	200,990	60,277
Wayne	8,811,013	246,162	110,217
Wyoming	5,190,853	61,836	-
GRAND TOTAL	\$62,689,397	\$1,350,030	\$233,325
District 5 Office	5,451,231	598,450	-
Berks	9,163,946	472,564	-
Carbon	5,430,110	98,058	-
Lehigh	8,224,126	161,583	-
Monroe	9,210,027	431,917	-
Northampton	8,594,103	200,638	-
Schuylkill	10,617,313	148,117	-
GRAND TOTAL	\$56,690,855	\$2,111,328	-

Appendix F Continued

Engineering District / CMO	FY 2021-22		
	Base	Non-Base	409
District 6 Office	9,073,197	55,308	-
Bucks	9,462,299	734,199	-
Chester	9,677,393	610,656	-
Delaware	5,545,329	158,385	-
Montgomery	9,318,994	788,041	-
Philadelphia	5,927,857	145,974	-
GRAND TOTAL	\$49,005,069	\$2,492,563	-
District 8 Office	5,227,353	282,339	-
Adams	6,843,002	143,522	-
Cumberland	9,124,047	168,436	134,148
Dauphin	8,768,852	315,215	-
Franklin	7,758,877	293,031	-
Lancaster	11,204,969	202,774	-
Lebanon	5,593,117	232,095	-
Perry	6,202,096	44,634	-
York	12,842,480	556,181	-
GRAND TOTAL	\$73,564,793	\$2,238,227	\$134,148
District 9 Office	5,349,950	103,443	-
Bedford	9,666,260	265,634	-
Blair	7,492,550	78,637	-
Cambria	10,443,441	87,242	34,212
Fulton	5,952,255	191,504	-
Huntingdon	8,195,148	144,328	-
Somerset	11,502,762	164,065	59,493
GRAND TOTAL	\$58,602,366	\$1,034,852	\$93,705
District 10 Office	5,288,008	262,073	-
Armstrong	8,384,186	84,655	168,311
Butler	10,775,273	114,381	234,023
Clarion	7,238,098	53,971	-
Indiana	10,635,969	96,143	-
Jefferson	7,862,541	73,639	-
GRAND TOTAL	\$50,184,075	\$684,862	\$402,334
District 11 Office	5,919,799	380,456	-
Allegheny	19,067,399	1,498,794	-
Beaver	7,270,920	578,270	-
Lawrence	5,725,541	368,305	-
Tunnel Maintenance	7,165,732	-	-
GRAND TOTAL	\$45,149,390	\$2,825,825	-
District 12 Office	5,005,668	40,553	-
Fayette	10,210,499	394,259	-
Greene	7,696,658	198,469	23,023
Washington	13,711,602	349,121	24,253
Westmoreland	16,024,502	468,205	82,282
GRAND TOTAL	\$52,648,929	\$1,450,606	\$129,557
GRAND TOTAL	\$623,245,940	\$19,361,766	\$1,482,097

Source: Developed by LBFC staff from information obtained from PennDOT.

Appendix G: Actual Overall Expenditures by Engineering District and CMO - FY 2015-22

Engineering District / CMO	Expenditure	FY 2015-16			FY 2016-17		
		Base	Non-Base	409	Base	Non-Base	409
District 1 Office							
	Fixed Assets	\$94,596	-	-	\$579,829	-	-
	Operational	221,385	219,915	-	228,665	227,371	-
	Personnel	3,349,052	132,981	-	3,927,193	139,871	-
	TOTAL	\$3,665,033	\$352,895	-	\$4,735,687	\$367,242	-
Crawford							
	Fixed Assets	62,833	-	-	371,785	-	-
	Operational	10,231,061	941,252	1,664,201	6,802,567	278,743	4,752,115
	Personnel	10,158,944	143,496	38,112	10,664,961	117,987	114,882
	TOTAL	\$20,452,837	\$1,084,749	\$1,702,313	\$17,839,314	\$396,729	\$4,866,997
Erie							
	Fixed Assets	302,631	1,008	-	538,281	-	-
	Operational	8,920,207	836,720	-	9,085,581	486,047	-
	Personnel	10,843,154	241,583	-	11,963,346	225,958	-
	TOTAL	\$20,065,992	\$1,079,310	-	\$21,587,209	\$712,005	-
Forest							
	Fixed Assets	9,265	-	-	-	-	-
	Operational	1,583,150	96,319	-	1,487,263	49,865	-
	Personnel	2,494,089	29,821	-	2,592,394	29,771	-
	TOTAL	\$4,086,504	\$126,141	-	\$4,079,658	\$79,635	-
Mercer							
	Fixed Assets	213,308	-	-	501,007	-	-
	Operational	7,443,667	865,129	-	5,477,135	227,565	-
	Personnel	9,415,660	284,269	-	10,215,768	265,179	-
	TOTAL	\$17,072,634	\$1,149,398	-	\$16,193,909	\$492,744	-
Venango							
	Fixed Assets	192,270	-	-	194,654	-	-
	Operational	5,402,951	915,277	-	4,645,823	435,801	-

Appendix G Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			
	Expenditure	Base	Non-Base	409	Base	Non-Base	409
Warren							
Personnel		7,522,798	77,184	-	7,648,912	94,118	-
TOTAL		\$13,118,018	\$992,461	-	\$12,489,389	\$529,919	-
Fixed Assets		-	-	-	146,962	-	-
Operational	5,450,661		370,603	5,142,782	3,899,156	234,903	2,122,070
Personnel	6,741,362		90,390	34,771	6,921,600	87,032	72,756
TOTAL	\$12,192,023	\$460,993	\$460,993	\$5,177,553	\$10,967,718	\$321,935	\$2,194,825
Grand Total		\$90,653,042	\$5,245,947	\$6,879,866	\$87,892,882	\$2,900,209	\$7,061,822
District 2 Office							
Fixed Assets		-	-	-	510,821	-	-
Operational	203,834		462,008	-	527,558	523,664	-
Personnel	4,583,346		901,254	-	4,605,473	1,382,828	-
TOTAL	\$4,787,180	\$1,363,262	\$1,363,262	-	\$5,643,852	\$1,906,492	-
Cameron							
Fixed Assets		-	-	-	-	-	-
Operational	878,845		116,779	-	1,114,080	16,916	-
Personnel	1,556,302		21,686	-	1,489,056	44,236	-
TOTAL	\$2,435,147	\$138,465	\$138,465	-	\$2,603,137	\$61,152	-
Centre							
Fixed Assets	81,605		-	-	109,121	-	-
Operational	5,128,566		281,857	2,399,574	5,183,468	602,591	2,523,503
Personnel	9,093,585		299,172	-	9,569,056	544,479	-
TOTAL	\$14,303,756	\$581,029	\$581,029	\$2,399,574	\$14,861,646	\$1,147,069	\$2,523,503
Clearfield							
Fixed Assets	14,785		-	-	56,970	-	-
Operational	5,842,387		392,536	3,421,572	6,072,881	576,052	3,679,836
Personnel	10,896,025		286,077	-	12,023,930	303,990	-
TOTAL	\$16,753,196	\$678,613	\$678,613	\$3,421,572	\$18,153,781	\$880,042	\$3,679,836

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
Clinton			409		409
	Fixed Assets	63,182	-	29,728	-
	Operational	1,864,242	207,856	2,924,427	132,807
	Personnel	4,592,630	468,995	5,146,905	335,884
	TOTAL	\$6,520,054	\$676,851	\$8,101,061	\$468,691
Elk					
	Fixed Assets	31,625	-	45,050	-
	Operational	3,408,768	203,864	3,046,984	63,006
	Personnel	3,983,789	90,582	3,904,312	93,737
	TOTAL	\$7,424,182	\$294,446	\$6,996,347	\$156,743
Juniata					
	Fixed Assets	45,639	-	33,676	-
	Operational	3,111,452	3,785	2,274,493	195,471
	Personnel	4,484,844	140,558	4,673,472	48,575
	TOTAL	\$7,641,935	\$144,343	\$6,981,642	\$244,046
McKean					
	Fixed Assets	46,028	-	28,558	-
	Operational	2,976,645	107,443	4,838,659	144,250
	Personnel	5,563,106	121,034	6,029,090	125,118
	TOTAL	\$8,585,779	\$228,477	\$10,896,307	\$269,369
Mifflin					
	Fixed Assets	-	-	-	-
	Operational	2,306,571	79,482	2,349,291	203,369
	Personnel	3,718,286	83,280	3,956,876	66,858
	TOTAL	\$6,024,856	\$162,762	\$6,306,167	\$270,227
Potter					
	Fixed Assets	-	-	18,250	-
	Operational	4,634,442	810,867	4,048,942	40,009
	Personnel	6,374,644	90,541	6,731,383	140,127
	TOTAL	\$11,009,086	\$901,408	\$10,798,575	\$180,136
GRAND TOTAL		\$85,485,172	\$5,169,655	\$91,342,512	\$5,583,968
			\$22,292,097		\$16,225,470
					\$25,804,855

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
District 3 Office			409		409
	Fixed Assets	385,867	-	589,623	-
	Operational	543,182	219,810	716,893	171,143
	Personnel	4,239,344	487,542	4,225,146	533,195
	TOTAL	\$5,168,392	\$707,353	\$5,531,661	\$704,338
Bradford					
	Fixed Assets	198,290	-	244,646	-
	Operational	6,184,098	276,530	7,082,152	368,460
	Personnel	10,582,867	487,402	11,597,479	634,491
	TOTAL	\$16,965,256	\$763,933	\$18,924,588	\$1,002,951
Columbia					
	Fixed Assets	113,960	-	92,197	-
	Operational	4,202,113	73,716	3,325,708	85,523
	Personnel	7,775,656	206,956	7,987,495	199,180
	TOTAL	\$12,091,729	\$280,672	\$11,405,400	\$284,703
Lycoming					
	Fixed Assets	155,157	-	103,535	3,012
	Operational	7,434,725	300,551	8,379,552	5,485,662
	Personnel	9,906,017	293,904	10,934,433	1,595,964
	TOTAL	\$17,495,899	\$594,455	\$19,417,520	\$7,084,638
Montour					
	Fixed Assets	76,177	-	-	-
	Operational	1,127,732	22,356	1,194,969	72,608
	Personnel	2,904,757	92,949	2,959,545	53,910
	TOTAL	\$4,108,666	\$115,305	\$4,154,514	\$126,517
Northumberland					
	Fixed Assets	109,159	-	266,656	-
	Operational	3,346,471	85,527	5,891,512	154,933
	Personnel	7,560,060	297,545	8,237,951	195,472
	TOTAL	\$11,015,690	\$383,072	\$14,396,120	\$350,404
			\$1,939,188		\$1,928,412
					\$1,928,412

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
Snyder			409		409
	Fixed Assets	47,744	-	120,280	-
	Operational	2,133,382	54,009	1,964,216	82,087
	Personnel	4,081,525	163,950	4,500,287	105,737
	TOTAL	\$6,262,651	\$217,959	\$6,584,782	\$187,824
			\$1,232,930		\$1,074,020
Sullivan					
	Fixed Assets	10,350	-	57,388	3,451
	Operational	1,619,126	66,136	1,873,448	3,630,112
	Personnel	3,319,347	86,186	3,414,967	549,545
	TOTAL	\$4,948,823	\$152,322	\$5,345,803	\$4,183,108
			\$847,257		\$733,792
Tioga					
	Fixed Assets	346,044	1,015	294,523	17,176
	Operational	5,365,923	184,285	6,992,058	318,646
	Personnel	8,406,153	316,381	9,917,450	195,164
	TOTAL	\$14,118,120	\$501,681	\$17,204,031	\$550,986
			\$2,500,383		\$8,063,539
Union					
	Fixed Assets	34,146	-	-	-
	Operational	1,577,934	855,480	2,616,233	96,721
	Personnel	3,752,938	177,911	4,341,756	151,356
	TOTAL	\$5,365,018	\$1,033,391	\$6,957,989	\$248,078
			\$1,050,365		\$1,207,786
GRAND TOTAL		\$97,540,245	\$4,750,142	\$109,922,409	\$14,703,546
			\$14,575,521		\$26,689,544
District 4 Office					
	Fixed Assets	-	-	-	-
	Operational	540,993	379,681	598,826	615,570
	Personnel	5,278,910	186,705	5,325,611	299,673
	TOTAL	\$5,819,903	\$566,386	\$5,924,438	\$915,243
Lackawanna					
	Fixed Assets	271,973	-	298,275	-
	Operational	10,779,967	670,656	9,490,463	778,327

Appendix G Continued

Engineering District / CMO	FY 2015-16			FY 2016-17		
	Expenditure	Base	Non-Base	409	Base	Non-Base
Personnel	10,590,862	225,753	78,972	11,377,180	247,576	278,183
TOTAL	\$21,642,803	\$896,410	\$78,972	\$21,165,918	\$1,025,903	\$278,183
Luzerne						
Fixed Assets	697,346	-	-	715,570	-	-
Operational	11,086,828	1,701,647	-	13,784,192	1,144,211	-
Personnel	12,397,604	255,303	-	14,162,785	261,929	-
TOTAL	\$24,181,778	\$1,956,950	-	\$28,662,547	\$1,406,140	-
Pike						
Fixed Assets	117,851	-	-	139,880	-	-
Operational	4,424,023	749,923	906,096	4,114,782	199,559	1,755,125
Personnel	5,072,227	77,342	44,256	5,979,682	67,738	22,686
TOTAL	\$9,614,100	\$827,265	\$950,352	\$10,234,344	\$267,297	\$1,777,811
Susquehanna						
Fixed Assets	250,645	-	-	203,054	7,817	-
Operational	7,807,813	2,861,578	3,561,613	7,358,946	603,972	3,762,580
Personnel	9,799,150	352,574	80,689	11,132,244	209,518	158,796
TOTAL	\$17,857,608	\$3,214,152	\$3,642,302	\$18,694,244	\$821,306	\$3,921,375
Wayne						
Fixed Assets	-	-	-	79,970	-	-
Operational	5,832,017	247,913	2,994,449	7,169,123	749,441	6,126,281
Personnel	8,058,922	110,302	32,834	8,735,636	75,948	122,399
TOTAL	\$13,890,939	\$358,215	\$3,027,283	\$15,984,729	\$825,389	\$6,248,679
Wyoming						
Fixed Assets	160,898	-	-	740,405	-	-
Operational	2,018,847	185,552	1,389,831	3,136,738	102,537	1,085,095
Personnel	4,693,458	55,160	-	5,251,546	59,734	-
TOTAL	\$6,873,203	\$240,711	\$1,389,831	\$9,128,689	\$162,271	\$1,085,095
GRAND TOTAL	\$99,880,333	\$8,060,089	\$9,088,741	\$109,794,910	\$5,423,550	\$13,311,143

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
District 5 Office			409		409
	Fixed Assets	495	-	59,450	-
	Operational	578,447	1,330,313	1,320,909	1,487,617
	Personnel	5,361,462	483,110	5,704,105	597,435
	TOTAL	\$5,940,403	\$1,813,424	\$7,084,463	\$2,085,052
Berks					
	Fixed Assets	583,781	-	250,544	-
	Operational	12,740,963	1,732,690	8,704,973	1,981,982
	Personnel	9,341,566	557,233	9,747,811	367,390
	TOTAL	\$22,666,310	\$2,289,923	\$18,703,328	\$2,349,372
Carbon					
	Fixed Assets	115,390	-	88,611	-
	Operational	2,459,177	183,958	3,338,627	246,681
	Personnel	4,735,345	94,403	5,074,482	92,587
	TOTAL	\$7,309,912	\$278,361	\$8,501,720	\$339,268
Lehigh					
	Fixed Assets	306,526	-	164,208	-
	Operational	6,065,839	1,526,331	4,906,376	1,609,560
	Personnel	8,126,602	328,116	8,633,668	206,469
	TOTAL	\$14,498,967	\$1,854,447	\$13,704,252	\$1,816,029
Monroe					
	Fixed Assets	-	-	173,924	18,934
	Operational	8,453,412	891,277	6,272,779	921,002
	Personnel	8,356,819	385,930	9,074,335	350,488
	TOTAL	\$16,810,231	\$1,277,207	\$15,521,038	\$1,290,423
			\$3,489,127		\$876,837
Northampton					
	Fixed Assets	256,645	-	187,779	-
	Operational	7,115,070	967,195	4,401,672	927,082
	Personnel	8,199,416	170,240	8,658,328	161,251
	TOTAL	\$15,571,131	\$1,137,435	\$13,247,779	\$1,088,333

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
Schuylkill			409		409
	Fixed Assets	117,506	-	210,138	-
	Operational	8,061,842	1,134,470	8,716,187	604,310
	Personnel	9,758,326	25,470	10,113,615	81,871
	TOTAL	\$17,937,674	\$1,159,940	\$19,039,940	\$686,181
GRAND TOTAL		\$100,734,628	\$9,810,737	\$95,802,520	\$9,654,657
			\$3,489,127		\$876,837
District 6 Office					
	Fixed Assets	-	-	96,078	-
	Operational	389,152	2,222,236	451,753	2,794,494
	Personnel	7,763,299	884,128	8,010,236	913,495
	TOTAL	\$8,152,451	\$3,106,364	\$8,558,067	\$3,707,989
Bucks					
	Fixed Assets	165,629	-	149,985	-
	Operational	19,505,457	1,843,068	10,417,099	1,736,683
	Personnel	10,555,944	486,800	11,127,018	282,710
	TOTAL	\$30,227,030	\$2,329,867	\$21,694,102	\$2,019,393
			\$4,258,523		\$10,685,483
Chester					
	Fixed Assets	173,165	-	149,985	-
	Operational	15,028,346	2,030,730	9,788,075	2,677,767
	Personnel	10,803,892	288,979	11,728,696	134,253
	TOTAL	\$26,005,403	\$2,319,709	\$21,542,162	\$2,812,021
			\$6,473,285		\$7,281,566
Delaware					
	Fixed Assets	41,982	-	151,837	-
	Operational	9,220,752	1,705,324	8,860,977	2,058,694
	Personnel	6,692,020	236,058	7,028,242	69,687
	TOTAL	\$15,954,754	\$1,941,381	\$16,041,056	\$2,128,381
			\$3,379,913		\$5,198,022
Montgomery					
	Fixed Assets	67,764	-	194,589	-
	Operational	12,682,752	4,053,260	15,303,663	2,880,041
			4,228,979		6,878,350

Appendix G Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			
	Expenditure	Base	Non-Base	409	Base	Non-Base	409
Personnel	10,724,194	560,172	-	-	11,286,450	143,600	-
TOTAL	\$23,474,710	\$4,613,432	\$4,228,979	\$4,228,979	\$26,784,702	\$3,023,641	\$6,878,350
Philadelphia							
Fixed Assets	167,435	-	-	-	243,803	-	-
Operational	26,496,002	2,741,327	6,927,318	-	26,624,635	3,240,657	10,141,644
Personnel	6,140,270	327,282	-	-	6,952,719	87,111	-
TOTAL	\$32,803,708	\$3,068,610	\$6,927,318	\$6,927,318	\$33,821,157	\$3,327,768	\$10,141,644
GRAND TOTAL	\$136,618,056	\$17,379,363	\$25,268,016	\$25,268,016	\$128,441,246	\$17,019,193	\$40,185,065
District 8 Office							
Fixed Assets	90,216	-	-	-	86,224	-	-
Operational	411,670	2,168,989	-	-	395,369	2,376,112	-
Personnel	5,304,831	1,257,751	-	-	5,649,781	1,169,137	-
TOTAL	\$5,806,718	\$3,426,739	-	-	\$6,131,375	\$3,545,249	-
Adams							
Fixed Assets	118,840	-	-	-	161,070	-	-
Operational	1,961,860	5,818,001	-	-	3,824,572	1,670,377	-
Personnel	6,942,063	486,690	-	-	6,926,586	649,088	-
TOTAL	\$9,022,763	\$6,304,691	-	-	\$10,912,228	\$2,319,465	-
Cumberland							
Fixed Assets	198,037	-	-	-	270,643	-	-
Operational	5,173,383	3,004,304	928,857	-	6,334,189	1,007,409	4,087,433
Personnel	9,014,410	502,538	2,225	-	9,337,897	382,754	16,505
TOTAL	\$14,385,830	\$3,506,841	\$931,081	\$931,081	\$15,942,730	\$1,390,163	\$4,103,937
Dauphin							
Fixed Assets	182,953	-	-	-	867,703	-	-
Operational	6,463,781	5,388,687	-	-	6,313,169	3,873,486	-
Personnel	9,140,402	437,534	-	-	9,322,273	349,553	-
TOTAL	\$15,787,137	\$5,826,221	-	-	\$16,503,146	\$4,223,038	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
Franklin			409		409
	Fixed Assets	377,001	-	306,789	-
	Operational	3,651,905	3,041,163	5,787,185	669,192
	Personnel	7,361,169	421,792	7,703,932	501,603
	TOTAL	\$11,390,074	\$3,462,955	\$13,797,906	\$1,170,795
Lancaster					
	Fixed Assets	1,111,930	-	950,091	-
	Operational	4,749,710	15,102,484	9,642,177	5,325,641
	Personnel	12,689,933	918,477	12,867,685	875,984
	TOTAL	\$18,551,572	\$16,020,960	\$23,459,953	\$6,201,624
Lebanon					
	Fixed Assets	25,636	-	130,720	-
	Operational	2,592,882	2,591,240	3,718,469	1,563,883
	Personnel	5,592,442	206,834	5,994,000	314,501
	TOTAL	\$8,210,940	\$2,798,074	\$9,843,189	\$1,878,387
Perry					
	Fixed Assets	6,635	-	43,778	-
	Operational	2,608,012	1,970,042	3,424,684	248,217
	Personnel	6,020,896	173,903	6,379,384	91,222
	TOTAL	\$8,635,543	\$2,143,945	\$9,847,847	\$339,438
York					
	Fixed Assets	374,186	-	930,752	-
	Operational	8,843,863	6,735,357	9,800,100	1,007,921
	Personnel	13,603,199	770,940	14,197,035	441,710
	TOTAL	\$22,821,248	\$7,506,297	\$24,927,888	\$1,449,631
GRAND TOTAL		\$114,611,825	\$50,996,724	\$131,366,260	\$22,517,787
District 9 Office					
	Fixed Assets	48,638	-	131,410	-
	Operational	299,033	265,777	363,473	362,012

Appendix G Continued

Engineering District / CMO	FY 2015-16			FY 2016-17			
	Expenditure	Base	Non-Base	409	Base	Non-Base	409
Personnel	5,149,713	315,769	-	-	5,338,527	318,548	-
TOTAL	\$5,497,384	\$581,546	-	-	\$5,833,410	\$680,560	-
Bedford							
Fixed Assets	7,090	18,203	-	-	107,543	-	-
Operational	5,370,692	239,796	-	-	4,869,056	149,430	-
Personnel	9,388,922	226,781	-	-	9,827,425	314,966	-
TOTAL	\$14,766,704	\$484,780	-	-	\$14,804,023	\$464,396	-
Blair							
Fixed Assets	41,514	515	-	-	74,659	-	-
Operational	4,666,904	298,721	-	-	3,626,335	139,724	-
Personnel	6,744,062	157,501	-	-	6,950,379	284,813	-
TOTAL	\$11,452,480	\$456,737	-	-	\$10,651,373	\$424,537	-
Cambria							
Fixed Assets	178,948	-	-	-	130,983	-	-
Operational	7,995,038	731,364	2,307,315	-	7,014,377	313,257	1,977,341
Personnel	9,642,108	456,684	106,955	-	10,380,867	320,428	91,751
TOTAL	\$17,816,094	\$1,188,048	\$2,414,270	-	\$17,526,227	\$633,685	\$2,069,092
Fulton							
Fixed Assets	-	-	-	-	-	-	-
Operational	1,562,523	149,967	55,752	-	2,209,903	204,744	212,093
Personnel	5,766,569	141,233	-	-	6,024,293	118,319	-
TOTAL	\$7,329,091	\$291,200	\$55,752	-	\$8,234,196	\$323,063	\$212,093
Huntingdon							
Fixed Assets	-	905	-	-	118,143	-	-
Operational	4,818,553	76,056	-	-	4,256,540	127,801	-
Personnel	7,483,885	139,987	-	-	8,096,896	209,079	-
TOTAL	\$12,302,438	\$216,948	-	-	\$12,471,579	\$336,880	-
Somerset							
Fixed Assets	10,080	-	-	-	143,879	-	-
Operational	8,308,820	237,499	2,556,893	-	8,609,763	78,221	6,240,954

