

# Pennsylvania State Clean Diesel Grant Program Guidelines



**pennsylvania**

DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

**Tom Wolf**  
Governor

**Patrick McDonnell**  
Secretary

**Fiscal Year (FY) 2017**

2700-MN-DEP4959 5/2018

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May 11, 2018

Dear Friend:

I am pleased to invite you to apply for grant funding available through the Pennsylvania Department of Environmental Protection (DEP) State Clean Diesel Grant Program. The primary goal of the Pennsylvania State Clean Diesel Grant Program is to improve Pennsylvania's air quality by decreasing emissions from diesel-powered engines operating in the Commonwealth. The program, in addition to improving air quality, will also help to create and promote new markets for advanced clean diesel engine technologies.

For this grant opportunity, individuals or organizations that operate diesel-powered fleets will be eligible to receive funding for projects that lower emissions. Fleets that operate across the state are eligible to apply for this funding opportunity. Eligible proposals should include using emission reduction technologies such as idle reduction technologies, retrofit and repower technologies, alternative fuels and alternative fuel vehicles, as well as deployment of fuel-saving technology and vehicle or engine replacements. Applicants are encouraged to work with businesses and equipment vendors within Pennsylvania in completing their projects.

Along with the enclosed application is detailed guidance to assist you in developing project proposals. I encourage you to read through the entire package carefully to ensure that your complete application is prepared to effectively compete for available funding. The deadline for submittal of applications to DEP is 4:00 p.m. on July 6, 2018.

I look forward to funding projects that improve air quality in Pennsylvania. For more information, please contact the Bureau of Air Quality at 717.787.9702.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick McDonnell". The signature is fluid and cursive, written over a white background.

Patrick McDonnell  
Secretary

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## What's New and Important Information

**Project Funding** – There is \$668,697 available from DEP for this round of funding under the Pennsylvania (PA) State Clean Diesel Grant Program. A portion of this funding, \$275,479, is from the settlement of a lawsuit with Volkswagen and its subsidiaries, relating to diesel vehicle emission violations, and is being used as the Commonwealth's voluntary match funding under the Diesel Emission Reduction Act (DERA) program.

**Project Period** – The project period end date is September 30, 2018. Extensions may be possible; extension requests will be evaluated on a case-by-case basis by DEP. Without extensions, the project period will be approximately 6 months.

**Submission Format** – The application is now an online application. See the PA State Clean Diesel Grant Application Instructions document for details on applying for funding. Changes were also made to the attachment requirements. The changes to the attachments include incorporating the separate attachments required previously into questions in the online application. Additionally, the Applicant Fleet Description, formerly "Attachment D: Vehicle/Equipment Description Reporting Form," has been revised, and will be available to download and upload with the online application.

**Application Scoring** – The application scoring matrix and scoring instructions are included in this document.

**Application Submission Period** – The application submission period for this second round of funding begins upon publication of the notice of availability in the *Pennsylvania Bulletin* and application submission period ends 4:00 p.m. July 6, 2018.

**Webinar** – DEP staff will host a webinar during the application period to answer questions from applicants. Please see Section VII for instructions on how to access the webinar. The webinar will be recorded and posted on DEP's website.

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**FY2017 Application, Instructions, and Attachments are separate documents.** See the FY2017 Application Instructions for guidance on completing the Application and Attachments.

# Pennsylvania State Clean Diesel Grant Program

## I. Funding Opportunity Description

### A. Background

Reducing emissions from diesel engines is one of the most important air quality challenges facing the Commonwealth of Pennsylvania (Commonwealth or PA) and the country as a whole. Pennsylvania, as one of the most populous states in the country, has one of the largest vehicle populations, including a large population of diesel vehicles and equipment. Pennsylvania also contains a number of areas with high population densities where diesel vehicles congregate.

Pennsylvania is a major freight corridor, for both rail and trucking, for the Northeast United States. Pennsylvania contains many interstate highways that provide quick access to major north-south and east-west routes and the economically significant Northeast United States for all truck drivers traveling in the Commonwealth. There are approximately 210,000 heavy-duty diesel trucks registered in Pennsylvania, but the number actually operating in or traveling through Pennsylvania is likely two to three times greater than the number of registered vehicles.

Pennsylvania also has warehouses, intermodal facilities, several international airports, three ports used by commercial marine vessels, numerous railroads, and is a major destination for freight transport to and from these facilities. Many of these facilities also utilize diesel nonroad vehicles and engines. The diesel population of large nonroad vehicles and engines in Pennsylvania in 2017 was approximately 159,890<sup>1</sup>. The actual number is likely higher in Pennsylvania due to increased oil/gas drilling activities and forestry activities associated with the recent drilling boom in Pennsylvania. In addition to freight, Pennsylvania also has a significant commuter rail system, including both systems run by transit agencies and Amtrak lines crossing the Commonwealth.

Pennsylvania has 38 fixed-route transit systems, including the 6th and 26th largest in the United States<sup>2</sup>. Pennsylvania Department of Transportation (PennDOT) records indicate that 7,984 transit buses and 19,031 school buses were registered in the Commonwealth in 2017.<sup>3</sup>

New standards for diesel vehicles and equipment promulgated by the U.S. Environmental Protection Agency (EPA) will ensure that new medium-duty and heavy-duty diesel engines will be less polluting. Many of these diesel engines, however, can operate for 25 to 30 years before replacement is required, so it may be many years before existing equipment is replaced with new, cleaner equipment due to normal fleet turnover. A large population of older diesel engines unaffected by the new standards will continue to operate in the Commonwealth into the future. Many strategies and programs exist to make these engines operate more cleanly. Replacing, retrofitting, or repowering older diesel vehicles and engines are cost-effective strategies to reduce emissions of fine particulate matter (PM<sub>2.5</sub>) and precursor pollutants for the formation of PM<sub>2.5</sub> and ozone, including nitrogen oxides

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<sup>1</sup> NONROAD2008 Model, Pennsylvania Population File, 2015 to 2025 growth extrapolated for 2017.

<sup>2</sup> American Public Transportation Association, 2016 Public Transportation Fact Book, February 2017, Table 3.

<sup>3</sup> Pennsylvania Department of Transportation vehicle registration data, CY2017.

(NO<sub>x</sub>) and volatile organic compounds (VOC), by as much as 90 percent or more.

According to EPA's 2014 National Emission Inventory, in 2014<sup>4</sup> diesel emissions from on-road and nonroad diesel-powered mobile sources (including marine, rail, and aviation) in the United States accounted for approximately 4,780,228 tons per year (tpy) of NO<sub>x</sub>, 227,548 tpy of PM<sub>2.5</sub>, 282,162 tpy of PM<sub>10</sub> and 417,926 tpy of VOC. According to the same source, diesel emissions from on-road and nonroad diesel-powered mobile sources (including marine, rail, and aviation) in Pennsylvania accounted for approximately 145,395 tpy of NO<sub>x</sub>, 6,742 tpy of PM<sub>2.5</sub>, 8,145 tpy of PM<sub>10</sub> and 13,874 tpy of VOC. To achieve the greatest emission reductions possible, applications receive higher scores for higher emission reductions.

To protect public health and air quality, the EPA is authorized by the Diesel Emission Reduction Act (DERA) (42 U.S.C. 16131 et seq.) to allocate funding to state governments to establish grant programs for diesel emission reduction projects. Each state's allocation is dependent upon the number of states participating in each funding year and the total funding allocated to the state allocation portion of the program each year. PA's program is the PA State Clean Diesel Grant Program, administered by the PA Department of Environmental Protection (DEP).

#### B. Scope of Work

The primary goal of the PA State Clean Diesel Grant Program is to improve the Commonwealth's air quality by decreasing emissions from diesel-powered mobile sources through funding diesel emission reduction projects. This goal supports EPA's 2014-2018 Strategic Plan Goal 1, Objective 1.2, 'Improve Air Quality,' which states, "achieve and maintain health- and welfare-based air pollution standards and reduce risk from toxic air pollutants and indoor air contaminants." DEP will consider projects in all of the categories listed below as eligible projects. A single proposal may target multiple fleets, fleet types, and/or diesel emission reduction solutions. Eligible diesel emission reduction solutions include, but are not limited to: verified emission control technologies such as exhaust controls; engine upgrades; verified idle reduction technologies; certified engine replacements; aerodynamic technologies; and/or certified vehicle or equipment replacement. Eligible diesel vehicles, engines, and equipment may include buses, medium-duty or heavy-duty trucks, nonroad engines, equipment or vehicles (used in construction, cargo handling, agriculture, mining or energy production), marine engines and locomotive engines. See full eligibility information for applicants and projects in Section III. Eligibility Information.

## II. Award Information

#### A. Available Funding

The PA State Clean Diesel Grant Program is primarily funded through the EPA's State Clean Diesel Program. Additional or other sources of state funding, when available, may also be applied to the PA State Clean Diesel Grant Program. The fiscal year (FY) 2017 funding available under the State Clean Diesel Grant Program is \$688,697. Multiple projects may be funded from the total available. Partial funding is also possible, if deemed

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<sup>4</sup> To access EPA's 2014 National Emission Inventory data, see: <https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data>

appropriate by DEP staff.

**B. Project Period**

The project period for the FY 2017 PA State Clean Diesel Grant Program will be from the date a grant agreement is fully executed, unless an earlier date is agreed to in writing, to September 30, 2018. Project period extensions may be allowed past September 30, 2018. *Any applicant who begins a project and incurs costs before receiving a fully executed grant agreement does so at their own risk.*

**C. Funding Type**

The PA State Clean Diesel Grant Program is offering funding as a reimbursement grant program. This means a grantee will pay all project costs and submit proof that project invoices have been paid and proof of project work completion to DEP for reimbursement. DEP will not approve reimbursement requests for unpaid invoices. Detailed invoice requirements and submission instructions will be included in the grant agreement with successful applicants.

**D. Technology Compatibility**

Technology changes will not be allowed after a project has been selected for funding. If technology compatibility issues arise, DEP may elect to terminate the grant agreement, at which time any funding received by the grantee must be returned to DEP, unless otherwise stated in writing by DEP.

### **III. Eligibility Information**

**A. Eligible Applicants**

Organizations that operate eligible diesel-powered fleets throughout the Commonwealth may apply to the PA State Clean Diesel Grant Program. Eligible organizations include:

1. Businesses – corporations, partnerships, sole proprietorships, limited liability companies, business trusts or other legal business entities incorporated in or registered with the PA Department of State, Bureau of Corporations and Charitable Organizations, to do business in the Commonwealth.
2. Incorporated Nonprofit – an organization as described in section 501(c)(3) of the Federal Internal Revenue Code of 1954, as amended. The organization must be incorporated under PA law or registered with the PA Department of State, Bureau of Corporations and Charitable Organizations, to do business in the Commonwealth.
3. School Districts.
4. Municipal Governments and Municipal Authorities.
5. Other State Agencies.
6. Local, Regional or Multi-State Air Quality or Transportation Organizations that include a Pennsylvania state government agency, a municipal government, or a municipal authority as a member, and
  - a. owns or operates a diesel fleet located or operating predominately in Pennsylvania, or
  - b. have partnered with or is acting as a project manager for another eligible entity listed in this section.
7. Metropolitan or Rural Planning Organizations, as defined by the U.S. Department of Transportation at 49 U.S.C. § 5303(b), that are located in Pennsylvania.

## B. Ineligible Applicants

1. Non-profit organizations described in Section 501(c)(4) of the Internal Revenue Code that engage in lobbying activities as defined in Section 3 of the Lobbying Disclosure Act of 1995 are not eligible to apply.
2. Federal government agencies.
3. Individuals applying as individuals, not on behalf of an eligible applicant.

## C. Eligible Diesel Vehicles, Engines, and Equipment

Details relating to eligible model years and specific projects, as well as funding restrictions, are presented under the applicable eligible project section. See the glossary for definitions. Eligible vehicles, engines and equipment include the following diesel-powered sources:

1. School buses.
2. Transit buses.
3. Medium-duty or heavy-duty trucks – Class 5 through Class 8.
4. Marine engines.
5. Locomotives.
6. On-road or nonroad engines, equipment or vehicles used in:
  - a. Construction;
  - b. Handling of cargo (including at a port or airport);
  - c. Agriculture;
  - d. Mining; or
  - e. Energy production (not including stationary generators and pumps).

## D. Eligible Project Types

See Section IV. Cost Share, Scrappage, and Program Income Requirements for cost-share information for each project type.