Appendix G Continued

Engineering District / CMO	FY 2015-16			FY 2016-17		
	Base	Non-Base	409	Base	Non-Base	409
Personnel	11,715,289	165,789	34,318	12,242,833	287,904	129,311
TOTAL	\$20,034,190	\$403,288	\$2,591,210	\$20,996,474	\$366,126	\$6,370,265
GRAND TOTAL	\$89,198,381	\$3,622,547	\$5,061,232	\$90,517,283	\$3,229,247	\$8,651,450
District 10 Office						
Fixed Assets	332,818	-	-	33,324	-	-
Operational Personnel	399,993	243,117	-	209,051	140,753	1,629
	4,740,968	892,629	-	4,858,728	895,480	-
TOTAL	\$5,473,779	\$1,135,746	-	\$5,101,102	\$1,036,233	-
Armstrong						
Fixed Assets	-	-	-	55,963	-	-
Operational Personnel	8,244,109	137,428	3,416,707	6,718,617,	586,733	3,285,875
	8,718,987	87,255	84,680	8,895,135	94,571	78,570
TOTAL	\$16,963,095	\$224,682	\$3,501,386	\$15,669,715	\$681,304	\$3,364,445
Butler						
Fixed Assets	8,449	-	-	70,128	-	-
Operational Personnel	10,109,980	534,149	6,705,200	6,823,338	676,252	4,894,923
	10,592,546	99,711	104,226	10,528,743	83,505	93,224
TOTAL	\$20,710,975	\$633,860	\$6,809,426	\$17,422,208	\$759,756	\$4,988,147
Clarion						
Fixed Assets	126	-	-	19,811	-	-
Operational Personnel	3,720,999	454,362	1,368,234	3,727,646	436,620	2,478,053
	6,933,481	113,388	-	7,435,357	97,583	-
TOTAL	\$10,654,606	\$567,751	\$1,368,234	\$11,182,814	\$534,204	\$2,478,053
Indiana						
Fixed Assets	1,752	-	-	11,898	-	-
Operational Personnel	7,843,560	441,955	2,595,715	7,143,942	453,466	5,976,889
	10,238,817	166,831	-	10,839,405	182,229	-
TOTAL	\$18,084,129	\$608,786	\$2,595,715	\$17,995,245	\$635,694	\$5,976,889

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
Jefferson			409		409
	Fixed Assets	-	-	44,698	-
	Operational	5,814,037	162,262	6,266,059	358,477
	Personnel	7,288,251	103,986	7,963,447	116,366
	TOTAL	\$13,102,2898	\$266,248	\$14,274,204	\$474,842
GRAND TOTAL		\$84,988,873	\$3,437,073	\$81,645,288	\$4,122,033
			\$15,365,650		\$20,862,990
District 11 Office					
	Fixed Assets	-	-	-	-
	Operational	642,505	1,102,310	745,145	834,634
	Personnel	5,379,110	1,938,939	6,233,377	2,030,902
	TOTAL	\$6,021,615	\$3,041,248	\$6,978,521	\$2,865,536
Allegheny					
	Fixed Assets	-	73,099	85,860	13,091
	Operational	30,696,169	31,341,664	36,085,980	24,032,551
	Personnel	19,569,042	1,222,850	19,740,977	1,251,826
	TOTAL	\$50,265,211	\$32,637,614	\$55,912,817	\$25,297,469
Beaver					
	Fixed Assets	-	-	50,181	3,647
	Operational	6,671,636	2,841,321	10,547,655	2,369,020
	Personnel	8,556,480	531,940	8,973,930	720,785
	TOTAL	\$15,228,116	\$3,373,261	\$19,571,765	\$2,093,452
Lawrence					
	Fixed Assets	-	-	87,510	508
	Operational	4,921,975	172,133	5,447,875	1,968,368
	Personnel	5,124,804	273,002	5,519,410	192,801
	TOTAL	\$10,046,779	\$445,136	\$11,054,796	\$2,161,677
			\$4,651,575		\$2,066,462
			\$4,651,575		\$2,066,462

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2015-16		FY 2016-17	
		Base	Non-Base	Base	Non-Base
Tunnel Maintenance			409		409
	Fixed Assets	16,747	-	-	-
	Operational	1,120,467	-	1,072,018	-
	Personnel	5,805,722	-	6,182,121	-
	TOTAL	\$6,942,936	-	\$7,254,140	-
GRAND TOTAL		\$88,504,657	\$39,497,259	\$100,772,039	\$33,418,133
			\$8,066,649		\$5,113,254
District 12 Office					
	Fixed Assets	-	-	-	-
	Operational	325,768	234,352	184,204	253,707
	Personnel	3,902,149	110,875	4,026,160	151,215
	TOTAL	\$4,227,917	\$345,227	\$4,210,364	\$404,922
Fayette					
	Fixed Assets	12,781	-	-	-
	Operational	7,362,750	337,947	7,895,474	1,666,254
	Personnel	9,684,959	301,878	9,818,259	644,527
	TOTAL	\$17,060,490	\$639,825	\$17,713,733	\$2,310,780
Greene					
	Fixed Assets	-	-	-	7,922
	Operational	4,908,496	405,109	4,116,576	378,426
	Personnel	7,118,393	255,956	7,640,556	261,890
	TOTAL	\$12,026,889	\$661,065	\$11,757,132	\$648,238
			\$2,031,446		\$4,081,055
Washington					
	Fixed Assets	-	-	19,227	-
	Operational	12,838,073	937,443	13,116,809	1,143,986
	Personnel	13,541,952	292,837	14,241,284	358,192
	TOTAL	\$26,380,025	\$1,230,280	\$27,377,320	\$1,502,178
			\$2,681,319		\$6,530,521

Appendix G Continued

Engineering District / CMO	FY 2015-16		FY 2016-17	
	Base	Non-Base	Base	Non-Base
Westmoreland				
Fixed Assets	39,679	-	-	-
Operational	18,402,717	646,048	15,341,488	467,174
Personnel	15,989,090	464,145	16,674,611	471,157
TOTAL	\$34,431,485	\$1,110,194	\$32,016,099	\$938,331
GRAND TOTAL	\$94,126,806	\$3,986,591	\$93,074,648	\$5,804,450
		\$4,722,185		\$10,645,513

Engineering District / CMO	FY 2017-18		FY 2018-19	
	Base	Non-Base	Base	Non-Base

District 1 Office				
Fixed Assets	\$345,875	-	-	-
Operational	260,193	150,704	238,954	8,613
Personnel	4,055,610	57,169	3,879,463	136,200
TOTAL	\$4,661,678	\$207,872	\$4,118,417	\$144,813
Crawford				
Fixed Assets	528,766	-	293,689	-
Operational	6,848,900	508,788	6,700,818	1,965,387
Personnel	10,786,735	134,822	10,435,498	302,966
TOTAL	\$18,164,402	\$643,610	\$17,437,004	\$2,268,353
		\$3,430,129		\$6,983,309

Erie				
Fixed Assets	558,062	1,611	308,132	2,893
Operational	9,304,859	839,370	9,002,341	963,451
Personnel	12,297,179	204,047	12,105,138	120,407
TOTAL	\$22,160,099	\$1,045,028	\$21,415,612	\$1,086,751

Forest				
Fixed Assets	131,050	-	88,706	-
Operational	1,466,974	84,569	1,350,159	87,989
Personnel	2,278,171	23,981	2,466,710	26,200

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
Mercer	TOTAL	\$3,876,195	\$108,550	-	\$3,905,575	\$114,188	-
	Fixed Assets	697,100	-	-	-	-	-
	Operational	6,104,745	501,951	-	7,515,143	393,585	-
	Personnel	9,879,739	146,378	-	10,402,974	74,085	-
	TOTAL	\$16,681,583	\$648,329	-	\$17,918,117	\$467,669	-
Venango	TOTAL	\$13,450,176	\$429,518	-	\$12,103,877	\$528,150	-
	Fixed Assets	150,000	-	-	146,195	-	-
	Operational	5,421,924	311,833	-	4,465,960	459,306	-
	Personnel	7,878,252	117,685	-	7,491,723	68,844	-
	TOTAL	\$13,450,176	\$429,518	-	\$12,103,877	\$528,150	-
Warren	TOTAL	\$90,785,542	\$3,416,300	\$12,472,122	\$87,698,111	\$4,834,907	\$15,449,917
	Fixed Assets	256,549	-	-	188,874	-	-
	Operational	4,981,669	202,585	8,906,280	4,206,112	202,156	8,382,498
	Personnel	6,553,161	130,809	135,446	6,404,523	22,827	84,110
	TOTAL	\$11,791,409	\$333,394	\$9,041,726	\$10,799,508	\$224,983	\$8,466,609
Grand Total							
District 2 Office	TOTAL	\$90,785,542	\$3,416,300	\$12,472,122	\$87,698,111	\$4,834,907	\$15,449,917
	Fixed Assets	590,227	-	-	110,116	-	-
	Operational	342,302	599,806	-	593,581	21,443	-
	Personnel	4,816,661	1,285,323	-	4,911,679	188,111	-
	TOTAL	\$5,749,190	\$1,885,129	-	\$5,615,376	\$209,553	-
Cameron	TOTAL	\$2,228,174	\$191,201	-	\$2,112,185	-\$8,966	-
	Fixed Assets	-	-	-	15,530	-	-
	Operational	658,810	138,554	-	526,372	-13,414	-
	Personnel	1,569,365	52,647	-	1,570,282	4,448	-
	TOTAL	\$2,228,174	\$191,201	-	\$2,112,185	-\$8,966	-
Centre	TOTAL	\$20,410	\$622,528	\$2,672,403	\$5,755,364	\$618,143	\$3,822,131
	Fixed Assets	20,410	-	-	47,916	-	-
	Operational	7,498,050	622,528	2,672,403	5,755,364	618,143	3,822,131

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
Clearfield	Personnel	9,556,134	213,035	-	9,041,396	629,117	-
	TOTAL	\$17,074,594	\$835,563	\$2,672,403	\$14,844,677	\$1,247,261	\$3,822,131
	Fixed Assets	-	-	-	-	-	-
Clinton	Operational Personnel	9,765,598	528,833	4,006,930	5,933,793	341,222	3,616,486
	Operational Personnel	11,284,234	230,027	-	11,656,977	410,569	-
	TOTAL	\$21,049,832	\$758,860	\$4,006,9330	\$17,590,770	\$751,791	\$3,616,486
Elk	Fixed Assets	55,940	-	-	19,020	-	-
	Operational Personnel	4,300,854	180,705	-	2,340,872	824,066	-
	Operational Personnel	5,142,115	180,434	-	5,062,804	239,521	-
TOTAL	\$9,498,910	\$361,140	-	\$7,422,696	\$1,063,586	-	
Juniata	Fixed Assets	-	-	-	47,870	-	-
	Operational Personnel	3,366,908	72,063	1,734,606	2,841,258	48,469	3,897,202
	Operational Personnel	4,032,624	93,457	224	4,073,073	440,983	77,862
TOTAL	\$7,399,532	\$165,520	\$1,734,380	\$6,962,201	\$489,451	\$3,975,064	
McKean	Fixed Assets	-	-	-	28,990	-	-
	Operational Personnel	3,914,668	157,786	-	2,476,023	73,072	-
	Operational Personnel	4,664,122	94,252	-	4,582,558	46,196	-
TOTAL	\$8,578,790	\$252,038	-	\$7,087,571	\$119,268	-	
Mifflin	Fixed Assets	183,110	3,194	-	47,870	-	-
	Operational Personnel	2,838,516	265,476	5,293,647	2,989,894	123,988	4,452,171
	Operational Personnel	5,677,123	130,177	129,490	5,580,897	54,528	65,230
TOTAL	\$8,698,749	\$398,847	\$5,423,137	\$8,618,661	\$178,515	\$4,517,401	
Mifflin	Fixed Assets	21,465	-	-	19,020	-	-
	Operational Personnel	3,068,748	155,596	-	2,028,452	108,704	-
	Operational Personnel	3,831,716	86,153	-	4,005,709	23,472	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
Potter	TOTAL	\$6,921,929	\$241,749	-	\$6,053,181	\$132,176	-
	Fixed Assets	-	-	-	16,969	-	-
	Operational	3,732,590	141,906	10,505,373	3,734,954	114,911	9,683,430
	Personnel	6,318,985	120,021	222,609	6,302,727	223,175	132,054
	TOTAL	\$10,051,575	\$261,927	\$10,727,982	\$10,054,650	\$338,086	\$9,815,485
GRAND TOTAL		\$97,251,273	\$5,351,974	\$24,565,283	\$86,361,967	\$4,520,722	\$25,746,566
District 3 Office							
	Fixed Assets	199,744	-	-	199,052	-	-
	Operational	673,636	207,309	-	395,245	160,153	-
	Personnel	4,182,012	525,991	-	4,261,603	913,843	-
	TOTAL	\$5,055,392	\$733,299	-	\$4,855,899	\$1,073,996	-
Bradford							
	Fixed Assets	170,963	-	-	150,407	11,322	-
	Operational	6,090,759	316,754	4,479,620	7,757,487	-6,020,838	4,180,732
	Personnel	10,918,806	783,009	147,147	10,498,529	239,878	59,679
	TOTAL	\$17,180,529	\$1,099,763	\$4,626,768	\$18,406,423	-\$5,769,638	\$4,240,410
Columbia							
	Fixed Assets	149,748	-	-	157,757	-	-
	Operational	4,032,858	126,216	1,803,432	4,507,170	191,941	2,809,947
	Personnel	7,814,635	159,039	-	7,588,985	173,651	-
	TOTAL	\$11,997,240	\$285,255	\$1,803,432	\$12,253,912	\$365,591	\$2,809,947
Lycoming							
	Fixed Assets	253,615	298,328	-	168,592	24,537	-
	Operational	6,212,306	5,939,338	2,980,628	8,263,718	894,232	3,011,035
	Personnel	10,612,676	683,936	127,188	10,891,575	503,236	117,449
	TOTAL	\$17,078,597	\$6,651,602	\$3,107,816	\$19,323,885	\$1,422,004	\$3,128,484
Montour							
	Fixed Assets	-	-	-	-	-	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
Northumberland	Operational	1,470,061	103,066	244,894	894,734	212,122	988,161
	Personnel	3,010,040	102,923	-	2,919,207	71,302	-
	TOTAL	\$4,480,101	\$205,989	\$244,894	\$3,814,941	\$283,424	\$988,161
Snyder	Fixed Assets	202,286	-	-	161,686	-	-
	Operational	4,764,499	152,256	1,910,467	3,761,652	386,702	3,183,607
	Personnel	7,775,506	267,255	-	7,816,138	133,404	-
TOTAL	\$12,742,291	\$419,510	\$1,910,467	\$11,739,476	\$520,106	\$3,183,607	
Sullivan	Fixed Assets	6,765	-	-	34,900	-	-
	Operational	2,443,267	83,767	1,279,554	2,392,184	64,604	1,274,886
	Personnel	4,119,960	112,705	-	3,961,427	108,202	-
TOTAL	\$6,569,992	\$196,472	\$1,279,554	\$6,388,511	\$172,806	\$1,274,886	
Tioga	Fixed Assets	66,646	7,853	-	-	-	-
	Operational	1,269,525	997,247	953,188	1,601,954	1,255,021	2,597,281
	Personnel	3,576,937	1314,171	57,192	3,102,449	35,254	20,846
TOTAL	\$4,913,107	\$1,139,271	\$1,010,381	\$4,704,403	\$1,290,275	\$2,618,127	
Union	Fixed Assets	159,515	64,924	-	135,137	-	-
	Operational	6,216,140	425,711	4,689,589	5,257,076	-109,013	5,195,014
	Personnel	9,175,986	164,623	78,893	9,055,679	142,332,	58,617
TOTAL	\$15,551,641	\$655,258	\$4,768,482	\$14,447,892	\$33,318	\$5,253,631	
GRAND TOTAL	Fixed Assets	14,784	-	-	-	-	-
	Operational	2,100,561	221,417	1,186,685	2,103,663	205,608	1,095,013
	Personnel	4,017,081	149,879	-	3,801,594	167,990	-
TOTAL	\$6,132,425	\$371,296	\$1,186,685	\$5,905,257	\$373,597	\$1,095,013	
GRAND TOTAL	\$101,701,315	\$11,757,716	\$19,938,478	\$101,840,599	-\$234,520	\$24,592,266	

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18		FY 2018-19	
		Base	Non-Base	Base	Non-Base
		409	409	409	409
District 4 Office					
	Fixed Assets	34,738	-	116,263	-
	Operational	715,027	724,678	847,801	32,218
	Personnel	5,681,873	250,474	5,886,688	226,813
	TOTAL	\$6,431,638	\$975,152	\$6,850,752	\$259,030
Lackawanna					
	Fixed Assets	231,399	-	291,647	-
	Operational	9,329,661	959,836	10,879,531	623,999
	Personnel	11,401,554	130,115	11,412,464	197,329
	TOTAL	\$20,962,614	\$1,089,950	\$22,583,641	\$821,328
					\$178,740
					\$178,740
Luzerne					
	Fixed Assets	250,870	-	275,969	-
	Operational	13,296,065	1,401,604	12,486,137	1,276,206
	Personnel	13,622,059	206,567	13,919,184	142,389
	TOTAL	\$27,168,995	\$1,608,171	\$26,681,290	\$1,418,595
Pike					
	Fixed Assets	109,459	-	295,119	-
	Operational	4,567,581	369,518	3,920,302	273,421
	Personnel	5,682,393	299,745	5,398,165	44,572
	TOTAL	\$10,359,434	\$669,263	\$9,613,586	\$317,993
					\$4,402,047
					\$1,566
					\$4,483,613
Susquehanna					
	Fixed Assets	253,184	-	179,054	-
	Operational	9,893,391	561,335	6,590,348	-1,897,120
	Personnel	11,015,811	233,282	9,472,525	150,447
	TOTAL	\$21,162,385	\$794,617	\$16,241,927	\$1,727,652
					\$5,098,847
Wayne					
	Fixed Assets	90,645	-	117,758	-
	Operational	5,916,204	250,872	3,995,366	376,487
					4,829,948

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
Wyoming							
	Personnel	8,542,899	60,967	42,451	8,706,854	668,755	58,883
	TOTAL	\$14,549,749	\$311,839	\$2,384,112	\$12,819,978	\$1,045,242	\$4,888,832
	Fixed Assets	129,698	-	-	70,312	-	-
	Operational Personnel	2,482,377	391,348	1,904,993	1,662,921	137,283	2,383,771
	TOTAL	\$7,930,084	\$485,772	\$1,904,993	\$6,705,265	\$215,900	\$2,383,771
	GRAND TOTAL	\$108,564,898	\$5,934,764	\$10,581,099	\$101,496,439	\$2,350,436	\$17,033,803
District 5 Office							
	Fixed Assets	501,049	-	-	105,749	-	-
	Operational Personnel	854,580	1,686,591	-	671,865	1,120,920	-
	TOTAL	\$6,992,477	\$2,495,017	-	\$6,278,337	\$1,894,408	-
	Fixed Assets	660,371	-	-	335,821	-	-
	Operational Personnel	12,223,630	2,705,707	-	11,577,950	1,403,754	-
	TOTAL	\$22,543,643	\$3,020,831	-	\$21,794,771	1,710,504	-
Carbon							
	Fixed Assets	112,282	-	-	186,044	-	-
	Operational Personnel	3,243,625	343,650	-	2,993,140	172,743	-
	TOTAL	\$8,406,574	\$394,287	-	\$8,618,981	\$209,131	-
Lehigh							
	Fixed Assets	211,487	-	-	344,795	-	-
	Operational Personnel	7,485,757	1,406,334	-	5,223,114	1,127,190	-
	TOTAL	\$16,368,472	\$1,581,756	-	\$14,186,047	\$1,511,010	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18		FY 2018-19	
		Base	Non-Base	Base	Non-Base
Monroe			409		409
	Fixed Assets	160,004	-	164,670	-
	Operational	7,227,252	983,351	6,760,742	558,303
	Personnel	9,420,593	304,849	9,054,246	260,409
	TOTAL	\$16,807,89	\$1,288,200	\$15,979,658	\$818,712
			\$4,458,262		\$3,793,972
Northampton					
	Fixed Assets	177,494	-	106,935	-
	Operational	6,650,105	1,047,224	6,619,735	575,280
	Personnel	8,763,528	161,806	8,604,840	359,539
	TOTAL	\$15,591,126	\$1,209,030	\$15,331,509	\$934,819
Schuylkill					
	Fixed Assets	143,428	-	170,593	1,038
	Operational	8,811,534	902,471	6,765,781	817,343
	Personnel	10,681,104	65,799	9,751,483	1,165,311
	TOTAL	\$19,636,066	\$968,269	\$16,687,858	\$1,983,692
GRAND TOTAL		\$106,346,208	\$10,957,390	\$98,877,160	\$9,062,275
			\$4,458,262		\$3,793,972
District 6 Office					
	Fixed Assets	162,634	-	-	-
	Operational	347,153	3,095,324	360,982	17,734
	Personnel	8,232,158	821,527	8,751,696	61,129
	TOTAL	\$8,741,945	\$3,916,852	\$9,112,678	\$78,863
Bucks					
	Fixed Assets	145,522	-	10,314	-
	Operational	19,833,329	1,838,683	17,142,985	3,082,034
	Personnel	11,203,791	319,959	10,959,241	338,683
	TOTAL	\$31,182,642	\$2,158,642	\$28,112,539	\$3,420,718
			\$9,048,941		\$9,768,225
Chester					
	Fixed Assets	82,856	-	17,118	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
Delaware							
	Operational	18,749,034	2,754,112	5,059,792	15,680,120	3,154,255	6,514,880
	Personnel	12,058,027	180,033	-	12,356,109	190,287	-
	TOTAL	\$30,889,916	\$2,934,145	\$5,059,792	\$28,053,347	\$3,344,542	\$6,514,880
	Fixed Assets	72,021	-	-	67,951	-	-
	Operational	14,217,426	2,146,299	3,830,767	8,242,166	2,849,100	4,986,784
	Personnel	7,100,221	202,211	-	7,196,829	159,702	-
	TOTAL	\$21,389,668	\$2,348,510	\$3,830,767	\$15,506,946	\$3,008,803	\$4,986,784
Montgomery							
	Fixed Assets	94,018	-	-	138,563	-	-
	Operational	16,928,365	3,975,433	2,879,191	13,681,908	5,057,412	4,602,808
	Personnel	10,700,026	171,789	-	10,929,444	277,117	-
	TOTAL	\$27,722,408	\$4,147,222	\$2,879,191	\$24,749,916	\$5,334,530	\$4,602,808
Philadelphia							
	Fixed Assets	125,685	-	-	327,787	-	-
	Operational	19,722,383	3,111,262	4,737,208	16,938,211	4,705,393	16,140,826
	Personnel	6,926,951	76,288	-	7,122,343	124,902	-
	TOTAL	\$26,775,019	\$3,187,550	\$4,737,208	\$24,388,341	\$4,830,295	\$16,140,826
	GRAND TOTAL	\$146,701,598	\$18,692,921	\$25,555,899	\$129,923,768	\$20,017,750	\$42,013,523
District 8 Office							
	Fixed Assets	60,678	-	-	-	15,286	-
	Operational	534,552	2,654,210	-	435,939	1,828,044	-
	Personnel	5,662,289	1,292,130	-	5,834,995	227,860	-
	TOTAL	\$6,257,519	\$3,946,341	-	\$6,270,934	\$2,071,189	-
Adams							
	Fixed Assets	177,548	-	-	204,416	-	-
	Operational	3,729,694	163,457	-	4,025,771	459,384	-
	Personnel	6,960,196	314,002	-	7,167,418	139,912	-
	TOTAL	\$10,867,438	\$477,459	-	\$11,397,605	\$599,296	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18		FY 2018-19	
		Base	Non-Base	Base	Non-Base
Cumberland					
	Fixed Assets	350,561	-	133,802	-
	Operational	6,665,618	811,118	6,250,252	831,545
	Personnel	9,438,669	310,416	9,310,316	396,504
	TOTAL	\$16,454,848	\$1,121,534	\$15,694,370	\$1,228,049
Dauphin					
	Fixed Assets	255,830	-	298,056	-
	Operational	7,024,707	557,408	7,379,258	2,637,917
	Personnel	9,521,340	314,307	9,404,082	731,141
	TOTAL	\$16,801,878	\$871,715	\$17,081,396	\$3,369,058
Franklin					
	Fixed Assets	577,407	-	210,094	-
	Operational	6,063,984	1,206,000	5,559,749	513,417
	Personnel	7,512,473	494,317	8,103,821	215,301
	TOTAL	\$14,153,865	\$1,700,317	\$13,873,664	\$728,718
Lancaster					
	Fixed Assets	1,474,954	-	886,830	-
	Operational	8,880,257	3,298,658	8,561,367	3,258,571
	Personnel	12,794,147	481,695	12,380,851	482,676
	TOTAL	\$23,149,358	\$3,780,352	\$21,829,048	\$3,741,247
Lebanon					
	Fixed Assets	214,961	-	122,997	-
	Operational	3,414,225	318,075	2,719,796	478,006
	Personnel	5,974,073	279,414	5,662,373	266,282
	TOTAL	\$9,603,259	\$597,489	\$8,505,165	\$744,288
Perry					
	Fixed Assets	288,261	90,578	152,042	9,579
	Operational	4,048,046	138,512	3,639,281	98,595
	Personnel	6,307,692	63,938	6,375,707	146,555
	TOTAL	\$10,643,999	\$293,028	\$10,167,031	\$254,728

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18		FY 2018-19	
		Base	Non-Base	Base	Non-Base
York			409		409
	Fixed Assets	1,755,034	-	990,054	2,637
	Operational	9,819,000	2,764,883	10,020,965	280,668
	Personnel	13,889,195	382,835	13,246,698	1,267,873
	TOTAL	\$25,463,228	\$3,147,718	\$24,257,716	\$1,551,178
	GRAND TOTAL	\$133,395,390	\$15,935,952	\$129,076,930	\$14,287,752
					\$4,780,509
					\$4,780,509
					\$10,332,156
District 9 Office					
	Fixed Assets	458,471	-	109,952	-
	Operational	363,199	305,846	367,835	32,618
	Personnel	5,503,127	255,087	5,600,986	278,595
	TOTAL	\$6,324,796	\$560,933	\$6,078,773	\$311,212
Bedford					
	Fixed Assets	353,257	-	327,702	29,105
	Operational	3,797,372	174,853	5,849,145	329,187
	Personnel	9,821,271	314,876	10,253,064	225,541
	TOTAL	\$13,971,900	\$489,728	\$16,429,911	\$583,833
Blair					
	Fixed Assets	463,165	-	270,332	-
	Operational	4,134,805	608,049	2,746,873	1,151,278
	Personnel	7,123,167	111,580	7,058,589	313,990
	TOTAL	\$11,721,137	\$719,629	\$10,075,794	\$1,465,268
Cambria					
	Fixed Assets	400,703	97,848	255,889	152,411
	Operational	6,290,091	1,116,009	6,223,293	2,011,152
	Personnel	10,146,187	252,577	10,654,605	312,872
	TOTAL	\$16,836,981	\$1,466,434	\$17,133,787	\$2,476,435
					\$5,738,404
Fulton					
	Fixed Assets	36,620	-	75,121	-
	Operational	2,087,948	291,657	1,044,336	233,706
					1,446,783

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18		FY 2018-19	
		Base	Non-Base	Base	Non-Base
Clarion			409		409
	Fixed Assets	79,940	-	-	-
	Operational	5,056,301	427,795	5,047,809	313,289
	Personnel	7,072,331	155,988	7,136,450	186,045
	TOTAL	\$12,208,572	\$583,783	\$12,184,259	\$499,335
			\$2,173,494		\$2,481,807
Indiana					
	Fixed Assets	45,586	-	147,549	-
	Operational	7,176,605	342,759	7,180,990	502,944
	Personnel	9,820,408	562,844	10,018,180	635,223
	TOTAL	\$17,042,599	\$905,603	\$17,346,719	\$1,138,167
			\$2,295,093		\$5,174,599
Jefferson					
	Fixed Assets	44,230	-	224,285	-
	Operational	4,959,299	231,620	6,542,711	334,169
	Personnel	7,373,871	96,074	7,549,237	114,810
	TOTAL	\$12,377,400	\$327,694	\$14,316,233	\$448,978
		\$80,741,959	\$3,912,330	\$85,757,461	\$4,739,675
GRAND TOTAL			\$18,640,194		\$21,273,588
			\$1,083,734		\$5,391,015
District 11 Office					
	Fixed Assets	-	-	24,847	-
	Operational	884,337	849,524	790,406	21,154
	Personnel	6,091,410	1,784,034	6,167,316	324,462
	TOTAL	\$6,975,747	\$2,633,558	\$6,982,569	\$345,616
Allegheny					
	Fixed Assets	687,499	200,651	431,365	688,974
	Operational	36,350,800	18,041,860	35,602,241	10,917,710
	Personnel	19,935,032	1,528,701	20,677,592	1,437,264
	TOTAL	\$56,973,331	\$19,771,212	\$56,711,197	\$13,043,948
Beaver					
	Fixed Assets	-	3,211	126,372	14,318

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
	Operational Personnel	9,194,449	7,443,064	916,977	7,284,671	6,213,770	3,701,518
		8,764,764	641,977	-	8,606,867	707,044	-
	TOTAL	\$17,959,213	\$8,088,252	\$916,977	\$16,017,911	\$6,935,132	\$3,701,518
Lawrence							
	Fixed Assets	17,634	-	-	62,929	-	-
	Operational Personnel	9,051,189	3,912,554	784,930	5,900,681	11,266,662	2,480,238
		5,737,914	519,463	-	5,717,044	545,129	-
	TOTAL	\$14,806,736	\$4,432,017	\$784,930	\$11,680,655	\$11,811,791	\$2,480,238
Tunnel Maintenance							
	Fixed Assets	-	-	-	39,107	-	-
	Operational Personnel	1,172,043	16,050	-	1,207,084	742	-
		6,319,255	2,509	-	6,596,144	-	-
	TOTAL	\$7,491,298	\$18,559	-	\$7,842,335	\$742	-
GRAND TOTAL		\$104,206,326	\$34,943,598	\$1,701,907	\$99,234,667	\$32,137,229	\$6,181,756
District 12 Office							
	Fixed Assets	42,083	-	-	43,606	-	-
	Operational Personnel	315,919	311,627	-	375,011	399,193	51
		4,570,568	89,783	-	4,485,284	149,250	-
	TOTAL	\$4,928,570	\$401,410	-	\$4,903,901	\$548,443	\$51
Fayette							
	Fixed Assets	14,655	-	-	-	-	-
	Operational Personnel	8,457,282	211,442	-	8,511,100	-414,879	-
		9,601,610	612,439	-	10,291,966	319,898	-
	TOTAL	\$18,073,548	\$823,880	-	\$18,803,066	-\$94,981	-
Greene							
	Fixed Assets	9,006	-	-	71,849	-	-
	Operational Personnel	3,824,090	283,602	5,654,513	5,498,937	-243,871	3,264,978

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2017-18			FY 2018-19		
		Base	Non-Base	409	Base	Non-Base	409
	Personnel	7,474,153	235,222	58,081	7,492,089	211,440	19,539
	TOTAL	\$11,307,248	\$518,825	\$5,712,594	\$13,062,875	-\$32,431	\$3,284,517
Washington	Fixed Assets	69,213	-	-	-	-	-
	Operational	14,864,229	1,758,177	6,663,433	15,907,565	-1,892,883	10,478,170
	Personnel	13,606,579	546,013	60,794	14,085,425	314,120	118,295
	TOTAL	\$28,540,022	\$2,304,190	\$6,724,227	\$29,992,989	-\$1,578,762	\$10,596,465
Westmoreland	Fixed Assets	6,268	-	-	81,116	-	-
	Operational	13,966,253	1,236,962	-	17,212,282	1,122,627	-
	Personnel	16,366,906	490,989	125,893	16,637,584	335,756	74,607
	TOTAL	\$30,339,427	\$5,776,257	\$125,893	\$33,930,983	\$1,458,383	\$74,607
GRAND TOTAL		\$93,188,816	\$5,776,257	\$12,562,714	\$100,693,814	\$300,652	\$13,955,639

Engineering District / CMO	Expenditure	FY 2019-20			FY 2020-21		
		Base	Non-Base	409	Base	Non-Base	409
District 1 Office	Fixed Assets	\$311,971	-	-	\$85,756	-	-
	Operational	252,836	7,653	-	190,127	471	-
	Personnel	4,252,885	190,232	7,298	4,237,776	-45,431	-7,737
	TOTAL	\$4,817,691	\$197,885	\$7,298	\$4,513,659	-\$44,960	-\$7,737
Crawford	Fixed Assets	293,342	-	-	52,662	-	-
	Operational	6,040,890	5,737,235	4,115,601	3,534,300	288,363	3,328,653
	Personnel	10,615,365	280,073	130,696	10,337,509	88,041	164,472
	TOTAL	\$16,949,597	\$6,017,308	\$4,246,297	\$13,924,472	\$376,403	\$3,493,125

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
Erie			409		409
	Fixed Assets	327,106	-	412,266	-
	Operational	7,959,822	903,176	7,318,111	277,340
	Personnel	95,737	-	11,357,072	53,293
	TOTAL	\$20,031,277	\$998,913	\$19,087,449	\$330,633
Forest					
	Fixed Assets	96,298	-	-	-
	Operational	1,257,648	17,439	912,568	19,371
	Personnel	2,561,395	4,698	2,562,782	11,091
	TOTAL	\$3,915,341	\$22,138	\$3,475,350	\$30,462
Mercer					
	Fixed Assets	142,789	-	184,023	-
	Operational	4,754,381	711,645	3,596,506	139,708
	Personnel	10,614,848	72,646	10,408,203	94,504
	TOTAL	\$15,512,017	\$784,291	\$14,188,732	\$234,212
Venango					
	Fixed Assets	122,737	-	-	-
	Operational	5,584,525	293,186	3,479,293	250,301
	Personnel	7,441,669	203,225	7,050,315	86,180
	TOTAL	\$13,148,932	\$496,411	\$10,529,608	\$336,482
Warren					
	Fixed Assets	289,763	-	417,913	-
	Operational	4,442,890	233,619	3,285,048	64,974
	Personnel	6,324,969	96,120	6,197,404	40,230
	TOTAL	\$11,057,622	\$329,739	\$9,900,365	\$105,204
Grand Total		\$85,432,477	\$8,846,685	\$75,619,636	\$1,368,437
District 2 Office					
	Fixed Assets	307,234	-	32,076	-
	Operational	193,718	642	30,706	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20			FY 2020-21		
		Base	Non-Base	409	Base	Non-Base	409
	Personnel	5,083,308	73,600	-	4,970,405	78,367	-
	TOTAL	\$5,584,261	\$74,242	-	\$5,033,187	\$78,367	-
Cameron							
	Fixed Assets	-	-	-	-	-	-
	Operational	432,073	22,692	-	417,935	5,066	-
	Personnel	1,370,884	13,442	-	1,475,078	3,541	-
	TOTAL	\$1,802,958	\$36,134	-	\$1,893,013	\$8,607	-
Centre							
	Fixed Assets	40,874	-	-	16,876	-	-
	Operational	4,123,265	246,035	4,813,056	3,984,405	2,831,798	2,940,828
	Personnel	8,696,527	255,775	-	8,857,072	316,112	-
	TOTAL	\$12,860,665	\$501,810	\$4,813,056	\$12,858,353	\$3,147,909	\$2,940,828
Clearfield							
	Fixed Assets	146,545	-	-	-	-	-
	Operational	5,045,428	152,214	5,004,242	3,428,980	402,973	3,513,475
	Personnel	11,574,848	134,303	-	11,231,749	146,545	-
	TOTAL	\$16,766,821	\$286,517	\$5,004,242	\$14,660,729	\$549,518	\$3,513,475
Clinton							
	Fixed Assets	23,564	-	-	9,525	-	-
	Operational	2,111,026	28,502	-	2,105,941	50,907	-
	Personnel	4,739,470	113,069	-	5,088,748	121,141	-
	TOTAL	\$6,874,059	\$141,571	-	\$7,204,215	\$172,048	-
Elk							
	Fixed Assets	10,998	-	-	-	-	-
	Operational	1,771,305	60,660	2,248,004	1,357,156	21,941	1,456,224
	Personnel	3,915,189	22,210	-4	3,954,033	13,244	12,039
	TOTAL	\$5,697,492	\$82,870	\$2,248,000	\$5,311,189	\$35,185	\$1,468,263
Juniata							
	Fixed Assets	156,082	9,859	-	18,751	201	-
	Operational	1,618,180	330,629	-	1,440,231	974,172	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
Columbia			409		409
	Fixed Assets	161,891	-	101,380	-
	Operational	2,790,024	370,758	2,150,951	255,942
	Personnel	7,940,919	136,103	8,181,248	66,875
	TOTAL	\$10,892,833	\$506,861	\$10,433,579	\$322,817
			\$2,925,130		\$1,096,925
Lycoming					
	Fixed Assets	162,736	3,940	80,245	-
	Operational	5,664,865	1,501,776	4,155,757	329,278
	Personnel	10,866,585	302,449	10,879,924	212,877
	TOTAL	\$16,694,186	\$1,808,165	\$15,115,926	\$542,155
			\$4,579,542		\$4,619,955
Montour					
	Fixed Assets	-	-	-	-
	Operational	895,052	111,096	915,942	40,375
	Personnel	2,972,279	46,778	3,155,879	29,881
	TOTAL	\$3,867,331	\$157,874	\$4,071,822	\$70,255
			\$1,051,844		\$670,900
Northumberland					
	Fixed Assets	208,725	-	-	-
	Operational	3,671,961	339,659	4,061,051	191,879
	Personnel	7,913,439	136,024	8,169,559	63,666
	TOTAL	\$7,913,439	\$475,683	\$12,230,610	\$255,546
			\$3,162,858		\$1,824,560
Snyder					
	Fixed Assets	61,066	-	45,933	-
	Operational	1,630,833	157,954	1,733,442	107,827
	Personnel	4,164,699	79,348	4,376,897	59,750
	TOTAL	\$5,856,598	\$237,302	\$6,156,272	\$167,577
			\$1,293,411		\$1,225,307
Sullivan					
	Fixed Assets	40,762	-	-	-
	Operational	1,094,919	345,074	1,167,947	49,877
	Personnel	3,456,572	139,207	3,398,848	67,365
	TOTAL	\$4,592,254	\$484,281	\$4,566,796	\$117,242
			\$1,260,960		\$1,770,254

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
Tioga			409		409
	Fixed Assets	122,239	-	67,482	14,241
	Operational	5,081,477	877,637	4,766,225	274,528
	Personnel	9,109,859	166,897	8,633,601	209,914
	TOTAL	\$14,313,575	\$1,044,534	\$13,467,308	\$498,684
			\$3,271,959		\$4,148,603
Union					
	Fixed Assets	71,385	-	45,933	-
	Operational	1,553,201	136,956	1,836,206	81,887
	Personnel	3,940,280	105,141	4,224,246	66,963
	TOTAL	\$5,564,867	\$242,097	\$6,106,385	\$148,850
		\$95,822,766	\$14,205,122	\$92,061,772	\$3,328,945
	GRAND TOTAL		\$23,790,800		\$21,972,135
District 4 Office					
	Fixed Assets	151,313	-	-	-
	Operational	634,875	364	557,081	-
	Personnel	6,121,973	153,170	5,924,180	181,778
	TOTAL	\$6,908,161	\$153,534	\$6,481,261	\$181,778
Lackawanna					
	Fixed Assets	37,044	-	62,213	-
	Operational	8,521,869	1,131,429	5,310,624	605,894
	Personnel	10,744,099	2,207,849	11,228,728	241,786
	TOTAL	\$19,303,013	\$3,339,278	\$16,601,565	\$847,680
			\$186,301		\$251,490
Luzerne					
	Fixed Assets	-100	-	337,390	-
	Operational	10,560,970	1,172,364	6,164,160	868,988
	Personnel	13,632,526	75,986	13,920,966	90,806
	TOTAL	\$24,193,386	\$1,248,350	\$20,422,517	\$959,793
Pike					
	Fixed Assets	-	-	111,799	-
	Operational	3,720,541	279,645	2,336,877	224,208
			2,915,208		1,439,837

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20			FY 2020-21		
		Base	Non-Base	409	Base	Non-Base	409
Susquehanna	Personnel	5,471,932	16,572	63,647	5,557,938	36,055	77,125
	TOTAL	\$9,192,473	\$296,217	\$2,978,855	\$8,006,614	\$260,263	\$1,516,962
	Fixed Assets	-	9,834	-	123,210	27,084	-
Wayne	Operational Personnel	8,492,899	3,474,021	4,262,895	3,478,205	1,856,569	3,971,765
	Operational Personnel	10,567,105	135,212	132,038	10,066,052	272,998	127,988
	TOTAL	\$19,060,004	\$3,619,067	\$4,394,933	\$13,667,468	\$2,156,652	\$4,099,754
Wyoming	Fixed Assets	-	-	-	35,578	-	-
	Operational Personnel	3,884,008	182,218	4,233,633	3,314,661	304,454	2,331,297
	Operational Personnel	9,290,068	145,547	34,524	8,319,378	490,685	46,919
TOTAL	\$13,174,076	\$330,765	\$4,268,156	\$11,669,617	\$795,139	\$2,378,217	
District 5 Office	Fixed Assets	-	-	-	70,859	-	-
	Operational Personnel	2,726,090	337,690	2,155,089	1,420,752	364,064	1,282,563
	Operational Personnel	5,038,479	122,872	-	5,060,348	106,100	-
TOTAL	\$7,764,570	\$460,562	\$2,155,089	\$6,551,959	\$470,164	\$1,282,563	
GRAND TOTAL	\$99,595,682	\$9,447,772	\$13,983,334	\$83,401,000	\$5,671,469	\$9,528,985	
Berks	Fixed Assets	25,648	-	-	2,852	-	-
	Operational Personnel	666,311	1,208,417	-	516,527	1,142,129	-
	Operational Personnel	5,581,756	812,218	-	5,450,593	389,308	-
TOTAL	\$6,273,715	\$2,020,635	-	\$5,969,973	\$1,531,437	-	
Berks	Fixed Assets	635,249	-	-	256,732	-	-
	Operational Personnel	6,612,865	2,178,957	-	3,519,065	2,400,882	-
	Operational Personnel	9,184,177	389,320	-	9,154,836	566,485	-
TOTAL	\$16,432,290	\$2,568,277	-	\$12,930,634	\$2,967,367	-	

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
Carbon			409		409
	Fixed Assets	85,408	-	-	-
	Operational	1,704,981	236,726	929,258	316,813
	Personnel	5,199,049	24,692	5,076,212	146,597
	TOTAL	\$6,989,438	\$261,418	\$6,005,469	\$463,510
Lehigh					
	Fixed Assets	261,976	-	-	-
	Operational	4,641,776	1,454,113	1,965,494	1,530,862
	Personnel	8,508,384	163,185	8,382,180	274,623
	TOTAL	\$13,412,135	\$1,617,298	\$10,347,673	\$1,805,485
Monroe					
	Fixed Assets	191,760	9,517	65,100	-
	Operational	5,563,184	1,070,859	2,632,417	1,080,761
	Personnel	9,105,527	226,813	8,816,981	401,974
	TOTAL	\$14,860,471	\$1,307,190	\$11,514,498	\$1,482,734
Northampton					
	Fixed Assets	194,015	2,163	-	6,000
	Operational	4,214,970	1,029,824	1,292,256	1,311,796
	Personnel	8,335,417	162,478	8,502,026	329,961
	TOTAL	\$12,744,401	\$1,194,466	\$9,794,282	\$1,646,757
Schuylkill					
	Fixed Assets	183,076	2,759	99,941	-
	Operational	5,515,744	1,159,802	2,822,961	1,004,511
	Personnel	10,203,649	117,212	10,449,710	88,719
	TOTAL	\$15,902,469	\$1,279,773	\$13,372,612	\$1,093,231
GRAND TOTAL		\$86,614,919	\$10,249,056	\$69,935,141	\$10,990,522
District 6 Office					
	Fixed Assets	100,971	-	32,684	-
	Operational	336,156	19,876	281,084	10,427

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20			FY 2020-21		
		Base	Non-Base	409	Base	Non-Base	409
	Personnel	8,996,153	25,255	-	8,476,214	28,154	-
	TOTAL	\$9,433,280	\$45,132	-	\$8,789,981	\$38,581	-
Bucks							
	Fixed Assets	134,300	-	-	144,379	-	-
	Operational	11,294,135	2,743,447	10,113,284	10,670,167	2,555,155	6,197,398
	Personnel	9,504,348	204,537	-	9,432,082	266,833	-
	TOTAL	\$20,932,783	\$2,947,984	\$10,113,284	\$20,246,627	\$2,821,988	\$6,197,398
Chester							
	Fixed Assets	118,925	-	-	13,417	-	-
	Operational	8,953,873	1,690,025	11,130,321	8,746,129	2,400,295	5,119,631
	Personnel	10,831,546	89,605	-	11,151,659	43,059	-
	TOTAL	\$19,904,345	\$1,779,630	\$11,130,321	\$19,911,205	\$2,443,354	\$5,119,631
Delaware							
	Fixed Assets	138,046	-	-	61,452	-	-
	Operational	6,879,703	2,487,228	13,128,343	6,892,262	2,343,074	6,272,538
	Personnel	6,191,804	40,824	-	6,157,776	171,079	-
	TOTAL	\$13,209,552	\$2,528,052	\$13,128,343	\$13,111,490	\$2,514,153	\$6,272,538
Montgomery							
	Fixed Assets	177,948	-	-	144,379	-	-
	Operational	8,800,606	9,864,393	10,558,423	10,677,603	10,968,472	12,471,033
	Personnel	9,856,044	278,393	-	9,769,116	526,810	-
	TOTAL	\$18,834,598	\$10,142,786	\$10,558,423	\$20,591,097	\$11,495,282	\$12,471,033
Philadelphia							
	Fixed Assets	53,429	-	-	209,189	-	-
	Operational	15,987,702	3,484,600	14,408,036	12,701,090	3,735,835	6,306,443
	Personnel	6,262,062	101,393	-	5,742,664	99,340	-
	TOTAL	\$22,303,194	\$3,585,994	\$14,408,036	\$18,652,944	\$3,835,174	\$6,306,443
GRAND TOTAL		\$106,617,751	\$21,029,577	\$59,338,406	\$101,303,345	\$23,148,533	\$36,367,043

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
District 8 Office			409		409
	Fixed Assets	60,389	2,963	-	-
	Operational	414,695	1,553,099	281,816	963,603
	Personnel	5,741,426	218,497	5,439,608	281,794
	TOTAL	\$6,216,509	\$1,774,559	5,721,424	1,245,397
Adams					
	Fixed Assets	148,212	-	369,563	-
	Operational	2,694,585	275,603	1,896,783	459,269
	Personnel	6,845,704	70,723	6,933,316	82,915
	TOTAL	\$9,688,501	\$346,326	\$9,199,661	\$542,185
Cumberland					
	Fixed Assets	49,898	-	168,373	-
	Operational	4,156,138	735,748	5,397,954	752,539
	Personnel	9,073,858	183,984	9,386,417	113,068
	TOTAL	\$13,279,893	\$919,732	\$14,952,744	\$865,607
			\$5,348,327		\$3,023,472
Dauphin					
	Fixed Assets	105,608	-	282,740	-
	Operational	5,794,795	568,639	4,285,457	1,089,556
	Personnel	9,027,480	156,604	9,010,622	77,645
	TOTAL	\$14,927,883	\$725,244	\$13,578,819	\$1,167,201
Franklin					
	Fixed Assets	143,226	-	167,697	-
	Operational	3,336,609	471,363	3,675,576	581,982
	Personnel	7,256,571	299,393	7,916,844	202,272
	TOTAL	\$10,736,407	\$770,757	\$11,760,117	\$784,254
Lancaster					
	Fixed Assets	182,484	-	566,569	-
	Operational	6,761,810	1,899,728	5,351,914	1,308,776
	Personnel	11,541,443	312,440	11,509,903	133,760
	TOTAL	\$18,485,738	\$2,212,168	\$17,428,386	\$1,442,536