1. **Exhaust Controls:** Exhaust controls include pollution control devices installed in the exhaust system (such as oxidation catalysts and particulate matter filters), or systems that include crankcase emission control (like a closed crankcase filtration system). Each applicant requesting funding for diesel particulate filters should datalog the exhaust temperature of all proposed vehicles before an application is submitted, and, if the results indicate that the project is feasible for the vehicles in question, include the results with the submitted application to ensure DEP has adequate evidence to determine whether the project can be completed as proposed. See Section II.D. relating to technology compatibility.

A list of eligible, EPA-verified exhaust control technologies is available at:

<https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel>; a list of eligible, California Air Resources Board (CARB) verified exhaust control technologies is available at: <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>. Verified technologies proposed for funding under this project type must be specifically named on one of these lists at the time of application submission to DEP and must only be used for the vehicle/equipment application specified on the list. If an applicant is selected for funding, the actual exhaust control technologies used by the grant recipient must be specifically named on one of these lists at the time of acquisition, and used only for the vehicle/equipment application specified on the list.

**Table 1: Exhaust Control Eligibility**

Medium and Heavy-Duty Trucks, Transit Buses, and School Buses Eligibility

Current Engine Model Year (EMY)	DOC+/- CCV	DPF	SCR
	+/- Tires and Aerodynamics		
older - 1994	No	No	No
1995 - 2006	Yes	Yes	Yes
2007 to 2009	No	No	Yes
2010 - newer	No	No	No

Nonroad Engines

Current Engine Horsepower	Current Engine Model Year (EMY) and Tier	Verified Exhaust Control
0-50	2005 and Newer; Unregulated – Tier 2	Yes
51-300	1995 and Newer; Tier 0 – Tier 2	Yes
51-300	1995 and Newer; Tier 3	Yes
301+	1985 and Newer; Tier 0 – Tier 2	Yes
301+	1985 and Newer; Tier 3	Yes

- 2. Engine Upgrades and Remanufacture Systems:** This project type is only applicable to nonroad, marine, and locomotive engines. Generally, an engine upgrade involves the removal of parts on an engine during a rebuild and replacement with parts that cause the engine to represent an engine configuration which is cleaner than the original engine. Some nonroad and marine engines can be upgraded to reduce their emissions by applying manufacturer upgrades that are retrofits currently verified by EPA or CARB as a package of components demonstrated to achieve specific levels of emission reductions. Some locomotives and marine engines can be upgraded through the application of a certified remanufacture system that is used to rebuild the engine to represent a cleaner engine configuration. Engine upgrades may not be available for all engines, and not all upgrades may achieve an emission reduction benefit. Proposals for upgrades should include a discussion of the availability of engine upgrade kits/systems and indicate the pre- and post-project emission standard levels of the engines to demonstrate that the upgrade will result in an emission reduction benefit.

To be eligible for funding, the upgrade must either be a verified retrofit, as described above, or a certified remanufacture system that will result in an emissions benefit by rebuilding the engine to a cleaner engine configuration. For an engine to be eligible for an upgrade, the engine must be currently operating and performing its intended function. If a certified remanufacture system for a locomotive includes a full engine

replacement, the requirements below in Section III.D.5. (Certified Engine Replacements) will apply. If a certified remanufacture system is applied at the time of rebuild, funds under this award cannot be used for the entire cost of the engine rebuild, but only for the cost of the certified remanufacture system and associated labor costs for installation.

A list of eligible, EPA-verified engine upgrade technologies is available at: <https://www.epa.gov/verified-diesel-tech/verified-technologies-list-clean-diesel>. Lists of certified remanufacture systems for locomotives and marine engines, and additional information on remanufacture systems, are available at: <http://www.epa.gov/compliance-and-fuel-economy-data/engine-certification-data>, and additional information on remanufacture systems, are available at: [www.epa.gov/vehicle-and-engine-certification/remanufacture-systems-category-1-and-2-marine-diesel-engines](http://www.epa.gov/vehicle-and-engine-certification/remanufacture-systems-category-1-and-2-marine-diesel-engines). Technologies proposed for funding under this project type must be specifically named on EPA’s list of certified remanufacture systems or EPA or CARB’s Verified Exhaust Control Technologies lists at the time of acquisition, and used only for the vehicle/engine applications specified on the lists, to be eligible for funding.

**Table 2: Engine Upgrade and Remanufacture System Eligibility**

Nonroad Engines

Current Engine Horsepower	Current Engine Model Year (EMY) and Tier	Verified Engine Upgrade
0-50	2005 and Newer; Unregulated – Tier 2	Yes
51-300	1995 and Newer; Tier 0 – Tier 3	Yes
301-750	1985 and Newer; Tier 0 – Tier 3	Yes
751+	1985 and Newer; Tier 0 – Tier 2	Yes

Marine Engines

Current Engine Tier	Certified Remanufacture System	Verified Engine Upgrade
Unregulated – Tier 2	Yes	Yes
Tier 3 - 4	No	No

Locomotive Engines

Current Locomotive Tier	Certified Remanufacture System
Unregulated - Tier 2	Yes
Tier 2+ switcher	Yes
Tier 2+ line haul	Yes
Tier 3 – Tier 4	No

3. **Verified Idle Reduction Technologies:** An idle reduction project is generally defined as the installation of a technology or device that reduces unnecessary idling of diesel vehicles or equipment and/or is designed to provide services (such as heat, air conditioning, and/or electricity) to vehicles and equipment that would otherwise require the operation of the main drive or auxiliary engine(s) while the vehicle is temporarily parked or remains stationary. The reduction in idling will conserve diesel fuel, and must also lower emissions.

Lists of eligible, EPA-verified idle reduction technologies are available at:

<http://www.epa.gov/verified-diesel-tech/smartway-technology>. Technologies proposed for funding under this project type must be specifically named on EPA's SmartWay Verified Technologies list at the time of the application submission to DEP and may only be used for the vehicle/equipment application specified on the list. The technology categories include: auxiliary power units and generator sets, battery air conditioning systems, thermal storage systems, electrified parking spaces (truck stop electrification), fuel-operated heaters, shore connection systems and alternative maritime power, shore connection systems for locomotives, and automatic shutdown/start-up systems for locomotives.

Please note that technologies for the electrification of engines/vehicles/equipment other than those specifically listed on EPA's SmartWay Verified Technologies list cannot be considered verified idle reduction technologies, but those technologies may be eligible as a Replacement (replacement of a diesel-powered engine/vehicle/equipment with an eligible electric engine/vehicle/equipment; see Section III.D.6, below).

- a. **Verified Idle Reduction Technologies on Locomotives:** Idle reduction technologies allow locomotive engine operators to reduce long-duration idling of the main propulsion engine by using an alternative technology.
- b. **Electrified Parking Spaces:** Electrified Parking Spaces (EPS), also known as Truck Stop Electrification (TSE), operate independently of the truck's engine and allow the truck engine to be turned off as the EPS/TSE system supplies heating, cooling, and/or electrical power. The EPS/TSE system provides off-board electrical power to operate:
  - i. an independent heating, cooling, and electrical power system,
  - ii. a truck-integrated heating and cooling system, or
  - iii. a plug-in refrigeration system that would otherwise be powered by the main propulsion engine.
- c. **Marine Shore Power Connection Systems:** Shore power systems allow maritime vessels to "plug into" an electrical power source instead of using diesel main or auxiliary engines while at port. Funding may support new installations, or expansions of existing shore power systems. Due to the unique nature and custom design of marine shore power connection systems, DEP will review and approve the marine shore power connection system proposed by the applicant on a case-by-case basis.
  - i. **Marine Shore Power Criteria:** Projects are eligible for funding on the condition that the following criteria are satisfied:
    - 1) Applicants must attest to compliance with international shore power design standards (ISO/IEC/IEEE 80005-1-2012 High Voltage Shore

- Connection Systems or the IEC/PAS 80005-3:2014 Low Voltage Shore Connection Systems).
- 2) Shore power connection systems must be supplied with electricity from the local utility grid.
  - 3) Demonstration that the proposed system has the capacity, demand, and commitment to be utilized for more than 1,000 MW-hours per year. Smaller projects will be considered if the applicant can demonstrate that project benefits outweigh project costs with a lower level of use.
  - 4) If the project proposal is selected for funding, the final design of the marine shore power connection system will require specific DEP approval prior to purchase and installation.
  - 5) Applicants must commit to reporting usage information to DEP for five years after the system is operational.
  - 6) Shore power capable vessels docked at a berth where shore power is available must be required to turn off the vessel's engines and utilize the shore power system, with limited exceptions for extreme circumstances.
- ii. Marine Shore Power Project Description: Applicants proposing marine shore power connection systems should provide a project description that includes, but is not limited to:
- 1) the annual number of ship visits to berth where the shore power system is to be installed;
  - 2) average hoteling (or idling) time per visit; and
  - 3) information about the fleet of vessels that has, or will have, the ability to use the shore-side connection system, including:
    - a) the estimated annual number of ship visits to the shore power enabled berth that will utilize the shore power system;
    - b) estimated annual hoteling hours using shore power system;
    - c) fuel type and average sulfur content of fuel used in the auxiliary engines for each vessel;
    - d) auxiliary engine and boiler information for each vessel; and
    - e) estimated annual hoteling load requirements (MW-hours).
  - 4) any documented commitment of visits and hours by the fleet of vessels that has, or will have, the ability to use the shore-side connection system; and
  - 5) estimated emission reductions using the step-by-step instructions provided in Appendix B of EPA's Shore Power Port Assessment Report.
    - a) The Shore Power Port Assessment Report, and the calculator tool can be found here: [www.epa.gov/ports-initiative/shore-power-technology-assessment-us-ports](http://www.epa.gov/ports-initiative/shore-power-technology-assessment-us-ports).
- d. Highway Idle Reduction Technologies: Idle reduction technologies allow highway vehicle operators to reduce long-duration idling of the main propulsion engine by using an alternative technology. Only long-haul Class 8 trucks and school buses are eligible for idle reduction technology projects under the guidelines in Table 3 below.

**Table 3: Idle Reduction Technology Eligibility**

Locomotives

Current Locomotive Tier	Idle- Reduction Technology
Unregulated - Tier 2	Yes*
Tier 2+ switcher	Yes*
Tier 2+ line haul	Yes*
Tier 3 – Tier 4	No

\*Automatic Engine Start-Stop technologies are only eligible to be installed on locomotives certified to Tier 0 or unregulated.

Class 8 Long Haul Trucks and School Buses

Current Engine Model Year (EMY)	Verified Idle Reduction
older - 1994	No
1995 - 2006	Yes
2007 to 2009	Yes*
2010 - newer	No

\*Auxiliary Power Units and generators are not eligible on vehicles with EMY 2007 or newer.

4. **Verified Aerodynamic Technologies and Verified Low Rolling Resistance Tires:** To improve fuel efficiency, long haul Class 8 trucks can be retrofitted with aerodynamic trailer fairings, or the fairings can be provided as new equipment options. Certain tire models can provide a reduction in NO<sub>x</sub> emissions and fuel savings, relative to the “standard” new tires for long haul Class 8 trucks, when used on all axles.

A list of eligible, EPA-verified aerodynamic technologies is available at: <https://www.epa.gov/verified-diesel-tech/smartway-verified-list-aerodynamic-devices>, and includes:

- a. gap fairings that reduce the gap between the tractor and the trailer to reduce turbulence;
- b. trailer side skirts that minimize wind under the trailer; and
- c. trailer rear fairings that reduce turbulence and pressure drop at the rear of the trailer.

A list of EPA-verified low rolling resistance tires is available at: <https://www.epa.gov/verified-diesel-tech/smartway-verified-list-low-rolling-resistance-lrr-new-and-retread-tire>, and includes both dual tires and single wide tires (single wide tires replace the double tire on each end of a drive or trailer axle, in effect turning an "18" wheeler into a "10" wheeler). Low rolling resistance tires can be used with lower-weight aluminum wheels to further improve fuel savings; however, aluminum wheels are not eligible for funding under this project solicitation.

DEP will fund verified aerodynamic technologies or verified low rolling resistance tires installed on long haul Class 8 trucks ONLY if combined on the same vehicle with the new installation of one or more of the verified exhaust controls funded under this project solicitation, as described in Section III.D.1. The types of aerodynamic technologies and low rolling resistance tires proposed for funding under this category must exist on EPA’s

SmartWay Verified Technologies list for the vehicle/engine application specified in the proposal at the time of proposal submission to EPA. If selected for funding, the actual technologies/tires used by the grant recipient must be specifically named on EPA’s SmartWay Verified Technologies list at the time of acquisition, and used only for the vehicle/engine applications specified on the list, to be eligible for funding. Note: Low rolling resistance tires are not eligible for funding where these types of tires have already been installed on the truck.