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
Lebanon			409		409
	Fixed Assets	-	-	-	-
	Operational	2,281,536	3,026,638	970,420	1,040,861
	Personnel	5,616,863	241,194	5,789,444	108,326
	TOTAL	\$7,898,399	\$3,267,832	\$6,759,864	\$1,149,187
Perry					
	Fixed Assets	9,299	-	77,926	-
	Operational	2,674,861	191,575	1,399,625	285,929
	Personnel	5,961,667	47,471	6,177,110	34,310
	TOTAL	\$8,645,827	\$239,047	\$7,654,661	\$320,239
York					
	Fixed Assets	333,042	4,482	704,135	2,389
	Operational	8,517,032	1,161,465	5,626,083	1,515,911
	Personnel	12,833,840	196,822	13,250,436	109,819
	TOTAL	\$21,683,915	\$1,362,769	\$19,580,654	\$1,628,118
GRAND TOTAL		\$111,563,072	\$11,618,433	\$106,636,330	\$9,144,724
					\$6,028,463
					\$9,051,935
District 9 Office					
	Fixed Assets	204,100	-	139,378	-
	Operational	358,900	51,475	264,714	46,305
	Personnel	5,268,563	270,924	4,967,591	116,829
	TOTAL	\$5,831,564	\$322,399	\$5,371,684	\$163,134
Bedford					
	Fixed Assets	271,720	-	273,977	-
	Operational	3,854,588	325,143	4,277,562	1,008,964
	Personnel	9,459,527	206,107	9,760,437	116,337
	TOTAL	\$13,585,835	\$531,251	\$14,311,975	\$1,125,302
Blair					
	Fixed Assets	185,330	-	12,490	1,486
	Operational	3,127,216	557,322	1,574,184	560,131

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20			FY 2020-21		
		Base	Non-Base	409	Base	Non-Base	409
	Personnel	7,127,532	54,222	-	7,259,628	54,642	-
	TOTAL	\$10,440,077	\$611,544	-	\$8,846,303	\$616,258	-
Cambria							
	Fixed Assets	149,999	-133	-	-	2,030	-
	Operational	5,732,007	1,034,376	4,119,775	3,390,384	381,158	2,211,068
	Personnel	10,092,295	155,342	32,775	10,343,279	88,115	148,680
	TOTAL	\$15,974,301	\$1,189,584	\$4,152,549	\$13,733,663	\$471,303	\$2,359,748
Fulton							
	Fixed Assets	-	-	-	-	-	-
	Operational	1,069,389	321,367	1,291,523	658,479	236,177	831,000
	Personnel	5,792,769	106,684	-	5,940,782	46,406	-
	TOTAL	\$6,862,157	\$428,051	\$1,291,523	\$6,599,261	\$282,583	\$831,000
Huntingdon							
	Fixed Assets	68,663	-	-	24,981	-	-
	Operational	2,650,488	174,603	-	2,255,818	60,000	-
	Personnel	8,011,760	98,149	-	7,821,293	62,450	-
	TOTAL	\$10,730,912	\$272,752	-	\$10,102,091	\$122,450	-
Somerset							
	Fixed Assets	324,945	-	-	64,800	-	-
	Operational	6,610,669	1,671,626	3,680,656	6,215,449	325,022	2,194,622
	Personnel	11,203,516	227,778	19,3635	11,526,317	73,243	61,090
	TOTAL	\$18,139,131	\$1,899,404	\$3,874,291	\$17,806,566	\$398,266	\$2,255,712
GRAND TOTAL		\$81,563,977	\$5,254,984	\$9,318,363	\$76,771,543	\$3,179,295	\$5,446,460
District 10 Office							
	Fixed Assets	-	-	-	-	-	-
	Operational	392,950	9,037	2,632	232,116	23,251	1,813
	Personnel	5,238,970	607,271	-	5,261,447	399,656	-
	TOTAL	\$5,631,920	\$616,309	\$2,632	\$5,493,562	\$422,907	\$1,813

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
Armstrong			409		409
	Fixed Assets	136,463	-	-	-
	Operational	6,905,587	280,390	3,262,770	319,356
	Personnel	8,809,889	72,403	8,565,354	106,111
	TOTAL	\$15,851,939	\$352,794	\$11,828,124	\$425,468
			\$4,632,568		\$4,073,368
Butler					
	Fixed Assets	137,374	-	468	-
	Operational	8,170,083	1,683,439	5,192,002	763,042
	Personnel	10,781,053	325,245	10,645,709	119,290
	TOTAL	\$19,088,509	\$2,008,684	\$15,838,178	\$882,332
			\$8,165,057		\$4,632,101
Clarion					
	Fixed Assets	57,795	-	-	-
	Operational	3,440,257	204,666	2,277,208	254,473
	Personnel	6,942,283	215,363	6,905,729	74,139
	TOTAL	\$10,440,336	\$420,029	\$9,182,937	\$328,612
			\$3,617,100		\$2,761,781
Indiana					
	Fixed Assets	1,210	-	-	-
	Operational	7,212,665	371,431	6,986,319	376,695
	Personnel	9,913,311	134,524	10,755,616	120,245
	TOTAL	\$17,127,186	\$505,955	\$17,741,935	\$496,940
			\$4,752,622		\$4,246,551
Jefferson					
	Fixed Assets	-	-	25,458	-
	Operational	4,742,300	303,425	3,556,021	267,570
	Personnel	7,386,521	82,444	7,637,526	31,126
	TOTAL	\$12,128,821	\$385,870	\$11,219,004	\$298,697
			\$4,289,640		\$2,763,431
GRAND TOTAL			\$24,338,526		\$18,479,045
			\$71,303,740		\$2,854,956
			\$3,168,546		\$2,763,431
			\$3,168,546		\$2,763,431
			\$4,289,640		\$2,854,956

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
District 11 Office			409		409
	Fixed Assets	-	-	-	-
	Operational	704,225	117,988	577,113	9,520
	Personnel	6,359,452	460,564	6,073,077	512,507
	TOTAL	\$7,063,678	\$578,552	\$6,650,190	\$522,027
Allegheny					
	Fixed Assets	482,460	461,978	392,893	81,960
	Operational	35,888,868	22,501,414	22,225,544	39,655,482
	Personnel	21,246,742	1,842,229	19,263,757	1,574,852
	TOTAL	\$57,618,071	\$24,805,620	\$41,882,194	\$41,312,294
Beaver					
	Fixed Assets	127,338	-	105,207	-
	Operational	9,445,214	4,837,178	4,311,934	10,649,573
	Personnel	8,300,491	647,720	7,688,556	730,574
	TOTAL	\$17,873,043	\$5,484,898	\$12,105,698	\$11,380,698
Lawrence					
	Fixed Assets	36,759	2,014	65,728	195
	Operational	4,821,382	5,966,201	2,502,586	6,117,822
	Personnel	5,822,124	327,050	5,425,344	432,376
	TOTAL	\$10,680,265	\$6,295,265	\$7,993,658	\$6,550,393
Tunnel Maintenance					
	Fixed Assets	-	-	-	-
	Operational	1,497,826	1,412	1,451,664	9,240
	Personnel	6,916,832	-	7,025,489	-
	TOTAL	\$8,414,657	\$1,412	\$8,477,152	\$9,240
GRAND TOTAL		\$101,649,713	\$37,165,747	\$77,108,892	\$59,774,101
			\$6,769,922		\$8,519,750

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2019-20		FY 2020-21	
		Base	Non-Base	Base	Non-Base
District 12 Office			409		409
	Fixed Assets	43,030	-	-	-
	Operational	401,294	310,942	321,334	139,634
	Personnel	4,626,175	1,250,534	4,880,674	43,338
	TOTAL	\$5,070,499	\$1,561,476	\$5,202,008	\$182,972
Fayette					
	Fixed Assets	13,375	-	-	-
	Operational	7,503,247	315,261	4,291,625	1,034,957
	Personnel	9,921,195	313,736	10,275,097	314,988
	TOTAL	\$17,437,817	\$628,997	\$14,566,723	\$1,349,946
Greene					
	Fixed Assets	12,550	-	-	-
	Operational	7,267,106	374,830	3,847,343	293,280
	Personnel	7,032,312	213,789	7,485,191	304,556
	TOTAL	\$14,311,968	\$588,619	\$11,332,534	\$597,836
Washington					
	Fixed Assets	47,829	-	26,413	-
	Operational	14,129,239	1,263,942	8,267,614	1,334,678
	Personnel	13,763,833	303,069	13,836,033	312,495
	TOTAL	\$27,940,901	\$1,567,011	\$22,130,061	\$1,647,173
Westmoreland					
	Fixed Assets	24,694	-	-8,940	-
	Operational	16,504,896	652,515	12,244,318	896,549
	Personnel	15,984,985	283,856	16,125,160	258,122
	TOTAL	\$32,514,574	\$936,371	\$28,360,538	\$1,154,670
GRAND TOTAL		\$97,275,759	\$5,282,474	\$81,591,863	\$4,932,597
					\$7,785,706
					\$6,268,998
					\$1,458,092
					\$1,420,436
					\$37,656
					\$6,144,324
					\$124,675
					\$58,389
					\$58,389

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
District 1 Office				
	Fixed Assets	-	-	-
	Operational	\$371,117	\$7,602	-
	Personnel	4,767,788	212,704	163
	TOTAL	\$5,138,905	\$220,306	\$163
Crawford				
	Fixed Assets	574,968	-	-
	Operational	7,715,367	254,747	5,054,496
	Personnel	10,545,752	113,890	75,184
	TOTAL	\$18,836,088	\$368,636	\$5,129,680
Erie				
	Fixed Assets	404,046	-	-
	Operational	10,882,206	663,304	-
	Personnel	12,100,400	82,784	-
	TOTAL	\$23,386,652	\$746,088	-
Forest				
	Fixed Assets	41,090	-	-
	Operational	1,455,793	1,519	-
	Personnel	2,668,868	4,276	-
	TOTAL	\$4,165,751	\$5,795	-
Mercer				
	Fixed Assets	367,274	-	-
	Operational	7,140,729	296,526	-
	Personnel	10,586,460	117,709	-
	TOTAL	\$18,094,463	\$414,235	-
Venango				
	Fixed Assets	188,207	-	-
	Operational	4,861,455	60,024	-
	Personnel	6,783,301	160,900	-
	TOTAL	\$11,832,963	\$220,923	-
Warren				
	Fixed Assets	-	-	-
	Operational	4,404,837	202,141	1,447,903
	Personnel	6,412,149	68,278	31,666
	TOTAL	\$10,816,986	\$270,418	\$1,479,569
Grand Total		\$92,271,807	\$2,246,401	\$6,609,413
District 2 Office				
	Fixed Assets	59,994	-	-
	Operational	322,560	79	-
	Personnel	5,291,977	130,618	-
	TOTAL	\$5,674,532	\$130,697	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
Cameron				
	Fixed Assets	16,723	-	-
	Operational	814,923	9,369	-
	Personnel	1,537,952	23,129	-
	TOTAL	\$2,369,598	\$32,498	-
Centre				
	Fixed Assets	77,523	-	-
	Operational	5,425,850	2,544,208	931,160
	Personnel	8,875,046	488,504	-
	TOTAL	\$14,378,420	\$3,032,712	\$931,160
Clearfield				
	Fixed Assets	47,681	-	-
	Operational	7,742,064	1,354,928	1,526,477
	Personnel	11,026,764	202,091	-
	TOTAL	\$18,816,509	\$1,557,019	\$1,526,477
Clinton				
	Fixed Assets	18,987	-	-
	Operational	3,334,346	146,923	-
	Personnel	5,041,737	187,980	-
	TOTAL	\$8,395,070	\$334,902	-
Elk				
	Fixed Assets	9,996	-	-
	Operational	2,812,128	113,517	721,848
	Personnel	3,734,501	26,794	-
	TOTAL	\$6,556,625	\$140,311	\$721,848
Juniata				
	Fixed Assets	4,999	1,500	-
	Operational	3,745,101	101,613	-
	Personnel	4,485,437	53,732	-
	TOTAL	\$8,235,538	\$156,846	-
McKean				
	Fixed Assets	80,977	-	-
	Operational	3,358,761	238,002	321,817
	Personnel	5,356,028	57,195	1,575
	TOTAL	\$8,795,766	\$295,198	\$323,392
Mifflin				
	Fixed Assets	12,520	-	-
	Operational	2,750,570	2,325,808	-
	Personnel	3,833,074	233,717	-
	TOTAL	\$6,596,164	\$2,559,524	-
Potter				
	Fixed Assets	73,824	-	-
	Operational	4,523,525	209,068	2,951,831
	Personnel	6,130,661	128,130	55,385
	TOTAL	\$10,728,010	\$337,198	\$3,007,216

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
GRAND TOTAL		\$90,546,231	\$8,576,904	\$6,510,093
District 3 Office				
	Fixed Assets	93,170	-	-
	Operational	1,541,950	187,983	-
	Personnel	4,716,995	374,744	-
	TOTAL	\$6,352,115	\$563,727	-
Bradford				
	Fixed Assets	169,884	46,905	-
	Operational	7,017,668	835,449	2,721,377
	Personnel	10,388,621	1,108,208	81,338
	TOTAL	\$17,576,173	\$1,990,562	\$2,802,715
Columbia				
	Fixed Assets	31,456	-	-
	Operational	4,020,245	362,196	5,164,466
	Personnel	7,953,198	121,185	-
	TOTAL	\$12,004,899	\$483,382	\$5,164,466
Lycoming				
	Fixed Assets	80,026	-	-
	Operational	8,196,343	685,834	3,814,827
	Personnel	11,085,401	308,595	133,191
	TOTAL	\$19,361,770	\$994,428	\$3,948,018
Montour				
	Fixed Assets	10,915	-	-
	Operational	1,488,493	94,926	936,257
	Personnel	2,991,359	65,561	-
	TOTAL	\$4,490,767	\$160,487	\$936,257
Northumberland				
	Fixed Assets	146,166	-	-
	Operational	3,929,519	427,581	1,951,554
	Personnel	7,620,940	116,202	-
	TOTAL	\$11,696,626	\$543,782	\$1,951,554
Snyder				
	Fixed Assets	86,014	-	-
	Operational	2,288,437	117,059	1,676,234
	Personnel	4,214,066	90,463	-
	TOTAL	\$6,588,517	\$207,522	\$1,676,234
Sullivan				
	Fixed Assets	-	1,523	-
	Operational	1,934,333	186,032	744,126
	Personnel	3,468,388	65,747	14,818
	TOTAL	\$5,402,722	\$253,301	\$758,945
Tioga				
	Fixed Assets	245,727	8,689	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
	Operational	7,029,383	317,448	3,587,187
	Personnel	8,861,504	521,072	95,707
	TOTAL	\$16,136,614	\$847,208	\$3,682,894
Union				
	Fixed Assets	87,516	-	-
	Operational	2,347,738	122,441	962,285
	Personnel	4,232,695	108,268	-
	TOTAL	\$6,667,949	\$230,709	\$962,285
GRAND TOTAL		\$106,278,152	\$6,275,108	\$21,883,368
District 4 Office				
	Fixed Assets	117,936	-	-
	Operational	659,161	170,102	-
	Personnel	6,109,610	144,999	-
	TOTAL	\$6,886,707	\$315,101	-
Lackawanna				
	Fixed Assets	226,480	-	-
	Operational	11,794,179	1,155,347	-
	Personnel	12,041,714	241,336	52,284
	TOTAL	\$24,062,373	\$1,396,683	\$52,284
Luzerne				
	Fixed Assets	633,555	-	-
	Operational	14,636,780	3,859,499	-
	Personnel	13,875,595	350,015	-
	TOTAL	\$29,145,930	\$4,209,513	-
Pike				
	Fixed Assets	160,278	-	-
	Operational	3,491,135	710,869	2,138,391
	Personnel	5,771,884	104,693	10,547
	TOTAL	\$9,423,297	\$815,563	\$2,148,938
Susquehanna				
	Fixed Assets	358,423	52,617	-
	Operational	11,074,951	1,208,257	5,897,258
	Personnel	10,888,728	200,990	60,277
	TOTAL	\$22,322,102	\$1,461,864	\$5,957,535
Wayne				
	Fixed Assets	184,902	-	-
	Operational	5,483,583	458,001	3,089,494
	Personnel	8,811,013	246,162	110,217
	TOTAL	\$14,479,498	\$704,163	\$3,199,712
Wyoming				
	Fixed Assets	269,414	-	-
	Operational	3,776,020	242,679	1,583,581

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
	Personnel	5,190,853	61,836	-
	TOTAL	\$9,236,287	\$304,515	\$1,583,581
GRAND TOTAL		\$115,556,194	\$9,207,400	\$12,942,051
District 5 Office				
	Fixed Assets	163,698	-	-
	Operational	575,737	1,006,251	-
	Personnel	5,451,231	598,450	-
	TOTAL	\$6,190,666	\$1,604,701	-
Berks				
	Fixed Assets	378,031	-	-
	Operational	9,678,509	2,009,760	-
	Personnel	9,163,946	472,564	-
	TOTAL	\$19,220,486	\$2,482,324	-
Carbon				
	Fixed Assets	39,299	-	-
	Operational	2,013,797	363,264	-
	Personnel	5,430,110	98,058	-
	TOTAL	\$7,483,206	\$461,323	-
Lehigh				
	Fixed Assets	-	-	-
	Operational	5,552,245	1,871,608	-
	Personnel	8,224,126	161,583	-
	TOTAL	\$13,776,371	\$2,033,192	-
Monroe				
	Fixed Assets	23,250	-	-
	Operational	7,480,381	1,027,800	4,860,642
	Personnel	9,210,027	431,917	-
	TOTAL	\$16,713,658	\$1,459,717	\$4,860,642
Northampton				
	Fixed Assets	254,457	-	-
	Operational	5,787,772	1,214,743	-
	Personnel	8,594,103	200,638	-
	TOTAL	\$14,636,332	\$1,415,380	-
Schuylkill				
	Fixed Assets	2,877	-	-
	Operational	8,904,025	846,272	-
	Personnel	10,617,313	148,117	-
	TOTAL	\$19,524,215	\$994,389	-
GRAND TOTAL		\$97,544,933	\$10,451,026	\$4,860,642
District 6 Office				
	Fixed Assets	-	-	-
	Operational	350,494	17,971	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
	Personnel	9,073,197	55,308	-
	TOTAL	\$9,423,691	\$73,279	-
Bucks				
	Fixed Assets	35,224	-	-
	Operational	12,270,664	6,125,656	6,062,542
	Personnel	9,462,299	734,199	-
	TOTAL	\$21,768,188	\$6,859,854	\$6,062,542
Chester				
	Fixed Assets	104,541	-	-
	Operational	11,842,531	6,307,901	6,165,915
	Personnel	9,677,393	610,656	-
	TOTAL	\$21,624,466	\$6,918,557	\$6,165,915
Delaware				
	Fixed Assets	88,609	-	-
	Operational	7,585,735	2,591,801	5,502,149
	Personnel	5,545,329	158,385	-
	TOTAL	\$13,219,673	\$2,750,186	\$5,502,149
Montgomery				
	Fixed Assets	88,609	-	-
	Operational	11,311,381	8,224,378	6,916,425
	Personnel	9,318,994	788,041	-
	TOTAL	\$20,718,985	\$9,012,419	\$6,916,425
Philadelphia				
	Fixed Assets	309,335	-	-
	Operational	12,714,994	6,924,195	3,693,371
	Personnel	5,927,857	145,974	-
	TOTAL	\$18,952,186	\$7,070,169	\$3,693,371
GRAND TOTAL		\$105,707,188	\$32,684,464	\$28,340,401
District 8 Office				
	Fixed Assets	-	26,111	-
	Operational	517,422	1,316,540	-
	Personnel	5,227,353	282,339	-
	TOTAL	\$5,744,774	\$1,624,990	-
Adams				
	Fixed Assets	260,179	-	-
	Operational	4,940,682	441,041	-
	Personnel	6,843,002	143,522	-
	TOTAL	\$12,043,863	\$584,563	-
Cumberland				
	Fixed Assets	103,348	-	-
	Operational	5,884,128	1,696,610	4,012,200
	Personnel	9,124,047	168,436	134,148
	TOTAL	\$15,111,523	\$1,865,046	\$4,146,348

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
Dauphin				
	Fixed Assets	32,276	-	-
	Operational	7,729,651	2,783,353	-
	Personnel	8,768,852	315,215	-
	TOTAL	\$16,530,778	\$3,098,568	-
Franklin				
	Fixed Assets	96,886	-	-
	Operational	4,386,176	529,200	-
	Personnel	7,758,877	293,031	-
	TOTAL	\$12,241,939	\$822,232	-
Lancaster				
	Fixed Assets	1,547,468	-	-
	Operational	8,261,711	1,008,782	-
	Personnel	11,204,969	202,774	-
	TOTAL	\$21,014,149	\$1,211,556	-
Lebanon				
	Fixed Assets	409,369	-	-
	Operational	2,988,051	528,218	-
	Personnel	5,593,117	232,095	-
	TOTAL	\$8,990,537	760,313	-
Perry				
	Fixed Assets	115,242	-	-
	Operational	3,768,008	295,538	-
	Personnel	6,202,096	44,634	-
	TOTAL	\$10,085,346	\$340,172	-
York				
	Fixed Assets	1,118,500	500	-
	Operational	10,302,709	2,483,037	9,217,367
	Personnel	12,842,480	556,181	-
	TOTAL	\$24,263,689	\$3,039,718	\$9,217,367
GRAND TOTAL		\$126,026,598	\$13,347,157	\$13,363,715
District 9 Office				
	Fixed Assets	-	-	-
	Operational	402,229	113	-
	Personnel	5,349,950	103,443	-
	TOTAL	\$5,752,180	\$103,556	-
Bedford				
	Fixed Assets	157,287	2,023	-
	Operational	4,771,997	632,353	-
	Personnel	9,666,260	265,634	-
	TOTAL	\$14,595,545	\$900,009	-
Blair				
	Fixed Assets	14,479	-	-

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
	Operational	4,144,656	572,931	-
	Personnel	7,492,550	78,637	-
	TOTAL	\$11,651,684	\$651,568	-
Cambria				
	Fixed Assets	123,249	-	-
	Operational	6,717,297	357,979	1,990,901
	Personnel	10,443,441	87,242	34,212
	TOTAL	\$17,283,987	\$445,221	\$2,025,113
Fulton				
	Fixed Assets	23,780	-	-
	Operational	2,417,221	203,841	1,000,000
	Personnel	5,952,255	191,504	-
	TOTAL	\$8,393,256	\$395,345	\$1,000,000
Huntingdon				
	Fixed Assets	-	-	-
	Operational	2,063,781	126,369	-
	Personnel	8,195,148	144,328	-
	TOTAL	\$10,258,929	\$270,696	-
Somerset				
	Fixed Assets	119,519	-	-
	Operational	8,380,052	455,594	2,607,785
	Personnel	11,502,762	164,065	59,493
	TOTAL	\$20,002,333	\$619,659	\$2,667,278
GRAND TOTAL		\$87,937,914	\$3,386,054	\$5,692,391
District 10 Office				
	Fixed Assets	418,840	-	-
	Operational	411,330	102,061	-5,402
	Personnel	5,288,008	262,073	-
	TOTAL	\$6,118,178	\$364,134	-\$5,402
Armstrong				
	Fixed Assets	28,777	-	-
	Operational	6,145,583	419,442	4,630,202
	Personnel	8,384,186	84,655	168,311
	TOTAL	\$14,558,546	\$504,097	\$4,798,513
Butler				
	Fixed Assets	-	-	-
	Operational	7,268,746	760,752	4,417,669
	Personnel	10,775,273	114,381	234,023
	TOTAL	\$18,044,019	\$875,133	\$4,948,693
Clarion				
	Fixed Assets	26,552	-	-
	Operational	4,245,456	211,967	2,988,458