- 5. Certified Engine Replacement:** Engine Replacement includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or a clean alternative fuel, diesel engine replacement with an electric power source (grid, battery or fuel cell), and/or the replacement of a diesel engine with an electric generator(s) (genset). All-electric (i.e. zero emission) repowers do not require EPA or CARB certification. Proposals for engine replacements should include the pre- and post-project standard emission levels of the engines to be replaced, to ensure that the engine replacement will result in a net emissions reduction.

Nonroad, locomotive, and marine engine emission standards are on EPA’s website at: <http://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles>.

Highway engine emission standards are on EPA’s website at: <http://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles>.

Engines certified to CARB’s Optional Low NO<sub>x</sub> Standard may be found by searching CARB’s Executive Orders for Heavy-duty Engines and Vehicles, found at: [www.arb.ca.gov/msprog/onroad/cert/cert.php](http://www.arb.ca.gov/msprog/onroad/cert/cert.php).

**Table 4: Engine Replacement Eligibility**

Nonroad

Current Engine Horsepower	Current Engine Model Year (EMY) and Tier*	Engine Replacement: EMY 2017+*		
		Tier 0 - 3	Tier 4	All-Electric
0-50	2005 and Newer; Unregulated – Tier 2	No	Yes	Yes
51-300	1995 and Newer; Tier 0 – Tier 3	No	Yes	Yes
301-750	1985 and Newer; Tier 0 – Tier 3	No	Yes	Yes
751+	1985 and Newer; Tier 0 – Tier 2	No	Yes	Yes

\*Tier 3 and Tier 4 interim (4i) allowed for vehicle/equipment replacement only when Tier 4 final is not yet available from OEM for 2017 model year equipment under the Transition Program for Equipment Manufacturers (TPEM).

Highway

Current Engine Model Year (EMY)	Engine Replacement: EMY 2017+ (2012+ for Drayage)	Engine Replacement: Electric*
older - 1994	No	No
1995 - 2006	Yes	Yes
2007 to 2009	No	Yes
2010 - newer	No	No

\*Hydrogen fuel cells are only eligible for repowers for eligible urban transit buses and eligible drayage trucks, as defined in this project solicitation.

6. **Vehicle and Equipment Replacements:** Nonroad and highway diesel vehicles, engines, and equipment can be replaced under this program with newer, cleaner vehicles and equipment that operate on diesel or alternative fuels and use engines certified by EPA and, if applicable, CARB to meet a more stringent set of engine emission standards. Replacement includes, but is not limited to, diesel vehicles/equipment replacement with newer, cleaner diesel, electric (grid, battery or fuel cell), hybrid or alternative fuel vehicles/equipment. All-electric (i.e. zero emission) vehicles and equipment do not require EPA or CARB certification. Marine vessels are not eligible for full vessel replacement.

Replacement of an existing diesel transport refrigeration unit (TRU) consists of replacing the entire existing TRU, including the diesel engine and the compressor/cooling unit, with a newer, cleaner TRU. Replacement of an existing diesel-electric genset consists of replacing the entire existing genset with a new genset, including the existing diesel engine and the existing electric generator component. Marine vessels are not eligible for full replacement.

The following are eligible replacement projects:

- a. **Locomotives and Nonroad Diesel Vehicles and Equipment:** Nonroad diesel vehicles or equipment and locomotives can be replaced with vehicles or equipment powered by a MY 2017 or newer engine certified to EPA emission standards. Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2017. All-electric replacements are allowed. Nonroad and locomotive engine emission standards are on EPA’s website at: <http://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-nonroad-engines-and-vehicles>.
- b. **Highway Diesel Vehicles and Buses (other than drayage vehicles):** Diesel-powered highway vehicles can be replaced with a vehicle powered by a MY 2017 or newer engine certified to EPA emission standards. All- electric replacements are allowed. Highway engine emission standards are on EPA’s website at: <http://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles>.
- c. **Drayage Vehicles:** Drayage vehicles can be replaced if the following conditions are met:
  - i. The replacement vehicle is defined as a drayage truck (see Section VI. for definitions).
  - ii. The replacement vehicle has a MY 2012 or newer engine certified by EPA.
  - iii. If a proposal for the replacement of drayage trucks is selected for funding,

the grant recipient will be required to establish guidelines to ensure that any existing truck replaced with grant funds has a history of operating on a frequent basis over the prior year as a drayage truck, and to ensure any new truck purchased with grant funds is operated in a manner consistent with the definition of a drayage truck, as defined in Section VI. For an example of sample guidelines, see <https://www.epa.gov/sites/production/files/2017-04/documents/fy17-drayage-truck-sample-guideline.pdf>.

#### Locomotives

Current Locomotive Tier	Locomotive Replacement: EMY 2017+* or Electric		
	Tier 0+ - 3	Tier 4	All- Electric
Unregulated - Tier 2	No	Yes	Yes
Tier 2+ switcher	No	Yes	Yes
Tier 2+ line haul	No	No	No
Tier 3 – Tier 4	No	No	No

\*Previous engine model year engines may be used if the engine is certified to the same emission standards applicable to EMY 2017.

#### Nonroad

Current Engine Horsepower	Current Engine Model Year (EMY) and Tier	Vehicle/Equipment Replacement: EMY 2017+			
		Tier 0 - 2	Tier 3 - 4i	Tier 4	All-Electric
0-50	2005 and Newer; Unregulated – Tier 2	No	No	Yes	Yes
51-300	1995 and Newer; Tier 0 – Tier 2	No	Yes*	Yes	Yes
51-300	1995 and Newer; Tier 3	No	No	Yes	Yes
301+	1985 and Newer; Tier 0 – Tier 2	No	Yes*	Yes	Yes
301+	1985 and Newer; Tier 3	No	No	Yes	Yes

\*Tier 3 and Tier 4 interim (4i) allowed for vehicle/equipment replacement only when Tier 4 final is not yet available from OEM for 2017 model year equipment under the Transition Program for Equipment Manufacturers (TPEM).

#### Highway and Drayage

Current Engine Model Year (EMY)	Vehicle Replacement: EMY 2017+ (2012+ for Drayage)	Vehicle Replacement: Electric
older - 1994	No	No
1995 - 2006	Yes	Yes
2007 to 2009	No	Yes
2010 - newer	No	No

## **7. Fleet Expansion, Replacement Criteria, and Normal Attrition**

- a. No funds awarded under this program may be used for the purchase of vehicles, engines, or equipment to expand a fleet.
- b. Replacement projects are eligible for funding on the condition that the following criteria are satisfied:
  - i. The replacement vehicle, engine, or equipment will continue to perform the same function and operation as the vehicle, engine, or equipment that is being replaced.
  - ii. The replacement vehicle, engine, or equipment will be of the same type and similar gross vehicle weight rating or horsepower as the vehicle, engine, or equipment being replaced.
    - 1) Nonroad: Horsepower increases of more than 25 percent will require specific approval by DEP prior to purchase, and the applicant may be required to pay the additional costs associated with the higher horsepower equipment.
    - 2) Highway: The engine's primary intended service class must match the vehicle's weight class (i.e. a LHD diesel engine is used in a vehicle with GVWR 16,001 – 19,500 pounds, a MHD diesel engine is used in a vehicle with a GVWR of 19,501 – 33,000 pounds, and an HHD diesel engine is used in a vehicle with a GVWR greater than 33,000 pounds). Exceptions may be granted for vocational purposes; however, the GVWR must stay within 10 percent of the engine's intended service class and any exceptions will require specific DEP approval prior to purchase.
- c. Normal Attrition:
  - i. Engine, vehicle, and equipment replacements that would have occurred through normal attrition are considered to be the result of normal fleet turnover and are not eligible for funding under this program.
  - ii. Normal attrition is generally defined as a replacement that is scheduled to take place within 3 years of the project start date. Normal attrition is typically defined by the vehicle or fleet owner's budget plan, operating plan, standard procedures, or retirement schedule.
  - iii. For example, if a school bus fleet typically retires vehicles after 20 years, a bus that is currently in its 18th or 19th year of service is not eligible for replacement. A bus that is currently in its 17th year of service and has three years of service remaining (as defined by the fleet's retirement schedule) is eligible for replacement.
  - iv. Normal attrition does not include replacements that must occur due to a state or local mandate.

### **E. Ineligible Vehicles, Engines, Equipment, and Project Types**

In addition to the restrictions noted in the eligible project descriptions, the following are ineligible vehicles, engines, and/or equipment:

1. Class 1-4 vehicles (Vehicles with a gross vehicle weight rating (GVWR) of 16,000 or fewer pounds).
2. Non-diesel-powered vehicles, engines, and equipment.
3. Vehicles, engines, and equipment with less than three years of useful life remaining or scheduled for replacement within less than 3 years of the project completion date are not eligible for funding. See Section III.D.7.c. Normal Attrition for additional information about replacement restrictions relating to normal attrition schedules.
4. A bus or medium-duty or heavy-duty highway vehicle that is a MY 1994 vehicle or older.

5. Nonroad engines and equipment that operate 500 hours per year or less.
6. Locomotive or marine engines that operate 1,000 hours per year or less.
7. Marine shore connection system projects that are expected to be utilized less than 1,000 MW-hr/year.
8. Locomotive shore connection system projects that are expected to be utilized less than 1,000 hours/year.
9. Vehicles, engines, or equipment designated for retrofit, repower, or replacement where most of its annual operation time DOES NOT occur within the Commonwealth.
10. Vehicles being replaced or repowered that are not operational or that DO NOT have a valid Pennsylvania state registration, if required.

The following are types of projects that are not eligible for funding:

1. Projects already completed or started prior to submitting an application to DEP.
2. Projects physically located entirely outside of Pennsylvania.
3. Projects that are intended for fleet expansion.
4. The repair or salvaging of a disabled vehicle, or scheduled or routine maintenance and repairs due to accidents or neglect.
5. Projects that were previously funded by a different state or federally funded grant program.
6. Projects that replace or repower an alternative fuel vehicle, engine or equipment.
7. Projects with no measurable environmental net benefit for the Commonwealth.
8. Replacements that would have occurred through normal attrition.
9. Projects for the purchase of single-wide wheels except where a fleet is retrofitting from standard dual tires to SmartWay-verified single-wide low rolling resistance tires. In this case, the cost of single-wide wheels would be acceptable as additional equipment necessary to use the SmartWay verified technology.
10. Projects to purchase of exhaust controls, idle reduction technologies, low rolling resistance tires or advanced aerodynamic technologies if similar technologies have previously been installed on the truck or trailer.
11. Projects to retrofit, replace, upgrade or install idle reduction technologies on eligible locomotives or marine engines that operate less than 1,000 hours per year.

#### F. Additional Funding Restrictions

No funds awarded under the PA State Clean Diesel Grant Program may be used:

1. To fund the costs of emission reductions that are mandated under federal law, pursuant to 42 U.S.C. 16132(d)(2) or any other federal, state or local mandates. The restriction applies when the mandate takes effect (the effective date) for any affected vehicles, engines or equipment. This restriction does not apply to a mandate in a State Implementation Plan approved by the Administrator under the Clean Air Act. Voluntary or elective emission reduction measures shall not be considered “mandated,” regardless of whether the reductions are included in the State Implementation Plan.
  - a. Specifically, projects involving locomotives and marine engines are not eligible for funding if the emission reductions are required by EPA’s locomotive and marine rule, “Control of Emissions of Air Pollution from Locomotives and Marine Compression-Ignition Engines Less than 30 liters per Cylinder.” Also, projects involving stationary engines will not be considered for funding if the emission reductions proposed for funding are required by EPA’s RICE rule, “National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary

Reciprocating Internal Combustion Engines (40 CFR Part 63 Subpart ZZZZ). Projects which include locomotives and/or marine engines and/or stationary engines must provide DEP a clear and concise justification for why/how the proposed emission reduction are not subject to the Restriction for Mandated Measures. The justification must clearly demonstrate that:

- i. the target engines are exempt from any federal requirements; or
  - ii. emission reductions funded under the Program will be implemented prior to the effective date of any applicable federal requirements; and/or
  - iii. emission reductions funded under the Program will not be used to satisfy any applicable federal requirements, but instead are in excess of (above and beyond) those required by the applicable mandate.
- b. Sufficient information must be provided to support the justification, including maintenance records, if applicable.
  - c. Projects involving locomotive, marine, and stationary engines will be evaluated on a case-by-case basis to determine if the proposed project is required by one of the rules cited in Section III.F.1.a. above, based on the information submitted pursuant to Section III.F.1.a.i-iii.
  - d. Provisions of a state or federal consent decree or other litigation resolution are not considered to be federal mandates for the purpose of this project solicitation.
2. As matching funds for other federal grants, lobbying, or intervention in local, state, or federal regulatory or adjudicatory proceedings, and cannot be used to sue the Commonwealth of Pennsylvania or any other government entity.
  3. To cover expenses incurred prior to the project period set forth in any grant agreement funded by the PA State Clean Diesel Grant Program. Additionally, expenses incurred prior to the project period set forth in any grant agreement resulting from this project solicitation are not eligible as a cost-share for proposed projects.
  4. To prepare the PA State Clean Diesel Grant Program grant application.
  5. For vehicle title, registration and inspection fees, permit fees, or any other fees not approved by DEP in writing.
  6. For administrative costs exceeding 15 percent total of project costs.

#### **IV. Cost Share, Scrappage, and Program Income Requirements**

The following section identifies the mandatory cost-share requirements, specifically the project costs DEP will reimburse and the project costs that are the responsibility of the applicant. This section also discusses voluntary cost-share options and program income requirements.

##### **A. Mandatory Cost-Share Requirement**

The following are the funding limitations and mandatory cost-share requirements for eligible projects, as defined in Section III.D. of this project solicitation:

1. Exhaust Controls: DEP will fund up to 100 percent of the cost (labor and equipment) for an eligible verified exhaust emission control retrofit.
2. Engine Upgrades/Remanufactures: DEP will fund up to 40 percent of the cost (labor and equipment) of an eligible nonroad, locomotive or marine engine upgrade, which include a verified retrofit or a certified remanufacture system. Applicants are responsible for cost-sharing at least 60 percent of the cost of an eligible engine

upgrade. Note: If a certified remanufacture system is applied at the time of rebuild, funds under this award cannot be used for the entire cost of the engine rebuild, but only for the cost of the certified remanufacture system and associated labor costs for installation.

3. Idle Reduction Technologies on Locomotives: DEP will fund up to 40 percent of the cost (labor and equipment) of an eligible verified idle reduction technology on a locomotive. Applicants are responsible for cost-sharing at least 60 percent of the cost of an eligible idle reduction technology on a locomotive.
4. Marine Shore Connection Systems: DEP will fund up to 25 percent of the cost (labor and equipment) of an eligible shore connection system, including the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. Applicants are responsible for cost-sharing at least 75 percent of the cost of an eligible shore connection system.
  - a. Eligible marine shore power connection costs include, but are not limited to various components such as cables, cable management systems, shore power coupler systems, distribution control systems, transformers, grounding switches, service breakers, capacitor banks, and power distribution.
  - b. Funding may support new installations, or expansions of existing shore power systems.
  - c. Examples of ineligible costs for marine shore power connection systems include, but are not limited to, shipside modifications to accept shore-based electrical power, electricity costs, and operation and maintenance costs.
  - d. Due to the unique nature and custom design of marine shore power connection systems, DEP will review and approve the marine shore power connection system proposed by the state on a case-by-case basis.
5. Truck Stop Electrification/ Electrified Parking Spaces: DEP will fund up to 30 percent of the cost (labor and equipment) of truck stop electrification (TSE)/ Electrified Parking Spaces (EPS) technologies, including the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional. Applicants are responsible for cost-sharing at least 70 percent of the cost of a TSE/EPS technology.
  - a. Eligible TSE/EPS costs include, but are not limited to, the purchase and installation of electrical infrastructure or equipment to enable heating, cooling, and the use of cab power for parked trucks, or to enable the use of power for TRUs and auxiliary power systems at distribution centers, intermodal facilities, and other places where trucks congregate.
  - b. Examples of ineligible costs for TSE/EPS include, but are not limited to: on-board auxiliary power units and other equipment installed on trucks; equipment and services unrelated to heating and cooling (e.g., telephone, internet, television, etc.); TRUs; electricity costs; and operation and maintenance costs.
6. Idle Reduction Technologies on Highway Vehicles: DEP will fund up to 25 percent of the cost (labor and equipment) of verified idle reduction technologies on long-haul Class 8 trucks and school buses.
7. Verified Aerodynamic Technologies and Verified Low Rolling Resistance Tires: DEP will not fund stand-alone aerodynamic technologies or low rolling resistance tires. DEP will fund up to 100 percent of the cost (labor and equipment) for verified aerodynamic technologies or verified low rolling resistance tires installed on long haul Class 8 trucks, ONLY if combined on the same vehicle with the new installation of one or more of the Verified Exhaust Controls funded under this project solicitation, as

described in Section III.D.1. Note: Low rolling resistance tires are not eligible for funding where these types of tires have already been installed on a truck.

8. Certified Engine Replacement:
  - a. DEP will fund up to 40 percent of the cost (labor and equipment) of an eligible engine replacement with a MY 2017 or newer diesel or alternative fuel engine certified to EPA emission standards. Applicants are responsible for cost-sharing at least 60 percent of the cost.
  - b. DEP will fund up to 60 percent of the cost (labor and equipment) of an eligible engine replacement with an electric motor or electric power source. Applicants are responsible for cost-sharing at least 40 percent of the cost.
  - c. DEP will fund up to 50 percent of the cost (labor and equipment) of replacing a diesel engine with a MY 2017 or newer engine that is certified to CARB's Optional Low-NO<sub>x</sub> Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NO<sub>x</sub>. Engines certified to CARB's Optional Low NO<sub>x</sub> Standards may be found by searching CARB's Executive Orders for Heavy-duty Engines and Vehicles, found at: [www.arb.ca.gov/msprog/onroad/cert/cert.php](http://www.arb.ca.gov/msprog/onroad/cert/cert.php).
  - d. The eligible cost of engine replacement includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional, including related labor expenses.
  - e. Charges for equipment and parts on engine replacement projects are only eligible for funding if they are included in the certified engine configuration and/or are required to ensure the effective installation and functioning of the new technology, but are not part of typical vehicle or equipment maintenance or repair.
  - f. Examples of ineligible engine replacement costs include, but are not limited to: tires, cabs, axles, paint, brakes, and mufflers.
  - g. For engine replacement with battery, fuel cell, and grid electric, examples of eligible engine replacement costs include, but are not limited to: electric motors, electric inverters, battery assembly, direct drive transmission/gearbox, regenerative braking system, vehicle control/central processing unit, vehicle instrument cluster, hydrogen storage tank, hydrogen management system, fuel cell stack assembly, and the purchase and installation of electrical infrastructure or equipment to enable the use of power.
  - h. Examples of ineligible costs include, but are not limited to, electricity, and operation and maintenance costs.
9. Certified Vehicle/Equipment Replacement:
  - a. Locomotive and Nonroad Diesel Vehicles and Equipment: DEP will fund up to 25 percent of the cost of an eligible replacement vehicle or piece of equipment powered by a MY 2017 or newer diesel or alternative fuel engine certified to EPA emission standards. Applicants are responsible for cost-sharing at least 75 percent of the cost.
  - b. Highway Diesel Vehicles and Buses (other than Drayage): DEP will fund up to 25 percent of the cost of an eligible vehicle powered by a MY 2017 or newer diesel or alternative fuel engine certified to EPA emission standards. Applicants are responsible for cost-sharing at least 75 percent of the cost.
  - c. Low NO<sub>x</sub> Vehicles: DEP will fund up to 35 percent of the cost of a replacement vehicle powered by a 2017 model year or newer engine certified to meet CARB's Optional Low-NO<sub>x</sub> Standards of 0.1 g/bhp-hr, 0.05 g/bhp-hr, or 0.02 g/bhp-hr NO<sub>x</sub>. Engines certified to CARB's Optional Low NO<sub>x</sub> Standards may be found

by searching CARB's Executive Orders for Heavy-duty Engines and Vehicles, found at: [www.arb.ca.gov/msprog/onroad/cert/cert.php](http://www.arb.ca.gov/msprog/onroad/cert/cert.php).

- d. Electric Vehicle or Equipment Replacement: DEP will fund up to 45 percent of the cost of an all-electric nonroad vehicle, nonroad piece of equipment or highway vehicle (except drayage). Applicants are responsible for cost-sharing at least 55 percent of the cost.
- e. Drayage Vehicle Replacement: DEP will fund up to 50 percent of the cost of an eligible replacement drayage truck powered by a MY 2012 or newer certified engine. Applicants are responsible for cost-sharing at least 50 percent of the cost.
- f. The eligible cost of a vehicle/equipment replacement includes the cost of modifications, attachments, accessories, or auxiliary apparatus necessary to make the equipment functional.
- g. The cost of additional "optional" components or "add-ons" that significantly increase the cost of the vehicle may not be eligible for funding under the grant; the replacement vehicle should resemble the replaced vehicle in form and function.
- h. For grid electric powered equipment replacements, examples of eligible replacement costs include, but are not limited to, the purchase and installation of electrical infrastructure or equipment to enable the use of power.
- i. Examples of ineligible costs include, but are not limited to, electricity, and operation and maintenance costs.

#### B. Voluntary Cost-Share

1. Voluntary cost share is a form of leveraging. Leveraging is generally when an applicant proposes to provide its own additional funds/resources or those from third party sources to support or complement the project they are awarded under the competition which are above and beyond the DEP grant funds awarded.
2. While it is not required that an applicant provide a voluntary cost-share (or overmatch if a mandatory cost share applies) beyond DEP's funding and/or any mandatory cost-share as described above, applicants may provide a voluntary cost-share or overmatch to improve the environmental outputs and outcomes of the project.
3. If proposed, the voluntary cost-share or overmatch funds must be indicated in the budget section of the application. If DEP accepts an offer for a voluntary cost-share or overmatch, applicants must meet this funding commitment as a legal condition of receiving DEP funding. The recipient is legally obligated to meet any proposed voluntary cost-share or overmatch that is included in the approved project budget because the grant agreement includes the voluntary cost-share or overmatch. If it does not materialize during grant performance, then DEP may reconsider the legitimacy of the award and/or take other appropriate action compliant with the terms of the grant agreement.

#### C. Scrappage

The vehicle, equipment, and/or engine being replaced must be scrapped or rendered permanently disabled within ninety (90) days of being replaced.

1. If a Tier 3 nonroad vehicle, equipment and/or engine is replaced, the Tier 3 unit may be retained or sold if the Tier 3 unit will replace a similar Tier 2 or lower nonroad unit, and the Tier 2 or lower nonroad unit will be scrapped. The scrapped unit must currently be in service, operate more than 500 hours per year, and have a similar usage profile as the replaced unit. It is preferred that the scrapped unit currently operates within the same

- project location(s) as the Tier 3 unit currently operates, however alternative scenarios will be considered. All equipment must operate within Pennsylvania. Under this scenario, a detailed scrappage plan must be submitted and will require prior DEP approval.
2. Cutting a three-inch by three-inch hole in the engine block (the part of the engine containing the cylinders) is the preferred scrapping method. Other acceptable scrappage methods may be considered and will require prior DEP approval.
  3. Disabling the chassis may be completed by cutting through the frame/frame rails on each side at a point located between the front and rear axles. Other acceptable scrappage methods may be considered and will require prior written approval from the DEP Project Officer.
  4. Evidence of appropriate disposal (such as digital photos of the engine tag showing serial number, engine family number, and engine model year, and of the destroyed engine block and cut frame rails or other structural components) is required in a final assistance agreement report submitted to DEP.
  5. Equipment and vehicle components that are not part of the engine or chassis may be salvaged from the unit being replaced (e.g. plow blades, shovels, seats, tires, etc.). If scrapped or salvaged engines, vehicles, equipment, or parts are to be sold, program income requirements apply.
  6. For tire replacement projects, the original tires should be scrapped according to local or state requirements, or the tires can be salvaged for reuse or retreading. If salvaged tires are sold, program income requirements apply.

#### D. Program Income

1. Program income as defined at 2 CFR §200.80 means gross income received by the grantee or subrecipient that is directly generated by a grant supported activity or earned as a result of the grant award during the period of performance. Under DERA grants, program income is generally limited to the sale of scrapped or remanufactured engines/chassis or salvaged engine/vehicle/equipment components and does not include revenue generated by recipients or subrecipients through the commercial use of vehicles and equipment purchased with grant funds. “Period of performance” is the time between the start and end dates of the period of performance as included in the grant award. Program income earned during the project period shall be retained by the recipient and, in accordance with 2 CFR §200.307 recipient is authorized to use program income as follows:
  - a. Program income may be added to the grant award by DEP and recipient and used to further eligible project or program objectives. The program income shall be used for the purposes and under the conditions of the grant agreement.
  - b. Program income may be used to meet the cost-sharing or matching requirement of the grant award, including any mandatory or voluntary cost-share. The amount of the grant award remains the same.
  - c. Program income may be deducted from the total allowable costs to determine the net allowable costs on which the federal share of costs is based. This means that the recipient shall spend program income on project activities before spending/requesting federal funds for project activities. This may result in unspent federal funds at the end of the project period.
2. The recipient will maintain records adequate to document the extent to which transactions generate program income and the disposition of program income.