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
	Personnel	7,238,098	53,971	-
	TOTAL	\$11,510,106	\$265,938	\$2,988,458
Indiana				
	Fixed Assets	-	-	-
	Operational	7,789,356	294,498	3,172,609
	Personnel	10,635,969	96,143	-
	TOTAL	\$18,425,326	\$390,640	\$3,172,609
Jefferson				
	Fixed Assets	-	-	-
	Operational	7,590,073	233,146	2,769,139
	Personnel	7,862,541	73,639	-
	TOTAL	\$15,452,614	\$306,785	\$2,769,139
GRAND TOTAL				
		\$84,108,789	\$2,706,728	\$18,672,010
District 11 Office				
	Fixed Assets	-	-	-
	Operational	799,695	14,381	-
	Personnel	5,919,799	380,456	-
	TOTAL	\$6,719,494	\$394,838	-
Allegheny				
	Fixed Assets	210,230	69,921	-
	Operational	30,131,754	23,844,575	-
	Personnel	19,067,399	1,498,794	-
	TOTAL	\$49,409,383	\$25,413,290	-
Beaver				
	Fixed Assets	52,496	-	-
	Operational	8,492,633	6,506,683	5,634,469
	Personnel	7,270,920	578,270	-
	TOTAL	\$15,816,049	\$7,084,952	\$5,634,469
Lawrence				
	Fixed Assets	20,220	-	-
	Operational	4,863,312	652,912	4,330,562
	Personnel	5,725,541	368,305	-
	TOTAL	\$10,609,073	\$1,021,217	\$4,330,562
Tunnel Maintenance				
	Fixed Assets	70,877	-	-
	Operational	1,512,875	923	-
	Personnel	7,165,732	-	-
	TOTAL	\$8,749,483	\$923	-
GRAND TOTAL				
		\$91,303,482	\$33,915,220	\$9,965,031

Appendix G Continued

Engineering District / CMO	Expenditure	FY 2021-22		
		Base	Non-Base	409
District 12 Office				
	Fixed Assets	8,465	-	-
	Operational	792,299	40,297	-312
	Personnel	5,005,668	40,553	-
	TOTAL	\$5,806,432	\$80,850	-\$312
Fayette				
	Fixed Assets	23,313	-	-
	Operational	9,339,744	3,559,195	-
	Personnel	10,210,499	394,259	-
	TOTAL	\$19,573,556	\$3,953,454	-
Greene				
	Fixed Assets	28,344	4,710	-
	Operational	6,027,504	223,319	6,106,589
	Personnel	7,696,658	198,469	23,023
	TOTAL	\$13,752,506	\$426,497	\$6,129,612
Washington				
	Fixed Assets	-	-	-
	Operational	12,179,222	1,212,528	3,596,442
	Personnel	13,711,602	349,121	24,253
	TOTAL	\$25,890,824	\$1,561,648	\$3,620,695
Westmoreland				
	Fixed Assets	87,516	-	-
	Operational	14,220,067	1,646,203	-
	Personnel	16,024,502	468,205	82,282
	TOTAL	\$30,332,085	\$2,114,408	\$82,282
GRAND TOTAL		\$95,355,404	\$8,136,858	\$9,832,277

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Appendix H: Actual Expanded State Highway and Bridge Maintenance Allocation (409) Expenditures by Engineering District and CMO - FY 2015-22

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
District 1 Office								
Fixed Assets	-	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-	-
Personnel	-	267	-	7,298	-	-7,737	163	-
TOTAL	-	\$267	-	\$7,298	-	-\$7,737	\$163	\$163
Crawford								
Fixed Assets	-	-	-	-	-	-	-	-
Operational	1,664,201	4,752,115	3,337,798	6,857,142	4,115,601	3,328,653	5,054,496	-
Personnel	38,112	114,882	92,331	126,167	130,696	164,472	75,184	-
TOTAL	\$1,702,313	\$4,866,997	\$3,430,129	\$6,983,309	\$4,246,297	\$3,493,125	\$5,129,680	\$5,129,680
Erie								
Fixed Assets	-	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
Forest								
Fixed Assets	-	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
Mercer								
Fixed Assets	-	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Venango	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Warren	Fixed Assets	-	-	-	-	-	-	-
	Operational	5,142,782	2,122,070	8,906,280	8,382,498	3,174,824	4,044,250	1,447,903
	Personnel	34,771	72,756	135,446	84,110	70,340	22,655	31,666
	TOTAL	\$5,177,553	\$2,194,825	\$9,041,726	\$8,466,609	\$3,245,163	\$4,066,905	\$1,479,569
District 1 Total		\$6,879,866	\$7,061,822	\$12,472,122	\$15,449,917	\$7,498,758	\$7,552,292	\$6,609,412
District 2 Of- fice	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Cameron	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Centre	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,399,574	2,523,503	2,672,403	3,822,131	4,813,056	2,940,828	931,160
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$2,399,574	\$2,523,503	\$2,672,403	\$3,822,131	\$4,813,056	\$2,940,828	\$931,160
Clearfield	Fixed Assets	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Operational	3,421,572	3,679,836	4,006,930	3,616,486	5,004,242	3,513,475	1,526,477
Personnel	-	-	-	-	-	-	-
TOTAL	\$3,421,572	\$3,679,836	\$4,006,930	\$3,616,486	\$5,004,242	\$3,513,475	\$1,526,477
Clinton							
Fixed Assets	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-
Elk							
Fixed Assets	-	-	-	-	-	-	-
Operational	1,320,628	1,445,096	1,734,606	3,897,202	2,248,004	1,456,224	721,848
Personnel	-	846	224	77,862	-4	12,039	-
TOTAL	\$1,320,628	\$1,445,942	\$1,734,830	\$3,975,064	\$2,248,000	\$1,468,263	\$721,848
Juniata							
Fixed Assets	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-
McKean							
Fixed Assets	-	-	-	-	-	-	-
Operational	9,388,350	1,897,490	5,293,647	4,452,171	1,868,831	2,680,848	321,817
Personnel	103,187	32,614	129,490	65,230	108,207	56,797	1,575
TOTAL	\$9,491,537	\$1,930,104	\$5,423,137	\$4,517,401	\$1,977,038	\$2,737,644	\$323,392
Mifflin							
Fixed Assets	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-
Potter							
Fixed Assets	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Operational	5,469,815	16,147,480	10,505,373	9,683,430	2,215,342	651,471	2,951,831
Personnel	188,971	77,991	222,609	132,054	3,327	107,784	55,385
TOTAL	\$5,658,786	\$16,225,470	\$10,727,982	\$9,815,485	\$2,218,669	\$759,255	\$3,007,216
District 2 Total	\$22,292,097	\$25,804,855	\$24,565,283	\$25,746,566	\$16,261,005	\$11,419,466	\$6,510,093
District 3 Office							
Fixed Assets	-	-	-	-	-	-	-
Operational	-	-	-	-	-	-	-
Personnel	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-
Bradford							
Fixed Assets	-	-	-	-	-	-	-
Operational	2,125,718	5,123,971	4,479,620	4,180,732	4,911,321	4,743,824	2,721,377
Personnel	116,447	389,506	147,147	59,679	191,897	212,922	81,338
TOTAL	\$2,242,165	\$5,513,477	\$4,626,768	\$4,240,410	\$5,103,218	\$4,956,746	\$2,802,715
Columbia							
Fixed Assets	-	-	-	-	-	-	-
Operational	1,897,207	2,640,187	1,803,432	2,809,947	2,925,130	1,096,925	5,164,466
Personnel	-	-	-	-	-	-	-
TOTAL	\$1,897,207	\$2,640,187	\$1,803,432	\$2,809,947	\$2,925,130	\$1,096,925	\$5,164,466
Lycoming							
Fixed Assets	-	-	-	-	-	-	-
Operational	2,364,129	4,308,795	2,980,628	3,011,035	4,444,092	4,449,303	3,814,827
Personnel	60,112	309,035	127,188	117,449	135,450	170,652	133,191
TOTAL	\$2,424,240	\$4,617,830	\$3,107,816	\$3,128,484	\$4,579,542	\$4,619,955	\$3,948,018
Montour							
Fixed Assets	-	-	-	-	-	-	-
Operational	441,786	910,502	244,894	988,161	1,051,844	670,900	936,257

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$441,786	\$910,502	\$244,894	\$988,161	\$1,051,844	\$670,900	\$936,257
Northumber-land								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	1,939,188	1,928,412	1,910,467	3,183,607	3,162,858	1,824,560	1,951,554
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$1,939,188	\$1,928,412	\$1,910,467	\$3,183,607	\$3,162,858	\$1,824,560	\$1,951,554
Snyder								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	1,232,930	1,074,020	1,279,554	1,274,886	1,293,411	1,225,307	1,676,234
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$1,232,930	\$1,074,020	\$1,279,554	\$1,274,886	\$1,293,411	\$1,225,307	\$1,676,234
Sullivan								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	814,763	667,488	953,188	2,597,281	1,237,362	1,683,261	744,126
	Personnel	32,494	66,303	57,192	20,846	23,598	86,993	14,818
	TOTAL	\$847,257	\$733,792	\$1,010,381	\$2,618,127	\$1,260,960	\$1,770,254	\$758,945
Tioga								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,389,249	7,391,590	4,689,589	5,195,014	3,218,077	3,991,943	3,587,187
	Personnel	111,133	671,949	78,893	58,617	53,881	156,660	95,707
	TOTAL	\$2,500,383	\$8,063,539	\$4,768,482	\$5,253,631	\$3,271,959	\$4,148,603	\$3,682,894
Union								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	1,050,365	1,207,786	1,186,685	1,095,013	1,141,878	1,658,886	962,285
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$1,050,365	\$1,207,786	\$1,186,685	\$1,095,013	\$1,141,878	\$1,658,886	\$962,285
District 3 Total		\$14,575,522	\$26,689,544	\$19,938,478	\$24,592,266	\$23,790,800	\$21,972,135	\$21,883,368

Appendix H Continued

Engineering District / CMO Office	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Lackawanna								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	78,972	278,183	86,641	178,740	186,301	251,490	52,284
	TOTAL	\$78,972	\$278,183	\$86,641	\$178,740	\$186,301	\$251,490	\$52,284
Luzerne								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Pike								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	906,096	1,755,125	2,293,393	4,402,047	2,915,208	1,439,837	2,138,391
	Personnel	44,256	22,686	10,278	81,566	63,647	77,125	10,547
	TOTAL	\$950,352	\$1,777,811	\$2,303,671	\$4,483,613	\$2,978,855	\$1,516,962	\$2,148,938
Susquehanna								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	3,561,613	3,762,580	3,785,895	5,018,698	4,262,895	3,971,765	5,897,258
	Personnel	80,689	158,796	115,785	80,149	132,038	127,988	60,277
	TOTAL	\$3,642,302	\$3,921,375	\$3,901,680	\$5,098,847	\$4,394,933	\$4,099,754	\$5,957,535
Wayne								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,994,449	6,126,281	2,341,662	4,829,948	4,233,633	2,331,297	3,089,494
	Personnel	32,834	122,399	42,451	58,883	34,524	46,919	110,217
	TOTAL	\$3,027,283	\$6,248,679	\$2,384,112	\$4,888,832	\$4,268,156	\$2,378,217	\$3,199,712

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Wyoming								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	1,389,831	1,085,095	1,904,993	2,383,771	2,155,089	1,282,563	1,583,581
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$1,389,831	\$1,085,095	\$1,904,993	\$2,383,771	\$2,155,089	\$1,282,563	\$1,583,581
District 4 Total		\$9,088,741	\$13,311,144	\$10,581,099	\$17,033,803	\$13,983,335	\$9,528,986	\$12,942,050
District 5 Office								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Berks								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Carbon								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Lehigh								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Monroe								
	Fixed Assets	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Northampton	Operational	3,489,127	876,837	4,458,262	3,793,972	6,306,528	2,249,409	4,860,642
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$3,489,127	\$876,837	\$4,458,262	\$3,793,972	\$6,306,528	\$2,249,409	\$4,860,642
Schuylkill	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
District 5 Total	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	TOTAL	\$3,489,127	\$876,837	\$4,458,262	\$3,793,972	\$6,306,528	\$2,249,409	\$4,860,642
District 6 Office	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Bucks	Fixed Assets	-	-	-	-	-	-	-
	Operational	4,258,523	10,685,483	9,048,941	9,768,225	10,113,284	6,197,398	6,062,542
	TOTAL	\$4,258,523	\$10,685,483	\$9,048,941	\$9,768,225	\$10,113,284	\$6,197,398	\$6,062,542
Chester	Fixed Assets	-	-	-	-	-	-	-
	Operational	6,473,285	7,281,566	5,509,792	6,514,880	11,130,321	5,119,631	6,165,915
	TOTAL	\$6,473,285	\$7,281,566	\$5,509,792	\$6,514,880	\$11,130,321	\$5,119,631	\$6,165,915

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Delaware								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	3,379,913	5,198,022	3,830,767	4,986,784	13,128,343	6,272,538	5,502,149
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$3,379,913	\$5,198,022	\$3,830,767	\$4,986,784	\$13,128,343	\$6,272,538	\$5,502,149
Montgomery								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	4,228,979	6,878,350	2,879,191	4,602,808	10,558,423	12,471,033	6,916,425
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$4,228,979	\$6,878,350	\$2,879,191	\$4,602,808	\$10,558,423	\$12,471,033	\$6,916,425
Philadelphia								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	6,927,318	10,141,644	4,737,208	16,140,826	14,408,036	6,306,443	3,693,371
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$6,927,318	\$10,141,644	\$4,737,208	\$16,140,826	\$14,408,036	\$6,306,443	\$3,693,371
District 6 Total		\$25,268,016	\$40,185,065	\$25,555,899	\$42,013,523	\$59,338,406	\$36,367,043	\$28,340,401
District 8 Office								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Adams								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Cumberland								
	Fixed Assets	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Operational	928,857	4,087,433	1,255,180	5,186,454	5,008,886	2,985,795	4,012,200
	Personnel	2,225	16,505	75,313	365,193	339,441	37,677	134,148
	TOTAL	\$931,081	\$4,103,937	\$1,330,493	\$5,551,647	\$5,348,327	\$3,023,472	\$4,146,348
Dauphin	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Franklin	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Lancaster	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Lebanon	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Perry	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
York	Fixed Assets	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
	Operational	1,001,185	2,712,928	7,477,825	4,780,509	7,275,179	6,028,463	9,217,367
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$1,001,185	\$2,712,928	\$7,477,825	\$4,780,509	\$7,275,179	\$6,028,463	\$9,217,367
District 8 Total		\$1,932,267	\$6,816,866	\$8,808,318	\$10,332,156	\$12,623,506	\$9,051,935	\$13,363,715
District 9 Office								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Bedford								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Blair								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Cambria								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,307,315	1,977,341	6,283,874	5,549,236	4,119,775	2,211,068	1,990,901
	Personnel	106,955	91,751	192,602	189,168	32,775	148,680	34,212
	TOTAL	\$2,414,270	\$2,069,092	\$6,476,477	\$5,738,404	\$4,152,549	\$2,359,748	\$2,025,113
Fulton								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	55,752	212,093	1,515,407	1,446,783	1,291,523	831,000	1,000,000
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$55,752	\$212,093	\$1,515,407	\$1,446,783	\$1,291,523	\$831,000	\$1,000,000

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Huntingdon	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Somerset	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,556,893	6,240,954	5,338,505	9,101,189	3,680,656	2,194,622	2,607,785
	Personnel	34,318	129,311	103,604	219,963	193,635	61,090	59,493
	TOTAL	\$2,591,210	\$6,370,265	\$5,442,109	\$9,321,152	\$3,874,291	\$2,255,712	\$2,667,278
District 9 Total		\$5,061,232	\$8,651,449	\$13,433,993	\$16,506,339	\$9,318,363	\$5,446,460	\$5,692,391
District 10 Office	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	1,629	-	-	2,632	1,813	-5,402
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	\$1,629	-	-	\$2,632	\$1,813	-\$5,402
Armstrong	Fixed Assets	-	-	-	-	-	-	-
	Operational	3,416,707	3,285,875	4,111,349	3,639,189	4,440,119	3,916,554	4,630,202
	Personnel	84,680	78,570	268,155	141,419	192,449	156,814	168,311
	TOTAL	\$3,501,386	\$3,364,445	\$4,379,504	\$3,780,607	\$4,632,568	\$4,073,368	\$4,798,513
Butler	Fixed Assets	-	-	-	-	-	-	-
	Operational	6,705,200	4,894,923	8,546,224	4,342,909	8,017,236	4,495,224	4,714,669
	Personnel	104,226	93,224	162,147	102,651	147,822	136,877	234,023
	TOTAL	\$6,809,426	\$4,988,147	\$8,708,370	\$4,445,560	\$8,165,057	\$4,632,101	\$4,948,693
Clarion	Fixed Assets	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
CMO	Operational	1,368,234	2,478,053	2,173,494	2,481,807	3,617,100	2,761,781	2,988,458
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$1,368,234	\$2,478,053	\$2,173,494	\$2,481,807	\$3,617,100	\$2,761,781	\$2,988,458
Indiana	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,595,715	5,976,889	2,295,093	5,174,599	4,752,622	4,246,551	3,172,609
	Personnel	-	-	-	-	-	-	-
TOTAL	\$2,595,715	\$5,976,889	\$2,295,093	\$5,174,599	\$4,752,622	\$4,246,551	\$3,172,609	
Jefferson	Fixed Assets	-	-	-	-	-	-	-
	Operational	1,090,890	4,053,826	1,083,734	5,391,015	3,168,546	2,763,431	2,769,139
	Personnel	-	-	-	-	-	-	-
TOTAL	\$1,090,890	\$4,053,826	\$1,083,734	\$5,391,015	\$3,168,546	\$2,763,431	\$2,769,139	
District 10 Total	\$15,365,651	\$20,862,990	\$18,640,195	\$21,273,588	\$24,339,526	\$18,479,045	\$18,672,009	
District 11 Office	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	
Allegheny	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	
Beaver	Fixed Assets	-	-	-	-	-	-	-
	Operational	3,415,073	3,046,793	916,977	3,701,518	3,906,296	6,298,992	5,634,469
	Personnel	-	-	-	-	-	-	-

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Lawrence	Personnel	-	-	-	-	-	-	-
	TOTAL	\$3,415,073	\$3,046,793	\$916,977	\$3,701,518	\$3,906,296	\$6,298,992	\$5,634,469
	Fixed Assets	-	-	-	-	-	-	-
	Operational	4,651,575	2,066,462	784,930	2,480,238	2,863,626	2,220,758	4,330,562
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$4,651,575	\$2,066,462	\$784,930	\$2,480,238	\$2,863,626	\$2,220,758	\$4,330,562
Tunnel Maintenance								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	\$8,066,649	\$5,113,254	\$1,701,907	\$6,181,756	\$6,769,922	\$8,519,750	\$9,965,031
District 11 Total								
District 12 Office								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	51	35	227	-312
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	\$51	\$35	\$227	-\$312
Fayette								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	-	-	-	-	-	-	-
	Personnel	-	-	-	-	-	-	-
	TOTAL	-	-	-	-	-	-	-
Greene								
	Fixed Assets	-	-	-	-	-	-	-
	Operational	2,021,912	4,050,266	5,654,513	3,264,978	5,253,035	1,420,436	6,106,589

Appendix H Continued

Engineering District / CMO	Expenditure	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Personnel		9,534	30,789	58,081	19,539	36,147	37,656	23,023
TOTAL		\$2,031,446	\$4,081,055	\$5,712,594	\$3,284,517	\$5,289,182	\$1,458,092	\$6,129,612
Washington								
Fixed Assets		-	-	-	-	-	-	-
Operational		2,656,723	6,480,884	6,663,433	10,478,170	11,405,814	6,144,324	3,596,442
Personnel		24,595	49,636	60,794	118,295	103,389	124,675	24,253
TOTAL		\$2,681,319	\$6,530,521	\$6,724,227	\$10,596,465	\$11,509,203	\$6,268,998	\$3,620,695
Westmoreland								
Fixed Assets		-	-	-	-	-	-	-
Operational		-	-	-	-	-	-	-
Personnel		9,420	33,938	125,893	74,607	125,444	58,389	82,282
TOTAL		\$9,420	\$33,938	\$125,893	\$74,607	\$125,444	\$58,389	\$82,282
District 12 Total		\$4,722,186	\$10,645,513	\$12,562,714	\$13,955,639	\$16,923,864	\$7,785,707	\$9,832,276
GRAND TOTAL								
Fixed Assets		-	-	-	-	-	-	-
Operational		114,628,658	161,763,354	150,428,738	194,507,339	194,840,711	136,123,611	137,189,294
Personnel		1,297,930	2,841,669	2,292,531	2,372,187	2,312,301	2,248,617	1,482,097
TOTAL		\$115,926,588	\$164,605,023	\$152,721,269	\$196,879,526	\$197,153,012	\$138,372,228	\$138,671,391

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Appendix I: Historic Costs Per Snow Lane Mile

County	2015-16							Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles			
District 1										
Crawford	\$1,944,029	\$1,359,987	\$263	\$63,009	\$865,597	\$4,232,884	1,971	\$2,148		
Erie	2,480,483	1,730,149	24,039	616,204	1,589,701	6,440,576	2,041	3,156		
Forest	323,506	285,242	0	0	143,041	751,789	405	1,856		
Mercer	1,883,472	1,177,251	20,772	0	691,126	3,772,620	1,769	2,133		
Venango	1,498,661	1,037,401	0	82,008	602,325	3,220,394	1,192	2,702		
Warren	1,061,898	782,531	0	143,606	356,761	2,344,796	1,118	2,097		
Total	\$9,192,050	\$6,372,561	\$45,073	\$904,826	\$4,248,550	\$20,763,060	\$8,496	\$2,444		
District 2										
Centre	1,756,362	928,281	0	71,716	758,981	3,515,340	1,486	2,366		
Clearfield	2,441,937	1,570,227	46	30,147	1,281,269	5,323,625	1,757	3,030		
Clinton	744,741	549,739	0	32,129	261,596	1,588,205	713	2,227		
Cameron	266,567	109,415	0	0	98,117	474,099	224	2,117		
McKean	1,128,622	561,681	0	51,596	688,447	2,430,347	810	3,000		
Potter	1,172,585	634,973	990	10,240	604,122	2,422,909	881	2,750		
Mifflin	845,148	462,152	15,750	6,227	330,140	1,659,417	570	2,911		
Elk	736,575	326,708	0	2,902	469,869	1,536,054	622	2,470		
Juniata	1,108,579	572,617	2,250	6,234	314,234	2,003,914	770	2,602		
Total	\$10,201,116	\$5,715,793	\$19,036	\$211,192	\$4,806,774	\$20,953,911	\$7,833	\$2,675		
District 3										
Columbia	799,813	354,441	207	835	311,115	1,466,410	1,101	1,332		
Lycoming	1,162,015	489,865	0	36,064	484,200	2,172,144	1,692	1,284		
Montour	280,920	138,702	0	14,456	77,589	511,667	400	1,279		