## V. General Conditions, Reporting, and Project Monitoring

### A. Public Disclosure of Application Documents

PA State Clean Diesel Grant Program proposals are public documents and subject to disclosure to the public upon request. Any information included in the application package that the applicant wishes the Commonwealth to consider as proprietary must be on a separate sheet of paper and must be clearly marked as proprietary, in accordance with Section 13.2 of the Pennsylvania Air Pollution Control Act, 35 P.S. Section 4013.2. This section also states that cause must be shown as to why the information should be considered confidential.

### B. Additional Conditions

The awarding of grant funding is subject to the following conditions:

1. DEP may consider past performance of applicants who have received state funded grants when determining grant eligibility. DEP reserves the right to not award or withhold funds to applicants that have not completed projects or have failed to adhere to grant agreement requirements, including interim and final reporting requirements, for projects funded by the PA State Clean Diesel Grant Program or other state grant programs. This determination will be made by DEP on a case-by-case basis.
2. All projects must be in compliance with all applicable local, state, and federal laws and must adhere to DEP guidance and policies.
3. Applicants must not have any outstanding obligations (financial or otherwise) to the Commonwealth and must not have any unresolved environmental violations.
4. Grantees must secure all permits or approvals otherwise required for the project to proceed, including permits required by DEP.
5. All projects must be consistent with the applicable provisions of the Keystone Principles for Growth, Investment and Resource Conservation; a description of the Keystone Principles is available at: [www.phmc.state.pa.us/bhp/pkp.pdf](http://www.phmc.state.pa.us/bhp/pkp.pdf).

### C. Reporting Requirements

1. Quarterly Reports: Quarterly reports will be submitted to DEP within 14 days after the end of each quarter during the project period. Reporting quarters end March 31, June 30, September 30, and December 31. Quarterly reports can be submitted through standard mail or through electronic mail sent to the DEP Program Administrator. Detailed reporting requirements will be established in the grant agreement.
2. Final Report: A final report will be submitted to DEP upon completion of the project, no later than 30 days after the Project Completion Date established by the grant agreement or future amendments. Detailed requirements for the final report will be established in the grant agreement.
3. 1-Year Follow-Up Report: A 1-year follow-up report will be submitted to DEP, at the earliest, one year after the Project Completion Date, but no later than one year and 30 days after the Project Completion Date. Detailed requirements for the 1-year follow-up report will be established in the grant agreement.

### D. Financial Monitoring

1. Grantees must properly manage and account for funding received under the PA State Clean Diesel Grant Program and any matching funds provided by the applicant and

any program income generated as a result of the project. Appropriate records must be maintained in order to confirm compliance with the conditions of the grant agreement.

2. No credit will be given for funds spent prior to the period of performance, unless otherwise approved in writing by DEP. All funding must be spent in accordance with the spending plan included in the grant agreement.
3. Extensions of the grant period of performance will not be issued, unless DEP concludes it to be necessary by determination or request.
4. Projects may be subject to PA Prevailing Wage Act requirements.
  - a. Grantees shall ensure, where necessary, that construction projects with a cost in excess of \$25,000 that may be subject to PA's Prevailing Wage Act requirements are paid appropriate wages commensurate with the Act.
  - b. For information about the applicability of the Prevailing Wage Act requirements, applicants should contact the Department of Labor and Industry at 717-787-5279 or 800-932-0665 or visit the website at [www.dli.pa.gov](http://www.dli.pa.gov). It is solely the responsibility of the grantee to ensure the act is followed, if applicable.
5. DEP reserves the right to terminate the project and/or recover funding from grantees not properly managing the funding in accordance with the conditions of the program and the grant agreement.
6. DEP reserves the right to inspect projects financed with PA State Clean Diesel Grant Program funds and to audit or require a third-party audit of any project's financial transactions or compliance with agreement terms.

E. Project Status and Monitoring

1. Grantees will, in quarterly reports, provide DEP with the status of the project work, as compared to the Work Plan included in the grant agreement.
2. Grantees will be required to provide a status report with each application for reimbursement, as outlined in the grant agreement.
3. DEP may, at any time during the project period, request an update on the status of the project, to ensure that the project activities are being completed according to the project Work Plan included in the grant agreement.
4. Project Completion
  - a. The project must be completed in accordance with the specifics of the grant agreement. Modifications will not be considered, except for very limited scope and budget changes, including, but not limited to: replacements of equal quality and function, and reallocation of contract budget category dollar amounts to and from other budget categories, as long as the maximum contract dollar amount payable by DEP to the recipient is not exceeded. All changes must be approved by DEP.
  - b. Grantees must adhere to scrappage requirements, when applicable. Scrappage requirements will be detailed in the grant agreement.
  - c. In most cases, the project will not be considered complete until an on-site inspection of the project work is performed by DEP to confirm the project work is complete. DEP may waive this requirement and allow confirmation of project work in another form, to be determined on a case-by-case basis. DEP will send written notification to the grantee when it has confirmed that the project work is complete. On-site inspection, or other project confirmation activities, may occur during the project period if project work is completed early, but must occur no later than 30 days after the Project Completion Date, unless otherwise agreed to in writing by DEP.

## **VI. Application Review, Scoring, and Selection**

### **A. Project Selection**

1. All complete applications will be reviewed by DEP staff, based on the criteria listed below in the scoring matrix.
2. Applications with the highest scores, that meet all other requirements, will be considered first for funding.
3. If additional funds remain, additional funding offers will be made to the next highest scoring applicant.
4. If remaining funds are not adequate to meet the funding request of the next highest scoring applicant, DEP will contact the applicant to see if they would accept funding at a lower level than requested in the application.

### **B. Notification of Applicants**

1. All applicants will receive a letter from the DEP Secretary or designee, addressed to the contact person specified in the application, notifying the applicant whether or not they are being offered grant funding.
2. If an application is not selected for funding, the applicant can contact DEP if they wish to discuss the details of why the application was not selected. Applications may not be selected for funding for incomplete applications, lower score ranking than other applications, or lack of funds to award.
3. Successful applicants will be assigned a DEP project advisor; grantees may be required to meet with DEP staff to review contract requirements.
4. After the announcement of a grant award, DEP will forward a grant agreement to the successful applicant. Successful applicants will be required to execute the grant agreement, including a detailed scope of work, project schedule, budget and other information.
5. If applicants selected for funding do not have a DUNS Number or SAP Vendor Number at the time of award announcement, project work cannot begin until registration for both is complete. See the Application Instructions for additional information.

### **C. Application Review and Scoring**

1. DEP will conduct a comprehensive review of the grant application and supporting documentation. DEP will not be responsible for an application that is rejected due to incomplete or inaccurate information. All complete applications will be reviewed and evaluated by a panel of air quality experts using the criteria defined below. Possible points for each item are listed.

### Scoring Matrix

Eligibility	Yes/No
Applicant is an Eligible Applicant	
Project is an Eligible Project Type	
Project Fleet is an Eligible Fleet	
Project Can Be Completed by September 30, 2018	
Project is Technically Feasible	
Project Results in Environmental Benefit to the Commonwealth	
Applicant Meets Minimum Match Requirements	

Topic	Possible Points	Score
Applicant a small business Yes: 10 points No: 0 points	0 to 10 points	
Emission Reductions: Under this section, points are awarded based on the percentage of annual emissions reduced from the baseline for each pollutant. 0% reduction - 0 points 1% - 25% reduction - 5 points 26% - 50% reduction - 10 points 51% - 75% reduction - 15 points 76% or greater reduction - 20 points	0 to 20 points for each pollutant (100 points total available)	
Emission Reductions: PM.		
Emission Reductions: NO <sub>x</sub>		
Emission Reductions: HC		
Emission Reductions: CO		
Emission Reductions: CO <sub>2</sub>		
Total NO <sub>x</sub> Emission Reductions: Under this section, points are awarded based on the total annual NO <sub>x</sub> emission reductions of the project. Valid applications will be compared to all other valid applications submitted during each application period and ranked from the most total NO <sub>x</sub> emission reductions to the least total NO <sub>x</sub> emission reductions. Maximum points available will be the number of applications received (X). The applicant with the highest total emission reductions will receive X points. The next highest applicant will receive (X-1) points and so on.	X points	
Total NO <sub>x</sub> Emission Reduction Points		
Fleet Size: Under this section, points are awarded for the number of vehicles or engines in the fleet proposed for retrofit, repower, replacement or other modification under the grant program.	5 to 15 points	
Fleet Size (Vehicles and/or Engines): 1 to 4 - 5 points		
Fleet Size (Vehicles and/or Engines): 5 to 8 - 10 points		
Fleet Size (Vehicles and/or Engines): Greater than 8 - 15 points		

Match Funding: Under this section, points are awarded based on whether the applicant meets or exceeds match requirements. Match requirements are specific to each project type. Applicants must meet minimum match requirements and provide proof of the matching funds.	0 to 10 points	
Match Funding - Meets Match Requirement or Exceeds Match Requirement by less than 5% Above Requirement - 0 points		
Match Funding - Exceeds Match Requirement 5-10% Above Requirement - 5 points		
Match Funding - Exceeds Match Requirement by More Than 10% of Requirement - 10 points		
Project Location: Under this section, points are awarded based on the location of the project.	0 to 50 points	
Located in an Act 47 Financially Distressed Municipality - 5 points		
Located in a Brownfield - 5 points		
Located in an Environmental Justice Area - 10 points		
Located in a Priority Area - 5 points		
Located in a High Pollution Area - 5 points		
Population Density: High Population Density Area - 10 points Medium Population Density Area - 5 points Low Population Density Area - 0 points		
Traffic Density: High Traffic Density Area - 10 points Low Traffic Density Area - 0 points		
Project Narrative – See application instructions for details. Business Description - 0 to 5 points Fleet Description - 0 to 10 points Proposed Project Detailed Description - 0 to 10 points Work Plan with Schedule - 0 to 10 points.	0 to 35 points	
Applicant Fleet Description – Points are awarded for filling out all of the mandatory information. See Section 19.b. of the instructions for what information is mandatory. All mandatory information complete - 5 points Mandatory information incomplete - 0 points	0 to 5 points	
<b>TOTAL POINTS</b>	<b>6 to (225+X<sup>1</sup>) points</b>	

1 – Dependent on number of applicants. Total possible points will increase by the number of applicants (X).

## VII. Webinar Information

DEP staff will facilitate a webinar (web-based information session) for the FY2017 PA State Clean Diesel Grant Program on June 6, 2018 to provide general information about the grant program and to answer any questions from attendees relating to the program, including questions about the application and instructions. A link to register for the webinar is available at <http://www.dep.pa.gov/Business/Air/BAQ/Pages/default.aspx> under the 'Grant Availability' heading. Interested parties can also register for the webinar at <http://www.dep.pa.gov/dataandtools/webinars/pages/default.aspx>. The webinar will be recorded and posted online on the same webpage.

## VIII. How to Apply

- A. DEP is accepting applications for the PA State Clean Diesel Grant Program. The application opportunity and the due date are announced in the *Pennsylvania Bulletin* (May 19, 2018) and on the DEP website. Applicants will not be able to submit their application unless all required information is completed. DEP may also offer an additional opportunity to apply for funds through the PA State Clean Diesel Grant Program within the same fiscal year. Any additional application opportunity and application deadline will be announced by a notice published in the *Pennsylvania Bulletin* and on the DEP website.
- B. See the PA State Clean Diesel Grant Application Instructions for step-by-step directions for applying for the PA State Clean Diesel Grant Program. The PA State Clean Diesel Grant Application must be submitted through the Department of Community and Economic Development's (DCED) Electronic Single Application website, also referred to as the eGrants application system, found at: <https://www.esa.dced.state.pa.us/Login.aspx>.
- C. Applications must be submitted online by 4:00 p.m. July 6, 2018.
- D. Late submittals will not be accepted.
- E. DEP Assistance and Contacts
  1. Questions regarding the application process, including signing up for access and any issues with completing the online application should be directed to the DCED Customer Service Center at 1-800-379-7448. They are open 8:30 am-5:00 pm EST Monday thru Friday.
  2. Any questions about the contents of the application questions, deadlines, and webinar registration should be directed to Samantha Harmon at 717.705.7686 or by e-mail at [saharmon@pa.gov](mailto:saharmon@pa.gov).

## IX. Glossary

*Alternative fuel* - gaseous fuels such as hydrogen, natural gas, and propane; alcohols such as ethanol, methanol, and butanol; vegetable and waste-derived oils; and electricity. Other fuels may be considered for replacement projects on a case- by-case basis by DEP.

*Bus* - a motor vehicle with motive power (except a trailer) designed to carry more than 10 individuals.

1. For the purposes of this application and guidance, the term bus includes school buses of Type A, B, C, and D. School buses are defined as “a passenger motor vehicle designed to carry a driver and more than 10 passengers, that the Secretary of Transportation decides is likely to be used significantly to transport preprimary, primary, and secondary school students to or from school or an event related to school. (49 U.S.C. 30125)
2. For the purpose of this application and guidance, the term bus also includes medium- and heavy-duty transit or urban buses. See ‘medium- and heavy-duty highway vehicle’ definition.

*CARB* - California Air Resources Board.

*CFR* - Code of Federal Regulations.

*Closed Crankcase Ventilation System/CCV System* - a system designed to channel the very small amount of the gases that leak by the compression rings on each cylinder during the ignition cycle of the engine (blow-by) from the combustion chambers of an internal combustion engine back into the combustion chamber, in order to thoroughly burn its contaminants which reduce the amount of pollution the engine produces and to utilize power derived by reigniting the fuel that had previously escaped.

*Commonwealth* - Commonwealth of Pennsylvania.

*Diesel fuel* - a fuel that is commonly or commercially known, sold or represented as diesel fuel, including any mixture of primarily liquid hydrocarbons that is sold or represented as suitable for use in an internal combustion, compression-ignition engine.

*Diesel Particulate Filter/DPF* - exhaust after-treatment devices that significantly reduce emissions from diesel fueled vehicles and equipment. DPFs typically use a porous ceramic or cordierite substrate or metallic filter, to physically trap particulate matter (PM) and remove it from the exhaust stream.

*Diesel Oxidation Catalyst/DOC* - exhaust after-treatment devices that reduce emissions from diesel fueled vehicles and equipment. DOCs generally consist of a precious metal coated flow- through honeycomb structure contained in a stainless-steel housing. As hot diesel exhaust flows through the honeycomb structure, the precious metal coating causes a catalytic reaction that breaks down pollutants into less harmful components.

*DEP* - Pennsylvania Department of Environmental Protection.

*DERA* - Diesel Emission Reduction Act, a federal program that provides funding to support projects that reduce harmful emissions from diesel engines.

*Drayage Truck* - any Class 8b in-use on-road vehicle with a gross vehicle weight rating (GVWR) of greater than 33,000 pounds operating on or transgressing through port or intermodal rail yard property for the purpose of loading, unloading or transporting cargo, such as containerized, bulk or break-bulk goods.

*Electric vehicle or equipment* - A vehicle or engine that uses electric motors and motor controllers for propulsion or operation of mechanical equipment in place of more common power sources such as the internal combustion engine (ICE).

*Engine upgrade* - the process of removing parts on a certified engine configuration and replacing them with parts that cause the engine to represent an engine configuration which is certified to meet more stringent federal emission standards. Generally, engines are able to be upgraded to a cleaner EPA-certified configuration through the application of a “kit.”

*EPA* - United States Environmental Protection Agency

*Exhaust controls* - pollution control devices installed in the exhaust system (such as oxidation catalysts and particulate matter filters), or systems that include crankcase emission control (like a closed crankcase filtration system).

*Grantee* - an applicant that has an executed PA State Clean Diesel Grant Program grant agreement with DEP.

*GVWR* - Gross Vehicle Weight Rating - the value specified by the manufacturer as the loaded weight of a single vehicle.

*Idle reduction technology* - technologies that provide power to the vehicle that would otherwise be provided by idling of the main propulsion engine; this technology includes systems designed for stationary or mobile use.

*Hybrid electric vehicle (HEV)* - a motor vehicle that draws propulsion energy from onboard sources of energy that are both:

1. an internal combustion engine using combustible fuel, and
2. a rechargeable energy storage system.

*Medium- and Heavy-Duty Highway Vehicles* - includes Class 5-8 vehicles, based on GVWR

1. Class 5: 16,001 – 19,500 pounds GVWR
2. Class 6: 19,501 – 26,000 pounds GVWR
3. Class 7: 26,001 – 33,000 pounds GVWR
4. Class 8a: 33,001 – 60,000 pounds GVWR
5. Class 8b: 60,001 pounds GVWR and over

*MY* - Model year

*Non-road engine and equipment* - an internal combustion engine or a gas turbine engine used for other purposes than being an engine of a vehicle operated on public roadways, or equipment utilizing such an engine.

*Ozone* - a pollutant formed by chemical reactions between oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOC) in the presence of sunlight.

*PA State Clean Diesel Grant* - monies allocated from the PA State Clean Diesel Grant Program fund for a project approved by DEP.

*PM<sub>2.5</sub>* - fine particulate matter with particles that have a diameter of 2.5 microns or less and the precursor emissions that contribute to the formation of fine particulate matter.

*Replacement* - early replacement of non-road and highway diesel vehicles, engines and equipment with newer, cleaner vehicles, engines and equipment that operate on diesel, alternative fuels, or all-electric and use engines certified by EPA and/or CARB, if applicable, to meet a more stringent set of engine emissions standards.

*Retrofit technology* - technologies that can be installed on existing diesel-powered vehicles that reduce emission levels of one or more pollutants. Retrofit technologies include but are not limited to exhaust controls and engine upgrades.

*Selective Catalytic Reduction/SCR* - an advanced active emissions control technology system that injects a liquid-reductant agent through a special catalyst into the exhaust stream of a diesel engine. The reductant source is usually automotive-grade urea, otherwise known as Diesel Exhaust Fluid (DEF). The chemical reaction is known as "reduction" where the DEF is the reducing agent that reacts with NO<sub>x</sub> to convert the pollutants into nitrogen, water and tiny amounts of CO<sub>2</sub>.

*TRU* - transport refrigeration unit. Usually used in conjunction with a tractor hauling goods that require refrigeration or freezing.

## Appendix 1: Population Density

This document defines high population density as equal to or greater than 5,000 residents per square mile. Medium population density is defined as 2,000 to less than 5,000 residents per square mile. Low population density is defined as fewer than 2,000 residents per square mile. These designations are based on data from the 2010 U.S. Census<sup>5</sup>. Read the columns top to bottom, left to right.

Note: If your municipality is located in multiple counties, the designations below are for the portion of the municipality in the county indicated.

### High Population Density Areas

#### **Adams County**

Mcsherrystown Borough

#### **Allegheny County**

Aspinwall Borough  
Avalon Borough  
Bellevue Borough  
Brackenridge Borough  
Brentwood Borough  
Castle Shannon Borough  
Chalfant Borough  
Crafton Borough  
Dormont Borough  
East McKeesport Borough  
Edgewood Borough  
Homestead Borough  
Ingram Borough  
McKees Rocks Borough  
Millvale Borough  
Mount Lebanon Township  
Mount Oliver Borough  
Pennsbury Village Borough  
Pitcairn Borough  
Pittsburgh City  
Sharpsburg Borough  
Swissvale Borough  
Turtle Creek Borough  
West View Borough  
Wilkinsburg Borough  
Wilmerding Borough

#### **Armstrong County**

*No Qualifying Municipalities*

#### **Beaver County**

New Brighton Borough  
Rochester Borough

#### **Bedford County**

Coaldale Borough

#### **Berks County**

Boyertown Borough  
Mount Penn Borough  
Reading City  
Shillington Borough  
West Reading Borough

#### **Blair County**

*No Qualifying Municipalities*

#### **Bradford County**

*No Qualifying Municipalities*

#### **Bucks County**

Bristol Borough  
Pennel Borough  
Richlandtown Borough

#### **Butler County**

Butler City

#### **Cambria County**

Dale Borough

#### **Cameron County**

*No Qualifying Municipalities*

#### **Carbon County**

*No Qualifying Municipalities*

#### **Centre County**

State College Borough

#### **Chester County**

Coatesville City  
Kennett Square Borough  
West Chester Borough

#### **Clarion County**

*No Qualifying Municipalities*

#### **Clearfield County**

*No Qualifying Municipalities*

#### **Clinton County**

*No Qualifying Municipalities*

#### **Columbia County**

*No Qualifying Municipalities*

#### **Crawford County**

*No Qualifying Municipalities*

#### **Cumberland County**

Shiremanstown Borough

#### **Dauphin County**

Harrisburg City  
Penbrook Borough  
Williamstown Borough

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<sup>5</sup> U.S. Department of Commerce. (2012). *Pennsylvania: 2010 – Population and Housing Unit Counts – 2010 Census of Population and Housing*. Washington, D.C. U.S. Government Printing Office

## Appendix 1: Population Density

### **Delaware County**

Aldan Borough  
 Chester City  
 Clifton Heights Borough  
 Collingdale Borough  
 Colwyn Borough  
 Darby Borough  
 Darby Township  
 East Lansdowne Borough  
 Folcroft Borough  
 Glenolden Borough  
 Lansdowne Borough  
 Media Borough  
 Millbourne Borough  
 Morton Borough  
 Norwood Borough  
 Parkside Borough  
 Prospect Park Borough  
 Ridley Park Borough  
 Ridley Township  
 Rutledge Borough  
 Sharon Hill Borough  
 Upper Darby Township  
 Yeadon Borough

### **Elk County**

*No Qualifying Municipalities*

### **Erie County**

Erie City  
 Wesleyville Borough

### **Fayette County**

Uniontown City

### **Forest County**

*No Qualifying Municipalities*

### **Franklin County**

*No Qualifying Municipalities*

### **Fulton County**

*No Qualifying Municipalities*

### **Greene County**

Waynesburg Borough

### **Huntingdon County**

*No Qualifying Municipalities*

### **Indiana County**

Indiana Borough

### **Jefferson County**

*No Qualifying Municipalities*

### **Juniata County**

Mifflintown Borough

### **Lackawanna County**

*No Qualifying Municipalities*

### **Lancaster County**

Lancaster City

### **Lawrence County**

*No Qualifying Municipalities*

### **Lebanon County**

Lebanon City

### **Lehigh County**

Allentown City  
 Coplay Borough  
 Fountain Hill Borough

### **Luzerne County**

Freeland Borough  
 Kingston Borough  
 Plymouth Borough  
 West Pittston Borough  
 Wilkes-Barre City

### **Lycoming County**

*No Qualifying Municipalities*

### **McKean County**

*No Qualifying Municipalities*

### **Mercer County**

*No Qualifying Municipalities*

### **Mifflin County**

*No Qualifying Municipalities*

### **Monroe County**

*No Qualifying Municipalities*

### **Montgomery County**

Ambler Borough  
 Bridgeport Borough  
 Conshohocken Borough  
 East Greenville Borough  
 Hatboro Borough  
 Hatfield Borough  
 Jenkintown Borough  
 Lansdale Borough  
 Narberth Borough  
 Norristown Borough  
 North Wales Borough  
 Rockledge Borough  
 Royersford Borough

Souderton Borough  
 Telford Borough (Part)

### **Montour County**

Washingtonville Borough

### **Northampton County**

Easton City  
 Wilson Borough

### **Northumberland County**

Mount Carmel Borough  
 Shamokin City

### **Perry County**

Newport Borough

### **Philadelphia County**

Philadelphia City

### **Pike County**

*No Qualifying Municipalities*

### **Potter County**

*No Qualifying Municipalities*

### **Schuylkill County**

Frackville Borough  
 Mahanoy City Borough  
 McAdoo Borough  
 Minersville Borough

### **Snyder County**

*No Qualifying Municipalities*

### **Somerset County**

*No Qualifying Municipalities*

### **Sullivan County**

*No Qualifying Municipalities*

### **Susquehanna County**

*No Qualifying Municipalities*

### **Tioga County**

*No Qualifying Municipalities*

### **Union County**

Lewisburg Borough

### **Venango County**

*No Qualifying Municipalities*

### **Warren County**

*No Qualifying Municipalities*

## Appendix 1: Population Density

### Washington County

Charleroi Borough  
McDonald Borough (Part)  
North Charleroi Borough

### Wayne County

*No Qualifying Municipalities*

### Westmoreland County

Arnold City  
East Vandergrift Borough  
Southwest Greensburg Borough

### Wyoming County

*No Qualifying Municipalities*

### York County

Dallastown Borough  
North York Borough  
West York Borough  
York City

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## **Medium Population Density Areas**