Appendix I Continued

2015-16								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Northumberland	906,556	391,542		94,935	430,435	1,823,468	1,208	1,509
Snyder	404,292	156,049		80,004	171,814	812,159	662	1,227
Sullivan	324,523	164,268		0	199,468	688,260	491	1,402
Tioga	1,239,431	508,914	591	76,032	650,306	2,475,275	1,375	1,800
Union	463,512	199,406		59,295	178,618	900,832	660	1,365
Bradford	1,129,759	464,492	476	74,741	571,999	2,241,467	1,844	1,216
Total	\$6,710,820	\$2,867,680	\$1,275	\$436,362	\$3,075,545	\$13,091,682	\$9,433	\$1,388
District 4								
Lackawanna	1,782,345	1,003,192	195,347	119,009	932,001	4,031,894	1,539	2,620
Luzerne	2,337,155	1,290,816	304,961	247,328	1,443,539	5,623,799	2,287	2,459
Pike	693,791	351,722	47,777	108,365	523,811	1,725,466	753	2,291
Susquehanna	1,452,022	687,751	2,272	19,434	966,761	3,128,240	1,636	1,912
Wayne	933,741	404,215	82,643	34,394	679,048	2,134,041	1,479	1,443
Wyoming	565,670	274,887	3,247	67,656	244,379	1,155,839	769	1,503
Total	\$7,764,723	\$4,012,583	\$636,247	\$596,186	\$4,789,540	\$17,799,279	\$8,463	\$2,103
District 5								
Berks	1,507,360	988,753	299,409	603,920	635,008	4,034,450	2,265	1,781
Carbon	821,939	455,787	7,920	24,225	294,122	1,603,992	619	2,591
Lehigh	1,257,464	673,828	101,313	112,344	489,698	2,634,646	1,427	1,846
Monroe	1,516,337	748,399	20,440	69,058	621,517	2,975,752	1,267	2,349
Northampton	1,454,252	850,963	91,089	385,068	306,852	3,088,224	1,250	2,471
Schuylkill	2,110,640	1,188,589	84,878	48,235	1,083,802	4,516,142	1,519	2,973
Total	\$8,667,992	\$4,906,318	\$605,048	\$1,242,850	\$3,430,999	\$18,853,206	\$8,347	\$2,259

Appendix I Continued

2015-16									
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile	
District 6									
Bucks	1,499,532	531,720	1,176,287	273,471	1,131,375	4,612,384	2,691	1,714	
Chester	2,260,748	778,026	1,936,123	715,982	1,029,431	6,720,310	2,608	2,577	
Delaware	1,057,191	297,226	1,235,051	349,128	861,891	3,800,487	1,646	2,309	
Montgomery	1,542,650	870,155	646,694	1,568,007	1,011,559	5,639,065	2,383	2,366	
Philadelphia	676,931	261,221	635,300	2,500,000	347,932	4,421,383	2,075	2,131	
Total	\$7,037,052	\$2,738,349	\$5,629,454	\$5,406,588	\$4,382,187	\$25,193,630	\$11,403	\$2,209	
District 8									
Adams	1,301,702	613,762	48,341	22,821	351,667	2,338,293	1,221	1,915	
Cumberland	1,943,841	932,206	47,360	96,769	613,590	3,633,766	1,474	2,465	
Franklin	1,307,431	786,216	80,793	55,353	440,342	2,670,135	1,397	1,911	
York	2,394,050	1,191,961	495,419	584,443	621,530	5,287,404	2,694	1,963	
Dauphin	1,535,502	704,374	91,663	236,011	445,929	3,013,479	1,596	1,888	
Lancaster	1,814,355	861,405	244,062	275,705	504,142	3,699,669	2,516	1,470	
Lebanon	1,038,897	617,361	85,125	85,125	457,143	2,198,527	902	2,437	
Perry	1,175,897	601,520	87,875	87,875	392,791	2,258,082	934	2,418	
Total	\$12,511,675	\$6,308,805	\$1,007,636	\$1,444,103	\$3,827,134	\$25,099,353	\$12,734	\$1,971	
District 9									
Bedford	1,870,920	1,049,799		26,449	785,606	3,732,772	1,724	2,165	
Blair	1,400,539	826,180		55,770	667,283	2,949,772	1,209	2,440	
Cambria	1,717,011	888,291	525	158,951	1,322,422	4,087,199	1,577	2,592	
Fulton	1,085,465	602,888		0	359,143	2,047,496	734	2,790	
Huntingdon	1,212,759	674,142		18,670	463,846	2,369,417	1,234	1,920	

Appendix I Continued

2015-16								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Somerset	3,295,968	1,542,376	9,888	74,364	1,752,597	6,675,194	1,873	3,564
Total	\$10,582,661	\$5,583,676	\$10,413	\$334,203	\$5,350,897	\$21,861,850	\$8,351	\$2,618
District 10								
Armstrong	1,326,421	535,951		43,954	930,967	2,837,294	1,414	2,007
Butler	2,283,599	992,293	1,640	73,780	1,433,559	4,784,871	1,587	3,015
Clarion	1,339,842	657,596		0	837,175	2,834,613	1,029	2,755
Indiana	1,947,080	830,584	2,879	16,278	1,045,242	3,842,062	1,780	2,158
Jefferson	1,426,882	617,167		21,344	894,288	2,959,681	1,193	2,481
Total	\$8,323,824	\$3,633,593	\$4,519	\$155,356	\$5,141,231	\$17,258,522	\$7,003	\$2,464
District 11								
Allegheny	3,376,570	1,652,172	421,664	3,131,674	2,165,521	10,747,599	3,624	2,966
Beaver	1,531,499	907,324		246,077	859,360	3,544,260	1,433	2,473
Lawrence	972,312	1,078,429	2,250	106,530	490,028	2,649,548	913	2,902
Total	5,880,380	3,637,925	423,914	3,484,280	3,514,908	16,941,408	5,970	2,838
District 12								
Fayette	1,769,401	991,226	12,198	109,209	1,402,186	4,284,221	1,712	2,502
Greene	1,380,121	469,316	2,534	101,222	518,763	2,471,956	1,201	2,058
Washington	2,280,337	1,134,607	204,394	660,039	1,500,161	5,779,537	2,533	2,282
Westmoreland	3,022,146	1,571,367	19,955	475,873	2,025,243	7,114,584	2,788	2,552
Total	8,452,005	4,166,516	239,082	1,346,343	5,446,352	19,650,298	8,234	2,386
Statewide Totals	95,324,299	49,943,798	8,621,696	15,562,289	48,014,117	217,466,199	96,267	2,259

Appendix I Continued

2016-17							
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles Cost Per Snow Lane Mile
District 1							
Crawford	2,467,938	2,025,090		89,272	1,327,495	5,909,795	1,971 2,998
Erie	3,180,922	2,299,597	20,118	662,706	2,015,358	8,178,701	2,044 4,001
Forest	427,344	464,465			203,867	1,095,677	405 2,705
Mercer	2,345,684	1,536,034	18,973		1,310,706	5,211,397	1,767 2,949
Venango	1,909,324	1,459,507	383	113,431	995,271	4,477,916	1,192 3,757
Warren	1,233,807	1,025,888		142,748	593,796	2,996,239	1,117 2,682
Totals	11,565,020	8,810,581	39,474	1,008,156	6,446,494	27,869,725	8,496 3,280
District 2							
Centre	2,215,926	1,227,071		28,350	1,497,349	4,968,695	1,486 3,344
Clearfield	3,436,654	2,303,818		2,973	2,095,947	7,839,392	1,753 4,472
Clinton	894,503	647,590		34,238	521,487	2,097,818	713 2,942
Cameron	377,961	224,697	2,250		184,672	789,580	224 3,525
McKean	1,552,226	731,712		62,613	965,246	3,311,796	810 4,089
Potter	1,680,717	1,037,144	1,320	12,654	936,776	3,668,612	882 4,159
Mifflin	943,182	696,219	8,300	6,290	432,821	2,086,812	570 3,661
Elk	962,935	467,444		3,038	735,131	2,168,548	622 3,486
Juniata	1,167,097	536,606	3,825	6,350	395,224	2,109,103	770 2,739
Total	13,231,200	7,872,302	15,695	156,505	7,764,652	29,040,355	7,830 3,709
District 3							
Columbia	1,347,443	567,886	2,495	897	525,598	2,444,320	1,102 2,218

Appendix I Continued

2016-17								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Lycoming	1,826,064	800,711	5,501	57,856	787,346	3,477,478	1,690	2,058
Montour	493,952	230,560	1,091	15,169	163,767	904,539	400	2,261
Northumberland	1,365,608	622,523		107,563	560,385	2,656,079	1,208	2,199
Snyder	586,347	221,475		93,311	259,337	1,160,470	662	1,753
Sullivan	637,412	283,499	3,375		337,337	1,261,623	491	2,569
Tioga	1,936,725	795,597	4,452	94,477	981,753	3,813,005	1,373	2,777
Union	673,607	266,024	450	70,368	284,686	1,295,136	660	1,962
Bradford	2,034,783	829,431	10,349	101,125	1,111,817	4,087,505	1,841	2,220
Total	10,901,941	4,617,707	27,713	540,765	5,012,027	21,100,154	9,427	2,238
District 4								
Lackawanna	2,985,900	1,584,840	483,914	163,918	1,828,029	7,046,603	1,539	4,579
Luzerne	3,951,528	1,973,600	950,917	418,562	2,293,625	9,588,231	2,290	4,187
Pike	1,007,814	603,957	144,733	100,235	1,083,681	2,940,421	753	3,905
Susquehanna	2,844,966	1,362,577	13,980	23,766	2,013,886	6,259,174	1,636	3,826
Wayne	1,994,371	849,253	403,577	53,182	1,293,411	4,593,793	1,479	3,106
Wyoming	1,095,273	473,858	1,139	56,132	528,664	2,155,066	769	2,802
Total	13,879,853	6,848,084	1,998,259	815,795	9,041,296	32,583,288	8,466	3,849
District 5								
Berks	1,367,812	844,656	331,132	469,903	572,639	3,586,142	2,264	1,584
Carbon	1,103,935	621,944	22,124	24,721	528,363	2,301,087	619	3,717
Lehigh	1,280,249	735,959	189,915	110,810	610,654	2,927,586	1,427	2,052

Appendix I Continued

2016-17								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Monroe	2,235,230	1,062,338	63,628	67,548	1,157,138	4,585,882	1,267	3,619
Northampton	1,674,468	961,412	108,737	205,925	584,978	3,535,521	1,248	2,833
Schuylkill	2,442,614	1,200,557	85,406	48,717	1,224,761	5,002,055	1,515	3,302
Total	10,104,308	5,426,866	800,942	927,624	4,678,533	21,938,273	8,340	2,630
District 6								
Bucks	1,497,338	497,011	1,285,776	207,596	1,255,659	4,743,379	2,691	1,763
Chester	2,073,440	702,476	1,687,722	416,275	1,036,528	5,916,441	2,615	2,263
Delaware	1,011,534	265,829	1,277,518	224,061	552,000	3,330,942	1,634	2,039
Montgomery	1,511,194	701,947	506,749	827,687	605,790	4,153,366	2,376	1,748
Philadelphia	614,674	211,822	611,272	2,500,000	342,365	4,280,132	2,070	2,068
Total	6,708,179	2,379,084	5,369,036	4,175,619	3,792,342	22,424,260	11,386	1,969
District 8								
Adams	1,287,001	590,095	38,430	19,009	347,282	2,281,817	1,220	1,870
Cumberland	1,915,428	874,390	34,251	78,206	766,472	3,668,746	1,474	2,489
Franklin	1,204,152	690,582	81,758	51,812	486,318	2,514,622	1,397	1,800
York	1,945,081	890,577	308,085	205,689	657,932	4,007,364	2,692	1,489
Dauphin	923,988	494,132	83,540	234,276	479,309	2,215,245	1,596	1,388
Lancaster	1,373,978	620,676	153,814	224,536	547,125	2,920,129	2,517	1,160
Lebanon	920,658	588,870		57,402	379,251	1,946,181	902	2,158
Perry	1,222,073	608,613		63,654	554,921	2,449,260	934	2,622
Total	10,792,359	5,357,935	699,877	934,583	4,218,611	22,003,365	12,732	1,728

Appendix I Continued

2016-17								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 9								
Bedford	1,874,049	1,052,304		26,713	931,842	3,884,908	1,724	2,253
Blair	1,402,900	815,244		55,862	790,344	3,064,349	1,209	2,535
Cambria	1,970,179	1,083,581		157,501	1,548,317	4,759,578	1,577	3,018
Fulton	1,204,381	615,985			396,228	2,216,593	734	3,020
Huntingdon	1,428,264	808,664		19,632	568,693	2,825,253	1,234	2,290
Somerset	3,726,594	1,640,826	7,460	67,444	2,050,899	7,493,224	1,873	4,001
Total	11,606,367	6,016,604	7,460	327,152	6,286,322	24,243,906	8,351	2,903
District 10								
Armstrong	1,512,272	563,552		44,906	913,382	3,034,112	1,414	2,146
Butler	2,556,904	1,071,557		73,059	1,474,032	5,175,552	1,588	3,259
Clarion	1,610,961	834,314		521	939,624	3,385,420	1,029	3,290
Indiana	2,191,589	933,849		14,061	1,243,774	4,383,273	1,780	2,463
Jefferson	1,816,755	745,187		18,600	1,284,458	3,864,999	1,193	3,240
Total	9,688,481	4,148,459	0	151,147	5,855,270	19,843,357	7,004	2,833
District 11								
Allegheny	3,294,186	1,539,916	317,171	2,172,229	1,902,997	9,226,500	3,632	2,540
Beaver	1,352,135	822,708		180,135	902,221	3,257,198	1,432	2,275
Lawrence	1,036,920	964,540		111,365	657,262	2,770,087	912	3,037
Total	5,683,241	3,327,164	317,171	2,463,729	3,462,480	15,253,785	5,976	2,553

Appendix I Continued

2016-17								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 12								
Fayette	1,779,693	1,067,022	930	108,897	1,315,672	4,272,214	1,711	2,497
Greene	1,293,279	428,582	4,144	77,505	386,149	2,189,658	1,201	1,823
Washington	2,141,075	1,003,404	84,000	519,248	1,438,513	5,186,240	2,531	2,049
Westmoreland	3,377,832	1,710,007	29,437	364,812	2,138,246	7,620,333	2,788	2,733
Total	8,591,879	4,209,015	118,510	1,070,462	5,278,579	19,268,445	8,231	2,341
Statewide Totals	112,752,828	59,013,800	9,394,137	12,571,540	61,836,606	255,568,912	96,239	2,656

2017-18								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1								
Crawford	\$2,874,001	2,129,407	806	185,644	1,421,982	6,611,840	1,970	3,356
Erie	3,562,257	2,516,763	21,497	516,183	2,049,564	8,666,264	2,057	4,212
Forest	453,902	332,152			208,458	994,512	405	2,455
Mercer	2,481,447	1,772,556			1,336,139	5,590,142	1,759	3,178
Venango	2,066,622	1,492,837		84,797	1,089,945	4,734,200	1,185	3,994
Warren	1,340,519	821,838		120,662	569,183	2,852,202	1,124	2,537
Total	12,778,748	9,065,553	22,303	907,285	6,675,272	29,449,160	8,501	3,464
District 2								
Centre	2,229,191	1,313,525		68,939	1,156,822	4,768,477	223	21,351
Clearfield	3,406,104	2,303,915	48	2,697	2,034,012	7,746,776	1,487	5,210

Appendix I Continued

2017-18								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Clinton	823,343	734,726		33,424	482,106	2,073,599	1,752	1,183
Cameron	387,659	348,352			174,952	910,962	712	1,280
McKean	1,518,330	796,585	1,125	49,920	935,607	3,301,568	621	5,319
Potter	1,692,004	1,270,080		10,653	868,013	3,840,750	769	4,995
Mifflin	988,875	648,517	3,800	6,478	390,799	2,038,469	810	2,518
Elk	1,053,042	574,515	2,813	2,700	822,680	2,455,749	570	4,311
Juniata	1,045,499	555,965		6,541	408,568	2,016,573	881	2,290
Total	13,144,047	8,546,181	7,785	181,353	7,273,559	29,152,924	7,824	3,726
District 3								
Columbia	1,350,680	647,857	360	924	631,217	2,631,038	1,840	1,430
Lycoming	1,889,086	846,592	4,760	69,818	734,353	3,544,609	1,101	3,220
Montour	481,962	256,318	738	16,329	191,917	947,265	1,689	561
Northumberland	1,434,254	752,521		110,357	677,687	2,974,818	399	7,450
Snyder	584,214	221,965		95,728	274,591	1,176,498	1,212	971
Sullivan	679,636	337,194			366,500	1,383,329	662	2,090
Tioga	1,871,230	804,217	2,533	104,023	894,546	3,676,549	491	7,495
Union	606,252	283,200		72,163	278,609	1,240,224	1,368	907
Bradford	1,993,928	920,810	2,900	103,389	1,138,558	4,159,585	659	6,311
Total	10,891,242	5,070,674	11,291	572,730	5,187,979	21,733,916	9,420	2,307
District 4								
Lackawanna	3,239,366	1,793,247	590,946	122,389	2,125,763	7,871,711	1,537	5,120
Luzerne	3,702,875	2,023,390	909,250	313,610	2,626,162	9,575,286	2,289	4,183
Pike	1,117,941	712,485	348,999	42,530	1,162,013	3,383,968	750	4,509

Appendix I Continued

2017-18								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Susquehanna	2,823,354	1,536,900	17,545	15,688	1,937,468	6,330,954	1,635	3,873
Wayne	2,015,948	957,832	408,451	35,660	1,293,457	4,711,348	1,479	3,186
Wyoming	1,124,863	599,390		45,010	506,578	2,275,841	764	2,978
Total	14,024,346	7,623,243	2,275,191	574,887	9,651,440	34,149,107	8,454	4,039
District 5								
Berks	1,710,290	1,224,307	561,629	481,784	1,108,285	5,086,294	2,268	2,243
Carbon	1,416,774	856,469	61,547	25,247	717,895	3,077,932	618	4,979
Lehigh	1,698,113	1,099,540	272,088	116,871	885,217	4,071,829	1,426	2,856
Monroe	2,832,110	1,457,522	102,306	78,982	1,544,848	6,015,769	1,266	4,752
Northampton	1,967,690	1,173,283	257,552	197,307	910,142	4,505,974	1,244	3,622
Schuylkill	2,978,924	1,576,868	141,138	50,179	1,872,282	6,619,390	1,512	4,378
Total	12,603,901	7,387,989	1,396,259	950,369	7,038,669	29,377,188	8,334	3,525
District 6								
Bucks	2,250,832	763,279	3,750,839	233,643	2,228,340	9,226,933	2,652	3,480
Chester	2,449,181	927,457	3,454,791	497,189	2,320,521	9,649,139	2,592	3,722
Delaware	1,527,220	467,766	3,377,905	272,743	1,113,624	6,759,258	1,604	4,214
Montgomery	1,978,845	803,767	1,224,716	1,009,700	1,629,746	6,646,774	2,351	2,827
Philadelphia	1,035,845	297,717	1,085,515	2,500,000	832,683	5,751,760	2,028	2,837
Total	9,241,923	3,259,986	12,893,766	4,513,274	8,124,914	38,033,864	11,227	3,388
District 8								
Adams	1,421,728	760,111	19,425	24,367	531,587	2,757,219	1,218	2,263
Cumberland	2,345,403	1,149,090	3,150	99,315	1,396,757	4,993,716	1,474	3,388
Franklin	1,329,158	847,391	102,998	66,707	596,794	2,943,049	1,592	1,848

Appendix I Continued

2017-18								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
York	2,291,503	1,203,347	372,338	221,594	1,115,053	5,203,834	1,396	3,729
Dauphin	1,338,532	694,675	68,250	280,291	748,261	3,130,008	2,532	1,236
Lancaster	2,014,479	997,072	273,302	290,628	1,125,387	4,700,867	901	5,216
Lebanon	1,135,616	764,280		106,164	604,139	2,610,199	933	2,797
Perry	1,362,452	772,242		63,063	675,895	2,873,652	2,685	1,070
Total	13,238,870	7,188,209	839,462	1,152,129	6,793,873	29,212,543	12,731	2,295
District 9								
Bedford	1,897,299	1,219,489		27,614	1,010,595	4,154,998	1,721	2,414
Blair	1,518,574	926,398		58,087	841,492	3,344,552	1,207	2,772
Cambria	2,307,141	1,367,094	952	192,990	1,821,717	5,689,893	1,575	3,613
Fulton	1,042,603	577,297			447,839	2,067,739	733	2,819
Huntingdon	1,366,379	824,932		19,422	535,965	2,746,697	1,234	2,226
Somerset	3,270,724	1,789,062	6,142	68,761	2,402,115	7,536,804	1,873	4,024
Total	11,402,721	6,704,270	7,094	366,875	7,059,723	25,540,683	8,343	3,061
District 10								
Armstrong	1,713,107	766,608		45,281	1,205,948	3,730,944	1,411	2,644
Butler	2,812,613	1,252,594	7,040	75,250	1,880,521	6,028,018	1,589	3,793
Clarion	1,551,291	934,229		542	998,518	3,484,580	1,028	3,388
Indiana	2,548,398	1,240,141		8,802	1,525,667	5,323,008	1,780	2,991
Jefferson	1,760,715	821,704		19,158	1,384,487	3,986,064	1,192	3,344
Total	10,386,125	5,015,275	7,040	149,033	6,995,140	22,552,613	7,000	3,222
District 11								
Allegheny	3,875,226	1,934,665	898,491	2,524,988	3,225,320	12,458,690	3,629	3,433

Appendix I Continued

2017-18								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Beaver	1,746,320	1,057,386	5,076	221,463	1,200,517	4,230,761	1,432	2,954
Lawrence	1,149,097	1,002,775		112,636	704,418	2,968,925	911	3,259
Total	6,770,642	3,994,826	903,567	2,859,086	5,130,254	19,658,376	5,972	3,292
District 12								
Fayette	2,101,326	1,456,098	1,050	112,164	1,844,725	5,515,364	1,705	3,234
Greene	1,576,358	603,374	3,200	92,514	665,177	2,940,622	1,199	2,452
Washington	2,496,468	1,350,226	149,074	552,354	1,966,742	6,514,863	2,525	2,581
Westmoreland	3,881,576	2,113,772	35,863	369,490	2,784,239	9,184,940	2,781	3,303
Total	10,055,728	5,523,469	189,187	1,126,522	7,260,883	24,155,789	8,210	2,942
Statewide Totals	124,538,294	69,379,675	18,552,945	13,353,542	77,191,706	303,016,163	96,017	3,156

2018-19								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1								
Crawford	\$2,645,345	\$1,287,025	\$0	\$189,219	\$1,347,218	\$5,468,806	1,974	\$2,770
Erie	3,347,200	1,752,679	22,610	536,349	1,700,742	7,359,580	2,058	3,576
Forest	457,067	338,373	0	786	224,900	1,021,127	404	2,526
Mercer	2,696,294	1,274,666	0	0	1,040,455	5,011,415	1,762	2,844
Venango	1,809,781	940,052	0	87,677	853,989	3,691,499	1,187	3,111
Warren	1,182,626	819,440	0	148,091	503,769	2,653,926	1,119	2,371
Total	12,138,311	6,412,235	22,610	962,123	5,671,073	25,206,353	8,504	2,964
District 2								
Centre	2,351,347	1,527,452	0	77,953	1,488,703	5,445,454	223	24,386