### Adams County

East Berlin Borough  
Gettysburg Borough  
Littlestown Borough  
New Oxford Borough  
York Springs Borough

### Allegheny County

Baldwin Borough  
Baldwin Township  
Ben Avon Borough  
Ben Avon Heights Borough  
Bethel Park Municipality  
Blawnox Borough  
Braddock Borough  
Bridgeville Borough  
Carnegie Borough  
Cheswick Borough  
Clairton City  
Coraopolis Borough  
Duquesne City  
East Pittsburgh Borough  
Elizabeth Borough  
Emsworth Borough  
Etna Borough  
Forest Hills Borough  
Glassport Borough  
Green Tree Borough  
Heidelberg Borough  
McKeesport City  
Munhall Borough  
North Braddock Borough  
Oakdale Borough  
Oakmont Borough  
Penn Hills Township  
Pleasant Hills Borough  
Port Vue Borough  
Rankin Borough  
Ross Township  
Scott Township  
Sewickley Borough  
Shaler Township  
Springdale Borough  
Stowe Township  
Tarentum Borough

Verona Borough  
Versailles Borough  
West Elizabeth Borough  
West Homestead Borough  
Whitaker Borough  
Whitehall Borough  
Wilkins Township

### Armstrong County

Ford City Borough  
Ford Cliff Borough  
Kittanning Borough  
Leechburg Borough  
Manorville Borough  
North Apollo Borough  
South Bethlehem Borough  
West Kittanning Borough

### Beaver County

Aliquippa City  
Ambridge Borough  
Beaver Borough  
Beaver Falls City  
Darlington Borough  
Eastvale Borough  
Freedom Borough  
Monaca Borough  
Patterson Heights Borough  
Pulaski Township

### Bedford County

Bedford Borough  
Hopewell Borough  
New Paris Borough  
Pleasantville Borough  
St. Clairsville Borough  
Woodbury Borough

### Berks County

Bally Borough  
Bernville Borough  
Birdsboro Borough  
Centerport Borough  
Fleetwood Borough

Hamburg Borough  
Kenhorst Borough  
Kutztown Borough  
Laureldale Borough  
Leesport Borough  
Mohnton Borough  
Robesonia Borough  
Shoemakersville Borough  
Sinking Spring Borough  
St. Lawrence Borough  
Strausstown Borough  
Topton Borough  
Wernersville Borough  
Womelsdorf Borough  
Wyomissing Borough

### Blair County

Altoona City  
Bellwood Borough  
Duncansville Borough  
Hollidaysburg Borough  
Martinsburg Borough  
Newry Borough  
Roaring Spring Borough  
Tyrone Borough  
Williamsburg Borough

### Bradford County

Sayre Borough  
Towanda Borough

### Bucks County

Bensalem Township  
Bristol Township  
Chalfont Borough  
Doylestown Borough  
Dublin Borough  
Hulmeville Borough  
Ivyland Borough  
Langhorne Borough  
Langhorne Manor Borough  
Lower Southampton Township  
Middletown Township  
Morrisville Borough  
New Britain Borough

## Appendix 1: Population Density

(Bucks Co cont.)  
Newtown Borough  
Perkasie Borough  
Quakertown Borough  
Sellersville Borough  
Silverdale Borough  
Telford Borough (Part)  
Trumbauersville Borough  
Upper Southampton Township  
Warminster Township  
Yardley Borough

### **Butler County**

Evans City Borough  
Harmony Borough  
Mars Borough  
Seven Fields Borough  
Slippery Rock Borough

### **Cambria County**

Brownstown Borough  
Cresson Borough  
East Conemaugh Borough  
Ebensburg Borough  
Ferndale Borough  
Gallitzin Borough  
Geistown Borough  
Hastings Borough  
Johnstown City  
Lorain Borough  
Patton Borough  
Portage Borough  
Sankertown Borough  
Southmont Borough  
Westmont Borough

### **Cameron County**

Emporium Borough

### **Carbon County**

Beaver Meadows Borough  
Lansford Borough  
Lehighton Borough  
Palmerton Borough  
Weissport Borough

### **Centre County**

Bellefonte Borough  
Centre Hall Borough  
Howard Borough  
Milesburg Borough  
Philipsburg Borough

### **Chester County**

Avondale Borough  
Downingtown Borough

Honey Brook Borough  
Malvern Borough  
Oxford Borough  
Parkesburg Borough  
Phoenixville Borough  
Spring City Borough  
West Grove Borough

### **Clarion County**

Clarion Borough  
Knox Borough  
New Bethlehem Borough  
Rimersburg Borough

### **Clearfield County**

Chester Hill Borough  
Clearfield Borough  
Dubois City  
Houtzdale Borough  
Osceola Mills Borough

### **Clinton County**

Avis Borough  
Flemington Borough  
Lock Haven City  
South Renovo Borough

### **Columbia County**

Berwick Borough  
Bloomsburg Town  
Catawissa Borough

### **Crawford County**

Cambridge Springs Borough  
Meadville City

### **Cumberland County**

Camp Hill Borough  
Carlisle Borough  
Lemoyne Borough  
Mechanicsburg Borough  
New Cumberland Borough  
Newville Borough  
Shippensburg Borough (Part)  
Shippensburg Township  
Wormleysburg Borough

### **Dauphin County**

Elizabethville Borough  
Halifax Borough  
Highspire Borough  
Hummelstown Borough  
Middletown Borough  
Millersburg Borough  
Paxtang Borough

Royalton Borough  
Steelton Borough

### **Delaware County**

Aston Township  
Brookhaven Borough  
Chester Township  
Eddystone Borough  
Haverford Township  
Lower Chichester Township  
Marcus Hook Borough  
Marple Township  
Nether Providence Township  
Radnor Township  
Springfield Township  
Swarthmore Borough  
Upland Borough  
Upper Chichester Township

### **Elk County**

*No Qualifying Municipalities*

### **Erie County**

Edinboro Borough  
Lawrence Park Township  
North East Borough

### **Fayette County**

Belle Vernon Borough  
Brownsville Borough  
Connellsville City  
Dawson Borough  
Everson Borough  
Fayette City Borough  
Masontown Borough  
Point Marion Borough  
Vanderbilt Borough

### **Forest County**

*No Qualifying Municipalities*

### **Franklin County**

Chambersburg Borough  
Greencastle Borough  
Mont Alto Borough  
Orrstown Borough  
Waynesboro Borough

### **Fulton County**

McConnellsburg Borough

### **Greene County**

Carmichaels Borough  
Clarksville Borough  
Greensboro Borough

## Appendix 1: Population Density

### **Huntingdon County**

Alexandria Borough  
Mapleton Borough  
Mount Union Borough  
Orbisonia Borough  
Shade Gap Borough

### **Indiana County**

Armagh Borough  
Blairsville Borough  
Clymer Borough  
Ernest Borough  
Homer City Borough  
Saltsburg Borough

### **Jefferson County**

*No Qualifying Municipalities*

### **Juniata County**

Mifflin Borough  
Thompsontown Borough

### **Lackawanna County**

Carbondale City  
Clarks Green Borough  
Clarks Summit Borough  
Jermyn Borough  
Old Forge Borough  
Scranton City

### **Lancaster County**

Akron Borough  
Christiana Borough  
Columbia Borough  
Denver Borough  
East Petersburg Borough  
Elizabethtown Borough  
Ephrata Borough  
Lancaster Township  
Lititz Borough  
Manheim Borough  
Marietta Borough  
Millersville Borough  
Mount Joy Borough  
Mountville Borough  
New Holland Borough  
Strasburg Borough  
Terre Hill Borough

### **Lawrence County**

Ellport Borough  
Ellwood City Borough (Part)  
New Castle City  
New Wilmington Borough  
South New Castle Borough

### **Lebanon County**

Annville Township  
Cleona Borough  
Jonestown Borough  
Myerstown Borough  
Palmyra Borough  
West Lebanon Township

### **Lehigh County**

Alburtis Borough  
Bethlehem City (Part)  
Catasauqua Borough  
Coopersburg Borough  
Emmaus Borough  
Macungie Borough  
Slatington Borough  
Whitehall Township

### **Luzerne County**

Ashley Borough  
Avoca Borough  
Edwardsville Borough  
Forty Fort Borough  
Hazleton City  
Luzerne Borough  
Nanticoke City  
Pittston City  
Pringle Borough  
Swoyersville Borough  
West Hazleton Borough  
Wyoming Borough

### **Lycoming County**

Duboistown Borough  
Hughesville Borough  
Jersey Shore Borough  
Montgomery Borough  
Muncy Borough  
South Williamsport Borough  
Williamsport City

### **McKean County**

Bradford City  
Kane Borough

### **Mercer County**

Farrell City  
Greenville Borough  
Grove City Borough  
Sharon City  
Sharpsville Borough

### **Mifflin County**

Juniata Terrace Borough  
Lewistown Borough  
McVeytown Borough

### **Monroe County**

East Stroudsburg Borough  
Stroudsburg Borough

### **Montgomery County**

Abington Township  
Cheltenham Township  
Collegeville Borough  
East Norriton Township  
Lower Merion Township  
Montgomery Township  
Pennsburg Borough  
Pottstown Borough  
Red Hill Borough  
Schwenksville Borough  
Springfield Township  
Upper Moreland Township  
West Norriton Township

### **Montour County**

Danville Borough

### **Northampton County**

Bangor Borough  
Bath Borough  
Bethlehem City (Part)  
Freemansburg Borough  
Hellertown Borough  
Nazareth Borough  
North Catasauqua Borough  
Northampton Borough  
Pen Argyl Borough  
Roseto Borough  
Tatamy Borough  
Walnutport Borough  
West Easton Borough  
Wind Gap Borough

### **Northumberland County**

Kulpmont Borough  
Marion Heights Borough  
McEwensville Borough  
Milton Borough  
Northumberland Borough  
Sunbury City  
Watsontown Borough

### **Perry County**

Bloomfield Borough  
Duncannon Borough  
Landisburg Borough  
New Buffalo Borough

### **Philadelphia County**

*No Qualifying Municipalities*

## Appendix 1: Population Density

### **Pike County**

Matamoras Borough  
Milford Borough

### **Potter County**

*No Qualifying Municipalities*

### **Schuylkill County**

Girardville Borough  
Pine Grove Borough  
Port Carbon Borough  
Pottsville City  
Schuylkill Haven Borough  
Shenandoah Borough  
St. Clair Borough  
Tower City Borough  
Tremont Borough

### **Snyder County**

Selinsgrove Borough

### **Somerset County**

Berlin Borough  
Central City Borough  
Meyersdale Borough  
Paint Borough  
Rockwood Borough  
Somerset Borough  
Windber Borough

### **Sullivan County**

*No Qualifying Municipalities*

### **Susquehanna County**

Forest City Borough  
Great Bend Borough  
Hallstead Borough  
Susquehanna Depot Borough

### **Tioga County**

*No Qualifying Municipalities*

### **Union County**

New Berlin Borough

### **Venango County**

Oil City

### **Warren County**

Warren City

### **Washington County**

Burgettstown Borough  
Canonsburg Borough  
Claysville Borough  
Donora Borough  
East Washington Borough  
Finleyville Borough  
Houston Borough  
Midway Borough  
Monongahela City  
New Eagle Borough  
Roscoe Borough  
Washington City

### **Wayne County**

Hawley Borough

### **Westmoreland County**

Bolivar Borough  
Delmont Borough  
Derry Borough  
Export Borough  
Greensburg City  
Hyde Park Borough  
Irwin Borough  
Jeannette City  
Latrobe City  
Ligonier Borough  
Monessen City  
Mount Pleasant Borough  
New Florence Borough  
New Kensington City

North Belle Vernon Borough

North Irwin Borough

Penn Borough

Scottdale Borough

Seward Borough

Smithton Borough

South Greensburg Borough

Sutersville Borough

Trafford Borough (Part)

Vandergrift Borough

West Newton Borough

Youngstown Borough

### **Wyoming County**

Tunkhannock Borough

### **York County**

Delta Borough

Dillsburg Borough

Dover Borough

East Prospect Borough

Glen Rock Borough

Goldsboro Borough

Hallam Borough

Hanover Borough

Lewisberry Borough

Manchester Borough

Mount Wolf Borough

New Freedom Borough

Red Lion Borough

Shrewsbury Borough

Spring Grove Borough

Stewartstown Borough

Windsor Borough

Wrightsville Borough

Yoe Borough

York Haven Borough

## Appendix 1: Population Density

### **Low Population Density Areas**

#### **Adams County**

Abbottstown Borough  
Arendtsville Borough  
Bendersville Borough  
Berwick Township  
Biglerville Borough  
Bonneauville Borough  
Butler Township  
Carroll Valley Borough  
Conewago Township  
Cumberland Township  
Fairfield Borough  
Franklin Township  
Freedom Township  
Germany Township  
Hamilton Township  
Hamiltonban Township  
Highland Township  
Huntington Township  
Latimore Township  
Liberty Township  
Menallen Township  
Mount Joy Township  
Mount Pleasant Township  
Oxford Township  
Reading Township  
Straban Township  
Tyrone Township  
Union Township