Appendix I Continued

2018-19								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contract	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Miles
Clearfield	3,475,868	2,573,032	0	12,518	2,070,342	8,131,760	1,487	5,469
Clinton	918,363	792,791	0	34,761	580,805	2,326,719	1,752	1,328
Cameron	330,788	284,843	0	0	182,317	797,948	712	1,121
McKean	1,434,676	1,039,458	28,408	51,873	922,521	3,476,935	621	5,601
Potter	1,564,976	1,380,538	0	11,079	838,124	3,794,716	759	4,997
Mifflin	791,506	605,059	24,300	7,003	377,325	1,805,193	809	2,232
Elk	1,105,224	678,602	5,022	2,700	855,046	2,646,593	570	4,646
Juniata	851,520	576,993	0	6,803	286,902	1,722,216	881	1,956
Total	12,824,267	9,458,767	57,730	204,689	7,602,082	30,147,535	7,813	3,859
District 3								
Columbia	1,387,303	702,891	15	961	588,127	2,679,296	1,841	1,456
Lycoming	2,149,503	991,755	4,975	67,168	880,711	4,094,112	1,100	3,723
Montour	536,758	287,498	0	13,480	219,740	1,057,475	1,689	626
Northumberland	1,409,200	703,394	0	92,850	805,472	3,010,916	399	7,540
Snyder	595,382	262,042	500	86,282	373,308	1,317,514	1,202	1,096
Sullivan	710,634	342,849	1,203	0	395,379	1,450,065	662	2,190
Tioga	1,935,148	916,900	2,505	86,005	914,846	3,855,405	491	7,859
Union	675,164	315,942	1,550	64,087	350,088	1,406,831	1,368	1,029
Bradford	1,985,730	972,346	4,908	71,825	1,183,034	4,217,844	659	6,400
Total	11,384,824	5,495,616	15,656	482,657	5,710,705	23,089,458	9,410	2,454
District 4								
Lackawanna	2,706,981	1,600,348	522,796	126,800	1,741,565	6,698,489	1,538	4,357
Luzerne	3,613,688	2,005,087	844,681	318,047	2,510,135	9,291,638	2,301	4,038
Pike	991,238	580,835	216,437	46,790	863,446	2,698,747	750	3,596
Susquehanna	2,481,333	1,379,962	10,149	16,316	1,752,590	5,640,349	1,635	3,450

Appendix I Continued

2018-19									
County	Total Personnel	Department Equipment	Rentals	Maintenance Contract	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Miles	
Wayne	1,935,377	897,606	328,789	36,984	1,267,755	4,466,511	1,479	3,020	
Wyoming	1,003,948	500,730	0	46,810	553,675	2,105,163	764	2,755	
Totals	12,732,565	6,964,567	1,922,852	591,747	8,689,166	30,900,897	8,466	3,650	
District 5									
Berks	1,692,025	1,115,822	644,022	501,858	1,227,405	5,181,132	2,271	2,282	
Carbon	1,402,552	837,698	72,917	28,631	690,022	3,031,821	618	4,904	
Lehigh	1,776,024	1,028,160	232,038	142,741	724,491	3,903,453	1,427	2,735	
Monroe	2,405,348	1,296,136	226,448	115,511	1,370,956	5,414,399	1,266	4,277	
Northampton	1,798,038	983,315	269,455	238,426	823,629	4,112,863	1,250	3,291	
Schuylkill	2,814,923	1,501,901	99,550	76,412	1,438,326	5,931,112	1,514	3,918	
Total	11,888,910	6,763,032	1,544,429	1,103,578	6,274,829	27,574,779	8,345	3,304	
District 6									
Bucks	1,882,201	632,322	2,729,644	240,473	1,699,604	7,184,244	2,645	2,716	
Chester	2,414,719	863,691	3,081,099	517,075	2,335,235	9,211,820	2,593	3,553	
Delaware	1,073,013	363,034	1,830,610	283,652	775,554	4,325,863	1,594	2,714	
Montgomery	2,180,439	821,831	1,085,051	1,001,372	1,163,650	6,252,343	2,351	2,660	
Philadelphia	720,623	210,538	669,979	2,506,521	458,563	4,566,223	2,013	2,269	
Total	8,270,996	2,891,416	9,396,382	4,549,093	6,432,605	31,540,493	11,195	2,817	
District 8									
Adams	1,564,221	775,949	25,035	32,925	608,189	3,006,320	1,218	2,467	
Cumberland	2,006,301	1,020,365	0	118,303	1,462,030	4,606,999	1,472	3,129	
Franklin	1,580,131	1,000,514	136,617	73,729	867,051	3,658,042	1,593	2,296	
York	2,803,147	1,410,529	730,440	271,226	1,121,198	6,336,540	1,395	4,542	
Dauphin	1,310,913	702,877	82,063	295,545	868,992	3,260,390	2,528	1,290	
Lancaster	1,961,820	981,541	296,157	305,942	1,061,803	4,607,262	901	5,112	

Appendix I Continued

		2018-19						
County	Total Personnel	Department Equipment	Rentals	Maintenance Contract	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Miles
Lebanon	1,113,040	696,158	0	114,764	634,595	2,558,559	933	2,741
Perry	1,369,091	763,729	0	72,626	884,068	3,089,515	2,683	1,151
Total	13,708,664	7,351,664	1,270,311	1,285,061	7,507,928	31,123,627	12,725	2,446
District 9								
Bedford	2,342,274	1,461,302	0	28,719	1,267,325	5,099,620	1,721	2,963
Blair	1,777,350	920,634	0	48,189	991,548	3,737,721	1,208	3,095
Cambria	2,590,314	1,482,679	0	197,198	2,217,044	6,487,235	1,575	4,120
Fulton	1,394,364	743,224	0	0	711,555	2,849,142	733	3,886
Huntingdon	1,785,968	1,138,371	0	20,199	629,862	3,574,400	1,237	2,889
Somerset	3,728,643	2,133,893	8,521	71,512	2,839,183	8,781,752	1,910	4,599
Total	13,618,913	7,880,103	8,521	365,816	8,656,517	30,529,870	8,383	3,642
District 10								
Armstrong	1,492,681	681,240	0	47,560	1,051,568	3,273,050	1,412	2,317
Butler	2,927,223	1,227,479	1,020	78,570	1,835,747	6,070,038	1,589	3,820
Clarion	1,636,506	932,956	0	564	897,315	3,467,339	1,028	3,372
Indiana	2,417,705	1,128,693	0	0	1,428,093	4,974,491	1,780	2,795
Jefferson	1,728,328	847,612	0	19,925	1,354,659	3,950,524	1,194	3,309
Total	10,202,442	4,817,980	1,020	146,618	6,567,382	21,735,442	7,003	3,104
District 11								
Allegheny	3,985,067	2,021,073	570,396	2,674,562	2,426,452	11,677,551	3,631	3,216
Beaver	1,678,154	997,538	66,646	230,623	1,152,629	4,125,590	1,435	2,874
Lawrence	1,263,996	1,132,351	750	117,141	640,529	3,154,767	912	3,460
Total	6,927,217	4,150,962	637,792	3,022,327	4,219,610	18,957,908	5,978	3,171

Appendix I Continued

2018-19									
County	Total Personnel	Department Equipment	Rentals	Maintenance Contract	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Miles	
District 12									
Fayette	2,158,757	1,435,342	1,749	117,550	1,393,500	5,106,899	1,705	2,995	
Greene	1,646,328	605,762	2,080	97,115	679,274	3,030,559	1,200	2,525	
Washington	2,344,238	1,249,686	210,296	570,307	1,573,853	5,948,381	2,525	2,356	
Westmoreland	3,819,201	2,034,767	143,518	389,047	2,371,439	8,757,972	2,781	3,150	
Total	9,968,524	5,325,557	357,644	1,174,019	6,018,066	22,843,810	8,211	2,782	
Statewide Totals	123,665,633	67,511,900	15,234,947	13,887,728	73,349,963	293,650,172	96,034	3,058	
FY 2019-20									
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile	
District 1									
Crawford	\$2,589,554	\$1,426,330		\$197,487	\$1,205,375	\$5,418,746	1,973	\$2,746	
Erie	2,918,438	2,502,203	7,308	499,895	1,667,435	7,595,278	2,069	3,671	
Forest	391,700	347,623			143,214	882,538	403	2,191	
Mercer	2,713,495	1,397,340			1,035,667	5,146,502	1,762	2,921	
Venango	1,702,122	966,128		96,134	710,231	3,474,615	1,187	2,927	
Warren	1,143,816	989,680		125,488	562,414	2,821,398	1,120	2,519	
Total	11,459,126	7,629,304	7,308	919,004	5,324,335	25,339,077	8,514	2,976	
District 2									
Centre	1,779,513	1,099,656		81,250	745,375	3,705,794	1,491	2,486	
Clearfield	2,571,048	1,898,186		2,805	1,282,295	5,754,334	1,752	3,284	
Clinton	720,131	639,869		39,159	358,734	1,757,893	712	2,469	
Cameron	285,975	288,868			146,988	721,831	223	3,237	
McKean	1,485,497	1,385,844	4,582	60,505	789,741	3,726,169	809	4,606	

Appendix I Continued

FY 2019-20								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Potter	1,439,344	1,315,434		12,441	740,366	3,507,586	880	3,986
Mifflin	582,122	437,375		7,003	185,571	1,212,070	571	2,123
Elk	1,005,493	793,273		3,155	747,222	2,549,143	621	4,105
Juniata	408,871	342,485	1,600	6,803	79,572	839,331	760	1,104
Total	10,277,994	8,200,989	6,182	213,121	5,075,864	23,774,151	7,819	3,041
District 3								
Columbia	1,005,617	531,656		961	367,068	1,905,301	1,102	1,729
Lycoming	1,695,211	781,671	12,120	75,645	665,908	3,230,556	1,690	1,912
Montour	368,080	215,551		16,510	96,076	696,218	399	1,743
Northumberland	1,029,186	474,556		99,648	388,686	1,992,076	1,205	1,654
Snyder	498,132	177,016	360	97,184	165,475	938,166	662	1,417
Sullivan	597,685	333,887			377,638	1,309,210	491	2,667
Tioga	1,583,220	731,585	4,058	92,267	976,060	3,387,190	1,366	2,480
Union	536,679	234,723		70,970	188,966	1,031,339	659	1,565
Bradford	1,607,604	842,296	1,650	78,384	973,921	3,503,855	1,840	1,904
Total	8,921,414	4,322,942	18,188	531,569	4,199,797	17,993,909	9,414	1,911
District 4								
Lackawanna	2,670,330	1,608,387	391,799	128,433	1,578,878	6,377,827	1,539	4,143
Luzerne	3,386,158	1,874,557	365,928	343,666	1,800,939	7,771,248	2,319	3,351
Pike	843,773	499,123	201,919	46,790	658,097	2,249,701	753	2,989
Susquehanna	1,964,374	1,106,528	7,475	16,316	1,406,247	4,500,939	1,670	2,695
Wayne	1,744,500	841,514	146,357	49,213	1,057,233	3,838,816	1,478	2,598
Wyoming	736,288	371,967		47,871	352,795	1,508,921	763	1,977
Total	11,345,421	6,302,076	1,113,478	632,288	6,854,189	26,247,452	8,522	3,080

Appendix I Continued

FY 2019-20								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 5								
Berks	819,184	549,281	257,118	501,858	177,268	2,304,708	2,277	1,012
Carbon	1,242,465	849,375	41,931	31,572	487,112	2,652,455	619	4,286
Lehigh	1,063,984	741,764	134,257	143,278	264,695	2,347,978	1,433	1,639
Monroe	2,195,939	1,147,547	121,587	115,511	910,694	4,491,278	1,263	3,555
Northampton	1,229,648	747,510	85,146	219,589	362,306	2,644,199	1,248	2,119
Schuylkill	2,551,108	1,374,063	54,640	88,531	1,013,234	5,081,576	1,514	3,357
Total	9,102,327	5,409,540	694,679	1,100,338	3,215,310	19,522,194	8,354	2,337
District 6								
Bucks	884,520	410,460	1,056,893	347,469	434,506	3,133,848	2,663	1,177
Chester	1,195,173	458,148	1,020,541	607,765	335,701	3,617,328	2,599	1,392
Delaware	332,780	127,845	675,234	436,554	54,108	1,626,520	1,603	1,015
Montgomery	895,361	422,466	315,777	1,278,450	204,917	3,116,971	2,356	1,323
Philadelphia	271,360	102,241	215,806	2,500,000	28,700	3,118,106	2,009	1,552
Total	3,579,195	1,521,160	3,284,250	5,170,238	1,057,931	14,612,773	11,229	1,301
District 8								
Adams	907,192	452,239	48,000	34,402	136,163	1,577,995	1,217	1,297
Cumberland	1,359,364	708,607	108,125	108,125	257,042	2,433,138	1,478	1,646
Franklin	747,651	655,098	37,448	84,731	174,328	1,699,256	1,395	1,218
York	1,027,136	470,392	250,208	241,608	222,013	2,211,358	2,691	822
Dauphin	460,693	266,550	15,410	295,545	218,394	1,256,591	1,601	785
Lancaster	879,634	432,612	133,799	307,048	175,215	1,928,307	2,527	763
Lebanon	631,825	360,124	115,041	115,041	118,198	1,225,188	902	1,358
Perry	782,246	465,700	78,857	78,857	231,443	1,558,246	933	1,670
Total	6,795,740	3,811,322	484,865	1,265,356	1,532,797	13,890,079	12,744	1,090

Appendix I Continued

FY 2019-20								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 9								
Bedford	1,545,953	956,143		30,434	569,672	3,102,202	1,722	1,802
Blair	1,295,353	826,914		48,189	543,503	2,713,959	1,209	2,245
Cambria	2,217,787	1,127,859		224,281	1,483,039	5,052,966	1,577	3,203
Fulton	945,096	685,177			272,139	1,902,413	726	2,621
Huntingdon	1,115,234	699,798		23,993	398,708	2,237,734	1,237	1,809
Somerset	2,800,172	1,527,164	3,063	80,952	1,953,524	6,364,876	1,912	3,329
Total	9,919,595	5,823,057	3,063	407,849	5,220,585	21,374,149	8,383	2,550
District 10								
Armstrong	1,444,161	672,953		47,560	792,623	2,957,297	1,412	2,094
Butler	2,707,249	1,150,860	6,539	78,168	1,590,439	5,533,254	1,591	3,477
Clarion	1,201,847	763,502		564	656,724	2,622,637	1,027	2,553
Indiana	1,895,070	859,799		4,355	971,476	3,730,701	1,779	2,097
Jefferson	1,552,046	723,737		19,925	1,036,901	3,332,610	1,196	2,787
Total	8,800,373	4,170,851	6,539	150,571	5,048,163	18,176,498	7,006	2,595
District 11								
Allegheny	2,868,860	1,587,944	142,316	2,722,646	1,194,438	8,516,205	3,623	2,351
Beaver	1,395,826	796,847	19,687	230,623	665,072	3,108,054	1,436	2,164
Lawrence	1,373,804	1,063,999	1,238	120,607	390,733	2,950,380	910	3,242
Total	5,638,490	3,448,791	163,240	3,073,876	2,250,243	14,574,639	5,969	2,442
District 12								
Fayette	1,546,065	1,108,167	10,613	119,788	861,353	3,645,985	1,705	2,138
Greene	1,301,286	610,599		96,215	410,188	2,418,289	1,198	2,018
Washington	1,657,816	948,888	42,698	585,874	818,575	4,053,852	2,527	1,605

Appendix I Continued

FY 2019-20								
County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Westmoreland	3,258,659	1,605,057	65,508	375,346	1,370,481	6,675,051	2,780	2,402
Total	7,763,826	4,272,712	118,819	1,177,223	3,460,597	16,793,177	8,210	2,046
Statewide Totals	93,603,500	54,912,743	5,900,610	14,641,434	43,239,811	212,298,098	96,164	2,208

FY 2020-21								
District/County	Personnel	Equipment	Rentals	Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1								
Crawford	\$1,707,396	\$1,204,739		216,006	\$1,204,739	4,332,880	1861	\$2,328
Erie	2,473,732	1,752,679		537,060	1,728,890.59	6,492,362	1755	3,699
Forest	854,039	390,231			207,749.97	1,452,020	403	3,603
Mercer	2,030,463	1,509,786			1,134,101.03	4,674,350	1570	2,977
Venango	1,572,289	925,859		61,733	1,114,809.17	3,674,690	1145	3,209
Warren	1,093,347	983,632		55,373	620,526.54	2,752,879	1091	2,523
Total	\$9,731,266	\$6,766,926	\$0	\$870,173	\$6,010,816	\$23,379,181	7825	\$2,998
District 2								
Centre	\$1,776,084	\$1,751,659		\$79,072	\$1,637,272	\$5,244,087	1445	\$3,629
Clearfield	2,404,197	2,348,869		3,042	1,881,704	6,637,812	1750	3,793
Clinton	1,309,801	802,222	5,750	35,878	559,254	2,712,905	681	3,984
Cameron	435,665	477,270	7,072		138,000	1,058,007	223	
McKean	1,161,782	1,399,571	10,450	58,841	735,238	3,365,882	776	4,337
Potter	1,462,069	1,564,129	2,380	12,792	818,032	3,859,402	873	4,421
Mifflin	878,374	793,545	18,250	7,518	438,531	2,136,218	564	3,788
Elk	914,145	964,376		3,083	824,930	2,706,534	623	4,344
Juniata	718,511	653,916	2,750	7,027	187,359	1,569,563	748	2,098
Total	\$11,060,627	\$10,755,558	\$46,652	\$207,252	\$7,220,320	\$29,290,409	7683	\$3,812

Appendix I Continued

FY 2020-21								
District/County	Personnel	Equipment	Rentals	Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 3								
Columbia	\$1,080,347	\$627,992	\$327	\$990	\$657,575	\$2,367,231	1090	\$2,172
Lycoming	1,873,492	1,030,489	16,480.00	49,936	1,090,327	4,060,725	1606	2,528
Montour	393,668	264,754	\$732.00	13,885	211,532	884,570	383	2,310
Northumberland	1,244,181	760,438		104,104	827,644	2,936,366	1114	2,636
Snyder	592,387	294,094		85,310	364,350	1,336,141	575	2,324
Sullivan	534,189	326,934	\$2,436.00		439,876	1,303,435	499	2,612
Tioga	1,501,544	858,858.15	5,850.00	90,771	1,033,393	3,490,416	1310	2,664
Union	646,627	357,911.50		65,555	391,715	1,461,809	595	2,457
Bradford	1,781,980	1,123,935	4,868	73,981	1,132,693	4,117,457	1780	2,313
Total	\$9,648,413	\$5,645,406	\$30,693	\$484,530	\$6,149,103	\$21,958,145	8951	\$2,453
District 4								
Lackawanna	\$2,443,335	\$1,732,805	\$625,288	\$109,818	\$2,368,621	\$7,279,867	1453	\$5,010
Luzerne	3,007,998	1,952,096	\$666,183	\$323,001	\$3,158,096	\$9,107,374	2096	\$4,345
Pike	928,785	611,059	\$308,620	\$60,205	\$779,957	\$2,688,626	701	\$3,835
Susquehanna	1,823,822	1,268,483	\$40,815	\$3,003	\$1,858,516	\$4,994,639	1663	\$3,003
Wayne	1,532,071	905,491	\$388,026	\$43,172	\$1,263,643	\$4,132,404	1452	\$2,846
Wyoming	702,578	451,295	0	\$24,419	\$459,982	\$1,638,274	748	\$2,190
Total	\$10,438,589	\$6,921,229	\$2,028,933	\$563,618	\$9,888,815	\$29,841,184	8113	\$3,678
District 5								
Berks	\$1,545,050	\$1,144,913	\$932,326	\$547,826	\$961,219	\$5,131,333	1612	\$3,183
Carbon	1,687,509	914,151	\$62,556	\$25,842	\$726,087	\$3,416,145	590	\$5,790
Lehigh	1,212,311	952,579	\$537,881	\$174,291	\$813,691	\$3,690,752	1248	\$2,957
Monroe	2,104,787	1,335,466	\$204,395	\$104,098	\$1,443,707	\$5,192,453	1187	\$4,374
Northampton	1,570,046	954,635	\$396,787	\$213,232	\$930,609	\$4,065,308	971	\$4,187

Appendix I Continued

FY 2020-21								
District/County	Personnel	Equipment	Rentals	Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Schuylkill	1,920,324	1,532,205	\$178,432	\$0	\$1,474,575	\$5,105,535	1430	\$3,570
Total	\$10,040,028	\$6,833,949	\$2,312,375	\$1,065,288	\$6,349,886	\$26,601,526	7037	\$3,780
District 6								
Bucks	\$1,313,423	\$618,955	\$3,145,598	\$344,799	\$1,430,014	\$6,852,788	2178	\$3,146
Chester	1,707,894	827,261	\$3,298,844	\$528,668	\$1,989,339	\$8,352,007	2132	\$3,917
Delaware	625,479	309,855	\$2,564,217	\$333,279	\$956,054	\$4,788,884	1314	\$3,645
Montgomery	1,366,032	718,706	\$1,148,078	\$1,621,445	\$988,730	\$5,842,991	1351	\$4,325
Philadelphia	464,369	207,751	\$1,012,909	\$2,500,000	\$701,117	\$4,886,146	438	\$11,156
Total	\$5,477,197	\$2,682,528	\$11,169,646	\$5,328,191	\$6,065,253	\$30,722,815	7413	\$4,144
District 8								
Adams	\$1,027,757	\$679,842	\$14,765	\$29,429	\$428,977	\$2,180,770	1277	\$1,708
Cumberland	1,507,817	963,851	1,575	127,210	935,323	3,535,776	1359	2,602
Franklin	1,064,030	876,691	100,699	71,454	598,034	2,710,908	1333	2,034
York	1,692,951	1,187,996	651,941	246,136	1,007,956	4,786,980	2427	1,972
Dauphin	921,454	612,437	91,770	252,477	840,514	2,718,652	1295	2,099
Lancaster	1,462,995	933,818	301,841	303,502	830,880	3,833,036	2173	1,764
Lebanon	781,953	471,779		99,843	613,665	1,967,240	810	2,429
Perry	1,173,510	775,440	700	11,916	726,298	2,687,864	847	3,173
Total	\$9,632,467	\$6,501,854	\$1,163,291	\$1,141,967	\$5,981,647	\$24,421,227	11521	\$2,120
District 9								
Bedford	1,848,717	1,476,712		29,611	1,310,286	4,665,327	1671	2,792
Blair	1,522,224	1,013,716		65,253	1,071,707	3,672,900	1139	3,225
Cambria	2,379,708	1,647,151		152,496	2,039,102	6,218,458	1482	4,196
Fulton	988,505	994,663			588,595	2,571,763	745	3,452
Huntingdon	1,223,002	884,157		22,528	705,426	2,835,113	1218	2,328

Appendix I Continued

FY 2020-21								
District/County	Personnel	Equipment	Rentals	Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Somerset	2,820,251	1,815,728	3,140	73,835	2,224,905	6,937,859	1868	3,714
Total	\$10,782,407	\$7,832,128	\$3,140	\$343,723	\$7,940,022	\$26,901,420	8123	\$3,312
District 10								
Armstrong	1,555,176	780,377	943	\$47,373	1,311,083	3,694,953	1368	2,701
Butler	2,619,585	1,344,528	1,798	73,975	2,137,803	6,177,688	1524	4,054
Clarion	1,225,131	851,674		580	958,020	3,035,405	1033	2,938
Indiana	2,476,169	1,225,336		3,769	1,720,384	5,425,657	1773	3,060
Jefferson	1,509,936	760,722		21,265	1,364,152	3,656,075	1189	3,075
Total	\$9,385,997	\$4,962,637	\$2,741	\$146,962	\$7,491,441	\$21,989,779	6886	\$3,193
District 11								
Allegheny	3,240,241	1,991,460	771,842	2,976,083	3,489,924	\$12,469,551	2083	5,986
Beaver	1,253,379	793,169	80,711	318,147	1,443,817	3,889,222	1260	3,087
Lawrence	1,099,311	996,039		153,631	561,298	2,810,279	801	3,508
Total	\$5,592,931	\$3,780,668	\$852,553	\$3,447,861	\$5,495,039	\$19,169,052	4144	\$4,626
District 12								
Fayette	2,017,745	1,720,549	28,540	120,152	\$1,536,380	\$5,423,366	1620	\$3,348
Greene	1,447,523	843,901	400	99,098	855,613	3,246,535	1126	2,883
Washington	2,293,040	1,491,660	331,595	543,526	1,949,929	6,609,750	2091	3,161
Westmoreland	3,596,245	2,133,394	137,570	355,210	2,912,440	9,134,858	2488	3,672
Total	\$9,354,553	\$6,189,504	\$498,104	\$1,117,986	\$7,254,362	\$24,414,509	7325	\$3,333
Statewide Total	\$110,875,743	\$76,542,763	\$18,108,128	\$15,587,722	\$81,857,520	\$302,971,876	92846	\$3,263

Appendix I Continued

2021-22								
District/County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
District 1								
Crawford	\$2,771,587	\$1,474,350		\$223,111	\$1,126,601	\$5,383,016	1,908	\$2,821
Erie	3,653,284	2,104,499	700	728,560	1,776,203	7,535,009	1,794	4,199
Forest	416,792	399,975			132,947	951,522	403	2,359
Mercer	2,719,432	1,372,136			952,202	5,043,769	1,590	3,172
Venango	1,700,828	867,621		61,516	785,442	3,353,994	1,146	2,928
Warren	1,175,047	1,095,141		57,371	483,855	2,763,101	1,091	2,532
Total	12,436,970	7,313,722	700	1,070,557	5,257,250	25,030,412	7,932	3,155
District 2								
Centre	2,055,686	1,796,103	34,041	92,417	1,062,880	4,948,710	1,470	3,367
Clearfield	2,332,662	2,000,710		3,142	1,194,206	5,527,613	1,814	3,048
Clinton	955,803	755,254		49,087	487,295	2,198,352	681	3,230
Cameron	207,365	538,637			138,519	884,522	223	3,961
McKean	1,247,438	1,100,847	16,216		657,874	3,022,588	775	3,902
Potter	1,390,222	1,671,032	17,875	46,799	579,106	3,640,360	868	4,193
Mifflin	822,965	776,383		8,338	324,757	1,941,980	601	3,230
Elk	819,127	840,885		109	553,527	2,213,566	622	3,557
Juniata	738,485	563,426	825	7,258	182,935	1,485,672	748	1,985
Total	10,569,753	10,043,278	68,957	207,149	5,181,099	25,863,362	7,803	3,315
District 3								
Columbia	1,236,154	556,243		1,022	524,856	2,317,253	1,090	2,127
Lycoming	2,180,841	926,081	13,626	51,579	919,290	4,040,354	1,598	2,528
Montour	422,910	220,730		14,341	166,739	810,378	383	2,118
Northumberland	1,138,538	540,035		107,529	609,020	2,287,592	1,114	2,053
Snyder	619,217	257,105		88,116	298,633	1,174,955	574	2,046

Appendix I Continued

2021-22								
District/County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Sullivan	635,948	332,321			362,361	1,330,629	499	2,667
Tioga	1,586,628	696,434	563	93,757	931,400	3,215,039	1,325	2,427
Union	704,619	314,290		67,712	330,214	1,349,123	595	2,269
Bradford	1,861,841	894,210	3,150	76,416	900,157	3,659,502	1,779	2,057
Total	10,386,695	4,737,448	17,339	500,472	5,042,669	20,184,825	8,957	2,254
District 4								
Lackawanna	2,966,021	1,556,446	593,826	132,544	1,761,181	6,877,474	1,452	4,736
Luzerne	3,314,279	1,640,703	932,986	325,476	2,534,317	8,422,284	2,122	3,968
Pike	907,680	567,847	198,340	66,698	786,618	2,460,485	703	3,501
Susquehanna	2,529,711	1,364,651	55,275	11,614	1,384,144	5,344,678	1,718	3,112
Wayne	1,902,778	881,633	327,554	41,081	1,129,506	4,241,471	1,452	2,922
Wyoming	865,894	411,447		30,543	335,377	1,612,718	748	2,156
Total	12,486,363	6,422,726	2,107,981	607,956	7,931,142	28,959,109	8,195	3,534
District 5								
Berks	1,141,988	1,498,404	453,601	822,750	607,855	3,705,525	1,612	2,299
Carbon	1,149,554	749,937	48,345	8,236	671,350	2,619,185	590	4,442
Lehigh	1,243,845	778,604	273,931	219,515	498,464	2,794,843	1,241	2,251
Monroe	2,453,788	1,360,154	130,521	113,430	1,101,373	5,045,836	1,186	4,253
Northampton	1,520,204	912,529	350,455	238,677	758,112	3,543,201	971	3,649
Schuylkill	2,439,954	1,169,733	95,562	160,007	1,376,504	5,081,939	1,404	3,621
Total	9,949,333	6,469,360	1,352,415	1,562,614	5,013,657	22,790,529	7,004	3,254
District 6								
Bucks	1,402,794	510,881	2,211,799	287,497	1,471,456	5,596,930	2,195	2,550
Chester	1,401,930	591,799	2,207,729	663,005	1,199,774	5,404,619	2,089	2,587
Delaware	445,608	193,652	1,523,670	403,358	582,219	2,747,658	1,301	2,113

Appendix I Continued

2021-22								
District/County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Montgomery	1,495,000	682,388	932,551	1,305,935	751,295	3,861,234	1,490	2,591
Philadelphia	545,530	164,447	649,001	2,500,000	291,571	1,646,909	474	3,475
Total	5,290,861	2,143,156	7,524,751	5,159,795	4,296,315	19,257,350	7,549	2,551
District 8								
Adams	947,866	956,820	4,900	30,398	271,822	2,181,408	1,238	1,762
Cumberland	1,750,807	1,027,250	1,200	127,492	692,633	3,471,891	1,353	2,566
Franklin	1,008,835	621,655	55,668	73,580	357,221	2,043,379	1,335	1,531
York	1,785,091	1,934,199	315,917	209,992	693,033	4,728,240	2,410	1,962
Dauphin	1,173,731	612,804	43,843	366,740	512,300	2,342,678	1,296	1,808
Lancaster	1,494,614	700,422	174,688	412,879	499,015	2,868,739	2,170	1,322
Lebanon	964,001	509,051		103,128	384,350	1,857,402	810	2,292
Perry	1,104,027	612,298		10,733	369,417	2,087,436	847	2,465
Total	10,228,973	6,974,498	596,215	1,334,942	3,779,790	21,581,170	11,458	1,884
District 9								
Bedford	2,086,188	1,166,927		32,675	944,920	4,199,673	1,690	2,485
Blair	1,576,265	837,831	701	72,022	752,167	3,167,460	1,139	2,782
Cambria	2,524,500	1,352,257		180,064	1,670,308	5,547,101	1,492	3,719
Fulton	1,183,185	832,425			456,464	2,472,074	745	3,318
Huntingdon	1,471,786	905,773		23,269	589,642	2,967,263	1,218	2,437
Somerset	2,819,021	1,634,636	1,680	65,638	1,888,843	6,344,201	1,873	3,386
Total	11,660,946	6,729,850	2,381	373,668	6,302,344	24,697,773	8,156	3,028
District 10								
Armstrong	1,900,281	793,856		50,599	1,103,428	3,797,700	1,412	2,689
Butler	3,022,329	1,144,702	2,423	54,728	1,613,526	5,782,980	1,546	3,742
Clarion	1,180,793	635,142		600	691,931	2,508,162	1,035	2,422

Appendix I Continued

2021-22								
District/County	Total Personnel	Department Equipment	Rentals	Maintenance Contracts	Materials	Total Cost	County Snow Lane Miles	Cost Per Snow Lane Mile
Indiana	2,613,024	946,889		3,893	1,600,614	5,160,527	1,773	2,911
Jefferson	1,635,480	880,602		21,965	1,146,373	3,662,456	1,188	3,082
Total	10,351,907	4,401,192	2,423	131,784	6,155,873	20,911,825	6,954	3,007
District 11								
Allegheny	3,337,247	1,746,249	536,498	3,141,829	2,277,917	7,903,161	2,086	3,789
Beaver	1,366,976	704,253	271,399	328,613	1,123,210	3,465,838	1,261	2,748
Lawrence	1,312,219	901,333	1,569	151,710	686,198	2,901,335	801	3,623
Total	6,016,442	3,351,836	809,467	3,622,153	4,087,324	14,270,334	4,148	10,161
District 12								
Fayette	2,076,015	1,470,206	33,338	121,525	1,357,426	4,936,984	1,622	3,044
Greene	1,476,516	602,269	10,000	115,417	636,245	2,725,115	1,132	2,408
Washington	2,295,129	1,136,797	238,737	652,716	1,670,826	5,341,570	2,089	2,557
Westmoreland	3,508,955	1,631,774	100,082	95,411	2,642,939	7,888,650	2,488	3,171
Total	9,356,615	4,841,046	382,156	985,069	6,307,436	20,892,319	7,331	2,850
Statewide Total	108,734,858	63,428,112	12,864,784	15,556,160	59,354,899	244,439,007	85,485	2,859

Source: Developed by LBFC staff with data from PennDOT.

Appendix J: RoadMaP Miles Completed, Cost, and Savings by Engineering District and CMO

District	Miles	FY 2018-19			FY 2019-20		
		Actual Cost	Comparative Cost	Savings	Actual Cost	Comparative Cost	Savings
District 1							
Crawford	4	\$331,200	\$621,000	\$289,800	-	-	-
Erie	8	610,400	1,144,500	534,100	-	-	-
Forest	6	584,800	946,500	361,700	-	-	-
Mercer	7	568,000	1,065,000	497,000	-	-	-
Venango	4	355,200	1,780,500	732,900	-	-	-
Warren	12	1,047,660	1,780,500	732,900	-	-	-
Total	41	\$3,497,200	\$6,223,500	\$2,726,300	-	-	-
District 2							
Centre	6	494,400	927,000	432,600	2	137,600	258,000
Clearfield	7	730,200	1,095,300	365,100	-	-	-
Clinton	-	-	-	-	-	-	-
Elk	8	806,000	1,209,000	403,000	-	-	-
Juniata	4	295,200	553,500	258,300	6	609,500	914,250
McKean	10	982,000	1,473,000	491,000	2	196,000	294,000
Mifflin	2	172,000	258,000	86,000	3	304,500	456,750
Potter	20	1,814,600	2,962,500	1,147,900	-	-	-
TOTAL	57	\$5,294,400	\$8,478,300	\$3,183,900	13	\$1,247,600	\$1,923,000
District 3							
Bradford	3	255,000	382,500	127,500	10	973,000	1,459,500
Columbia	8	754,000	1,131,000	377,000	1	128,000	192,000
Lycoming	6	535,400	843,000	307,600	-	-	-
Montour	3	267,000	400,500	133,500	3	328,000	492,000
Northumber-land	-	-	-	-	7	655,000	982,500
Snyder	-	-	-	-	3	498,600	831,000

Appendix J Continued

		FY 2018-19				FY 2019-20			
District	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings	
Sullivan	1	113,600	213,000	99,400	1	149,000	223,500	74,500	
Tioga	-	-	-	-	9	907,000	1,423,500	516,500	
Union	8	736,000	1,147,500	411,500	5	258,000	387,000	129,000	
Total	27	\$2,661,000	\$4,117,500	\$1,456,500	40	\$3,896,600	\$5,991,000	\$2,094,400	
District 4									
Lackawanna	7	579,200	1,086,000	506,800	7	610,700	1,401,000	790,300	
Luzerne	5	393,600	738,000	344,400	5	393,600	738,000	344,400	
Pike	3	234,400	439,500	205,100	8	672,900	1,488,500	815,600	
Susquehanna	5	431,200	808,500	377,300	5	451,000	1,065,000	614,000	
Wayne	2	172,000	258,000	86,000	9	807,600	1,333,500	525,900	
Wyoming	3	259,200	486,000	226,800	3	291,600	810,000	518,400	
TOTAL	25	\$2,069,600	\$3,816,000	\$1,746,000	38	\$3,227,400	\$6,836,000	\$3,608,600	
District 5									
Berks	2	154,000	231,000	77,000	5	532,000	798,000	266,000	
Carbon	3	232,000	435,000	203,000	1	115,700	222,000	106,300	
Lehigh	5	535,000	802,500	267,500	3	291,000	436,500	145,500	
Monroe	3	212,000	397,500	185,500	-	-	-	-	
Northampton	1	132,000	198,000	66,000	1	132,000	198,000	66,000	
Schuylkill	4	370,000	555,000	185,000	3	303,000	454,500	151,500	
TOTAL	17	\$1,635,000	\$2,619,000	\$984,000	14	\$1,373,700	\$2,109,000	\$735,300	
District 6									
Bucks	14	1,352,000	2,028,000	676,000	9	950,400	2,160,000	1,209,600	
Chester	-	-	-	-	3	376,000	854,545	478,545	
Montgomery	-	-	-	-	3	293,000	439,500	146,500	
TOTAL	14	\$1,352,000	\$2,028,000	\$676,000	15	\$1,619,400	\$3,454,045	\$1,834,645	
District 8									
Adams	3	295,000	442,500	147,500	2	230,000	345,000	115,000	
Cumberland	2	173,000	259,500	86,500	4	357,000	535,500	178,500	

Appendix J Continued

		FY 2018-19				FY 2019-20			
District	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings	
Dauphin	2	229,000	343,500	114,500	3	162,800	370,000	207,200	
Franklin	5	452,000	678,000	226,000	1	630,900	1,752,500	1,121,600	
Lancaster	4	448,000	672,000	224,000	2	315,000	472,500	157,500	
Lebanon	1	130,000	195,000	65,000	2	246,000	369,000	123,000	
Perry	1	132,000	198,000	66,000	-	-	-	-	
York	3	216,000	405,000	189,000	7	208,000	312,000	104,000	
TOTAL	21	\$2,075,000	\$3,193,500	\$1,118,500	22	\$2,149,700	\$4,156,500	\$2,006,800	
District 9									
Bedford	16	1,604,000	2,406,000	802,000	14	1,584,000	3,600,000	2,016,000	
Blair	10	1,037,000	1,555,500	518,500	10	1,106,700	2,252,500	1,145,800	
Cambria	6	570,000	855,000	285,000	9	1,004,660	2,005,000	1,000,400	
Fulton	7	700,000	1,050,000	350,000	-	-	-	-	
Huntingdon	11	1,488,000	2,048,000	560,000	16	2,079,800	3,903,000	1,823,200	
Somerset	15	1,702,000	2,631,500	929,500	17	2,210,400	4,260,500	2,050,100	
TOTAL	66	\$7,101,000	\$10,546,000	\$3,445,000	68	\$7,985,500	\$16,021,000	\$8,035,500	
District 10									
Butler	3	290,000	435,000	145,000	-	-	-	-	
Clarion	-	-	-	-	8	780,000	1,170,000	390,000	
Indiana	2	200,000	300,000	100,000	10	990,000	1,485,000	495,000	
Jefferson	3	300,000	450,000	150,000	-	-	-	-	
TOTAL	8	\$790,000	\$1,185,000	\$395,000	18	\$1,770,000	\$2,655,000	\$885,000	
District 11									
Allegheny	2	220,000	330,000	110,000	12	1,150,000	1,725,000	575,000	
Lawrence	5	540,000	810,000	270,000	3	320,000	480,000	160,000	
TOTAL	8	\$760,000	\$1,140,000	\$380,000	15	\$1,470,000	\$2,205,000	\$735,000	
District 12									
Greene	-	-	-	-	2	150,000	225,000	75,000	

Appendix J Continued

		FY 2018-19			FY 2019-20			
District	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings
Washington	6	455,200	853,500	398,300	11	1,121,000	1,681,500	560,500
TOTAL	6	\$455,200	\$853,500	\$398,300	13	\$1,271,000	\$1,906,500	\$635,500
GRAND TOTAL	290	\$27,690,400	\$44,200,300	\$16,509,900	254	\$26,010,900	\$47,257,045	\$21,246,145

		FY 2020-21			FY 2021-22			
District	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings
District 1								
Crawford	-	-	-	-	-	-	-	-
Erie	-	-	-	-	-	-	-	-
Forest	-	-	-	-	-	-	-	-
Mercer	-	-	-	-	-	-	-	-
Venango	-	-	-	-	2	171,200	321,000	149,800
Warren	-	-	-	-	-	-	-	-
Total	-	-	-	-	2	\$171,200	\$321,000	\$149,800
District 2								
Centre	-	-	-	-	-	-	-	-
Clearfield	-	-	-	-	17	1,465,700	2,510,250	1,044,550
Clinton	-	-	-	-	4	401,400	602,100	200,700
Elk	-	-	-	-	-	-	-	-
Juniata	-	-	-	-	6	625,000	937,500	312,500
McKean	-	-	-	-	6	893,120	1,283,860	390,740
Mifflin	-	-	-	-	4	373,000	559,500	186,500
Potter	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	36	\$3,758,220	\$5,893,210	\$2,134,990
District 3								
Bradford	-	-	-	-	3	245,600	460,500	214,900
Columbia	-	-	-	-	-	-	-	-

Appendix J Continued

		FY 2020-21			FY 2021-22			
District	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings
Lycoming	-	-	-	-	3	278,400	522,000	243,600
Montour	-	-	-	-	-	-	-	-
Northumberland	-	-	-	-	-	-	-	-
Snyder	-	-	-	-	-	-	-	-
Sullivan	-	-	-	-	3	245,600	460,500	214,900
Tioga	-	-	-	-	6	474,400	889,500	415,100
Union	-	-	-	-	-	-	-	-
Total	-	-	-	-	16	\$1,244,000	\$2,332,500	\$1,088,500
District 4								
Lackawanna	-	-	-	-	-	-	-	-
Luzerne	-	-	-	-	-	-	-	-
Pike	-	-	-	-	-	-	-	-
Susquehanna	-	-	-	-	-	-	-	-
Wayne	5	551,100	1,252,500	701,400	-	-	-	-
Wyoming	-	-	-	-	-	-	-	-
TOTAL	5	\$551,100	\$1,252,500	\$701,400	-	-	-	-
District 5								
Berks	-	-	-	-	-	-	-	-
Carbon	-	-	-	-	-	-	-	-
Lehigh	-	-	-	-	-	-	-	-
Monroe	-	-	-	-	-	-	-	-
Northampton	-	-	-	-	-	-	-	-
Schuylkill	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
District 6								
Bucks	-	-	-	-	-	-	-	-
Chester	-	-	-	-	-	-	-	-
Montgomery	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-

Appendix J Continued

District	FY 2020-21				FY 2021-22			
	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings
District 8								
Adams	-	-	-	-	-	-	-	-
Cumberland	-	-	-	-	-	-	-	-
Dauphin	-	-	-	-	-	-	-	-
Franklin	-	-	-	-	-	-	-	-
Lancaster	-	-	-	-	-	-	-	-
Lebanon	-	-	-	-	-	-	-	-
Perry	-	-	-	-	-	-	-	-
York	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
District 9								
Bedford	-	-	-	-	-	-	-	-
Blair	-	-	-	-	-	-	-	-
Cambria	-	-	-	-	2	160,800	301,500	140,700
Fulton	-	-	-	-	-	-	-	-
Huntingdon	-	-	-	-	-	-	-	-
Somerset	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	2	\$160,800	\$301,500	\$140,700
District 10								
Butler	-	-	-	-	-	-	-	-
Clarion	-	-	-	-	-	-	-	-
Indiana	-	-	-	-	-	-	-	-
Jefferson	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
District 11								
Allegheny	-	-	-	-	-	-	-	-
Lawrence	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-

Appendix J Continued

District	FY 2020-21				FY 2021-22			
	Miles	Actual Cost	Comparative Cost	Savings	Miles	Actual Cost	Comparative Cost	Savings
District 12								
Greene	-	-	-	-	-	-	-	-
Washington	-	-	-	-	-	-	-	-
TOTAL	-	-	-	-	-	-	-	-
GRAND TOTAL	5	\$551,100	\$1,252,500	\$701,400	56	\$5,334,220	\$8,848,210	\$3,513,990

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Appendix K: Engineering District Questionnaire

LBFC Questionnaire for P.E.s of PennDOT's 11 Engineering Districts SR 2021-53 Pennsylvania State Highway Maintenance Funding

1. Does the Pennsylvania State Highway Maintenance Funding Formula (per Act 1997-3) effectively and fairly distribute maintenance funding to the County Maintenance Offices (CMOs) contained within your respective PennDOT Engineering District?
2. What changes/modifications (if any) would you recommend to the existing Pennsylvania State Highway Maintenance Funding Formula?
3. What is the biggest obstacle (other than funding) to providing adequate and effective state highway maintenance?
4. Is additional state highway maintenance funding needed?
5. How would your Engineering District utilize additional funding?
6. Should additional funding be driven through the "Base Allocation" and/or "ASHMA" portions of the Pennsylvania State Highway Maintenance Funding Formula?
 - a. What additional sources of funding would you recommend be considered to address state highway maintenance funding needs?
7. What was the largest maintenance activity expenditure (e.g., winter operations, manual patching, paving, etc.) within your Engineering District and CMOs therein during the base FY 1997-98 and the other scope FYs 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22?
8. {Challenges} What unique challenges does your Engineering District face (e.g., developing and implementing the Winter Maintenance Program, hiring temporary equipment operators, contracting for rental equipment and operators)?
9. {Winter Program – Municipal Contracts} How many winter season municipal contracts were awarded in your Engineering District and the CMOs therein, including the dollar amount, during the base FY 1997-98 and FYs 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22?
 - a. Please provide a listing of winter resources (i.e., trucks, plows and salt spreaders, front end loaders, anti-icing trucks, snow blowers, and mechanics)?
 - b. Indicate whether your Engineering District was required to augment its winter program with rental trucks and operators, including the number of rental trucks and operator contracts for each of the scope FYs?

Appendix K Continued

10. {Incident Management – Readiness} What processes does your Engineering District have in place to manage crisis events (e.g., winter storms, etc.)?

11. {Paving Operations} Do all CMOs within your PennDOT Engineering District conduct paving operations with internal resources (as such appears to result in reasonable unit costs)?

12. {Reduce Costs} What measures have been taken over the past seven FYs to reduce the costs to perform maintenance operations through Maintenance Efficiency and Cost Effectiveness Initiative (MECE) or otherwise within your engineering district?

Appendix L: PennDOT Responses to this Report



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION
HARRISBURG, PENNSYLVANIA 17120

June 2, 2023

Christopher Latta, MBA, Executive Director
Legislative Budget and Finance Committee
Room 400 Finance Building
613 North Street, Harrisburg, PA 17105-8737

Dear Executive Director Latta:

On May 9, 2023, the Department of Transportation received your confidential draft copy of the Legislative Budget and Finance Committee (LBFC) study regarding the Pennsylvania state highway maintenance funding formula, pursuant to Act 2021-53.

We thank you and your team for your coordination with our staff, your commitment to capturing an appropriate understanding of the magnitude of information provided by our PennDOT teams, and your provision of a comprehensive review and report on the very complex Pennsylvania state highway maintenance funding formula.

Our team has reviewed the draft report, and offers only one clarification, specific to Section VII (Questionnaire responses) on pages 102 through 110. Please note for the record that questions posed in this section were intended to collect regional office feedback; and, as such, all responses reflect the individual thoughts and comments of PennDOT staff, including various concerns, challenges, and recommendations for improvements offered relative to the Pennsylvania state highway maintenance funding formula.

We appreciate the opportunity to provide advanced comments to this confidential draft copy. Should you have any questions or require additional information, please contact Daniel Farley, P.E., Director for Bureau of Operations, at 717.783.0333.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael B. Carroll".

Michael B. Carroll, Secretary
Pennsylvania Department of Transportation

Christopher Latta, MBA, Executive Director
Legislative Budget and Finance Committee
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June 2, 2023

4940/DPF

cc: Jason R. Brehouse, Esq, Chief Counsel & Project Manager, LBFC
Cheryl Moon-Sirianni, P.E., Executive Deputy Secretary
Michael Rebert, P.E., Deputy Secretary for Highway Administration
Corey Pellington, Deputy Secretary for Administration
Donald Smith, PennDOT Chief Counsel
Larry Shifflet, Deputy Secretary for Planning
Chuck Zimmerman, Director of Bureau of Fiscal Management
Teresa Wagner, Director of Legislative Affairs
Shane Rice, Director of Policy
Jonathan Fleming, Chief Executive Officer, Highway Administration
Gavin Gray, P.E., Chief Engineer, Highway Administration
Daniel Farley, P.E., Director for Bureau of Operations, Highway Administration
Christa Newmaster, Director for Bureau of Maintenance, Highway Administration
J. Michael Long, Asset Management Chief, Bureau of Operations
Helen Willis, Budget Division Chief, Bureau of Fiscal Management
David Maynard, Auditor Coordinator