#### **Allegheny County**

Aleppo Township  
Bell Acres Borough  
Braddock Hills Borough  
Bradford Woods Borough  
Churchill Borough  
Collier Township  
Crescent Township  
Dravosburg Borough  
East Deer Township  
Edgeworth Borough  
Elizabeth Township  
Fawn Township  
Findlay Township  
Forward Township  
Fox Chapel Borough  
Franklin Park Borough  
Frazer Township  
Glen Osborne Borough  
Glenfield Borough  
Hampton Township  
Harmar Township  
Harrison Township  
Haysville Borough  
Indiana Township  
Jefferson Hills Borough

Kennedy Township  
Kilbuck Township  
Leet Township  
Leetsdale Borough  
Liberty Borough  
Lincoln Borough  
Marshall Township  
McCandless Township  
McDonald Borough (Part)  
Monroeville Municipality  
Moon Township  
Neville Township  
North Fayette Township  
North Versailles Township  
O'Hara Township  
Ohio Township  
Pine Township  
Plum Borough  
Reserve Township  
Richland Township  
Robinson Township  
Rosslyn Farms Borough  
Sewickley Heights Borough  
Sewickley Hills Borough  
South Fayette Township  
South Park Township  
South Versailles Township  
Springdale Township  
Thornburg Borough  
Trafford Borough (Part)  
Upper St. Clair Township  
Wall Borough  
West Deer Township  
West Mifflin Borough  
White Oak Borough

#### **Armstrong County**

Atwood Borough  
Bethel Township  
Boggs Township  
Bradys Bend Township  
Burrell Township  
Cadogan Township  
Cowanshannock Township  
Dayton Borough  
East Franklin Township  
Elderton Borough  
Freeport Borough  
Gilpin Township  
Hovey Township  
Kiskiminetas Township  
Kittanning Township  
Madison Township  
Mahoning Township  
Manor Township  
North Buffalo Township

Parker City  
Parks Township  
Perry Township  
Pine Township  
Plumcreek Township  
Rayburn Township  
Redbank Township  
Rural Valley Borough  
South Bend Township  
South Buffalo Township  
Sugarcreek Township  
Valley Township  
Washington Township  
Wayne Township  
West Franklin Township  
Worthington Borough

#### **Beaver County**

Baden Borough  
Big Beaver Borough  
Bridgewater Borough  
Brighton Township  
Center Township  
Chippewa Township  
Conway Borough  
Darlington Township  
Daugherty Township  
East Rochester Borough  
Economy Borough  
Ellwood City Borough (Part)  
Fallston Borough  
Frankfort Springs Borough  
Franklin Township  
Georgetown Borough  
Glasgow Borough  
Greene Township  
Hanover Township  
Harmony Township  
Homewood Borough  
Hookstown Borough  
Hopewell Township  
Independence Township  
Industry Borough  
Koppel Borough  
Marion Township  
Midland Borough  
New Galilee Borough  
New Sewickley Township  
North Sewickley Township  
Ohioville Borough  
Patterson Township  
Potter Township  
Raccoon Township  
Rochester Township  
Shippingport Borough  
South Beaver Township

## Appendix 1: Population Density

(Beaver Co. cont.)  
South Heights Borough  
Vanport Township  
West Mayfield Borough  
White Township

### **Bedford County**

Bedford Township  
Bloomfield Township  
Broad Top Township  
Colerain Township  
Cumberland Valley Township  
East Providence Township  
East St. Clair Township  
Everett Borough  
Harrison Township  
Hopewell Township  
Hyndman Borough  
Juniata Township  
Kimmel Township  
King Township  
Liberty Township  
Lincoln Township  
Londonderry Township  
Mann Township  
Manns Choice Borough  
Monroe Township  
Napier Township  
Pavia Township  
Rainsburg Borough  
Saxton Borough  
Schellsburg Borough  
Snake Spring Township  
South Woodbury Township  
Southampton Township  
West Providence Township  
West St. Clair Township  
Woodbury Township

### **Berks County**

Adamstown Borough (Part)  
Albany Township  
Alsace Township  
Amity Township  
Bechtelsville Borough  
Bern Township  
Bethel Township  
Brecknock Township  
Caernarvon Township  
Centre Township  
Colebrookdale Township  
Cumru Township  
District Township  
Douglass Township  
Earl Township  
Exeter Township  
Greenwich Township  
Heidelberg Township

Hereford Township  
Jefferson Township  
Lenhartsville Borough  
Longswamp Township  
Lower Alsace Township  
Lower Heidelberg Township  
Lyons Borough  
Maidencreek Township  
Marion Township  
Maxatawny Township  
Muhlenberg Township  
New Morgan Borough  
North Heidelberg Township  
Oley Township  
Ontelaunee Township  
Penn Township  
Perry Township  
Pike Township  
Richmond Township  
Robeson Township  
Rockland Township  
Ruscombmanor Township  
South Heidelberg Township  
Spring Township  
Tilden Township  
Tulpehocken Township  
Union Township  
Upper Bern Township  
Upper Tulpehocken Township  
Washington Township  
Windsor Township

### **Blair County**

Allegheny Township  
Antis Township  
Blair Township  
Catharine Township  
Frankstown Township  
Freedom Township  
Greenfield Township  
Huston Township  
Juniata Township  
Logan Township  
North Woodbury Township  
Snyder Township  
Taylor Township  
Tunnelhill Borough (Part)  
Tyrone Township  
Woodbury Township

### **Bradford County**

Alba Borough  
Albany Township  
Armenia Township  
Asylum Township  
Athens Borough  
Athens Township  
Burlington Borough

Burlington Township  
Canton Borough  
Canton Township  
Columbia Township  
Franklin Township  
Granville Township  
Herrick Township  
Le Raysville Borough  
Leroy Township  
Litchfield Township  
Monroe Borough  
Monroe Township  
New Albany Borough  
North Towanda Township  
Orwell Township  
Overton Township  
Pike Township  
Ridgebury Township  
Rome Borough  
Rome Township  
Sheshequin Township  
Smithfield Township  
South Creek Township  
South Waverly Borough  
Springfield Township  
Standing Stone Township  
Stevens Township  
Sylvania Borough  
Terry Township  
Towanda Township  
Troy Borough  
Troy Township  
Tuscarora Township  
Ulster Township  
Warren Township  
Wells Township  
West Burlington Township  
Wilmot Township  
Windham Township  
Wyalusing Borough  
Wyalusing Township  
Wysox Township

### **Bucks County**

Bedminster Township  
Bridgeton Township  
Buckingham Township  
Doylestown Township  
Durham Township  
East Rockhill Township  
Falls Township  
Haycock Township  
Hilltown Township  
Lower Makefield Township  
Milford Township  
New Britain Township  
New Hope Borough  
Newtown Township

## Appendix 1: Population Density

(Bucks Co. cont.)  
Nockamixon Township  
Northampton Township  
Plumstead Township  
Richland Township  
Riegelsville Borough  
Solebury Township  
Springfield Township  
Tinicum Township  
Tullytown Borough  
Upper Makefield Township  
Warrington Township  
Warwick Township  
West Rockhill Township  
Wrightstown Township

### **Butler County**

Adams Township  
Allegheny Township  
Brady Township  
Bruin Borough  
Buffalo Township  
Butler Township  
Callery Borough  
Center Township  
Cherry Township  
Cherry Valley Borough  
Chicora Borough  
Clay Township  
Clearfield Township  
Clinton Township  
Concord Township  
Connoquenessing Borough  
Connoquenessing Township  
Cranberry Township  
Donegal Township  
East Butler Borough  
Eau Claire Borough  
Fairview Borough  
Fairview Township  
Forward Township  
Franklin Township  
Harrisville Borough  
Jackson Township  
Jefferson Township  
Karns City Borough  
Lancaster Township  
Marion Township  
Mercer Township  
Middlesex Township  
Muddy Creek Township  
Oakland Township  
Parker Township  
Penn Township  
Petrolia Borough  
Portersville Borough  
Prospect Borough  
Saxonburg Borough

Slippery Rock Township  
Summit Township  
Valencia Borough  
Venango Township  
Washington Township  
West Liberty Borough  
West Sunbury Borough  
Winfield Township  
Worth Township  
Zelienople Borough

### **Cambria County**

Adams Township  
Allegheny Township  
Ashville Borough  
Barr Township  
Blacklick Township  
Cambria Township  
Carrolltown Borough  
Cassandra Borough  
Chest Springs Borough  
Chest Township  
Clearfield Township  
Conemaugh Township  
Cresson Township  
Croyle Township  
Daisytown Borough  
Dean Township  
East Carroll Township  
East Taylor Township  
Ehrenfeld Borough  
Elder Township  
Franklin Borough  
Gallitzin Township  
Jackson Township  
Lilly Borough  
Loretto Borough  
Lower Yoder Township  
Middle Taylor Township  
Munster Township  
Nanty-Glo Borough  
Northern Cambria Borough  
Portage Township  
Reade Township  
Richland Township  
Scalp Level Borough  
South Fork Borough  
Stonycreek Township  
Summerhill Borough  
Summerhill Township  
Susquehanna Township  
Tunnelhill Borough (Part)  
Upper Yoder Township  
Vintondale Borough  
Washington Township  
West Carroll Township  
West Taylor Township  
White Township

Wilmore Borough

### **Cameron County**

Driftwood Borough  
Gibson Township  
Grove Township  
Lumber Township  
Portage Township  
Shippen Township

### **Carbon County**

Banks Township  
Bowmanstown Borough  
East Penn Township  
East Side Borough  
Franklin Township  
Jim Thorpe Borough  
Kidder Township  
Lausanne Township  
Lehigh Township  
Lower Towamensing Township  
Mahoning Township  
Nesquehoning Borough  
Packer Township  
Parryville Borough  
Penn Forest Township  
Summit Hill Borough  
Towamensing Township  
Weatherly Borough

### **Centre County**

Benner Township  
Boggs Township  
Burnside Township  
College Township  
Curtin Township  
Ferguson Township  
Gregg Township  
Haines Township  
Halfmoon Township  
Harris Township  
Howard Township  
Huston Township  
Liberty Township  
Marion Township  
Miles Township  
Millheim Borough  
Patton Township  
Penn Township  
Port Matilda Borough  
Potter Township  
Rush Township  
Snow Shoe Borough  
Snow Shoe Township  
Spring Township  
Taylor Township  
Union Township  
Unionville Borough

## Appendix 1: Population Density

(Centre Co. cont.)  
Walker Township  
Worth Township

### **Chester County**

Atglen Borough  
Birmingham Township  
Caln Township  
Charlestown Township  
East Bradford Township  
East Brandywine Township  
East Caln Township  
East Coventry Township  
East Fallowfield Township  
East Goshen Township  
East Marlborough Township  
East Nantmeal Township  
East Nottingham Township  
East Pikeland Township  
East Vincent Township  
East Whiteland Township  
Easttown Township  
Elk Township  
Elverson Borough  
Franklin Township  
Highland Township  
Honey Brook Township  
Kennett Township  
London Britain Township  
London Grove Township  
Londonderry Township  
Lower Oxford Township  
Modena Borough  
New Garden Township  
New London Township  
Newlin Township  
North Coventry Township  
Penn Township  
Pennsbury Township  
Pocopson Township  
Sadsbury Township  
Schuylkill Township  
South Coatesville Borough  
South Coventry Township  
Thornbury Township  
Tredyffrin Township  
Upper Oxford Township  
Upper Uwchlan Township  
Uwchlan Township  
Valley Township  
Wallace Township  
Warwick Township  
West Bradford Township  
West Brandywine Township  
West Caln Township  
West Fallowfield Township  
West Goshen Township  
West Marlborough Township

West Nantmeal Township  
West Nottingham Township  
West Pikeland Township  
West Sadsbury Township  
West Vincent Township  
West Whiteland Township  
Westtown Township  
Willistown Township

### **Clarion County**

Ashland Township  
Beaver Township  
Brady Township  
Callensburg Borough  
Clarion Township  
East Brady Borough  
Elk Township  
Emlenton Borough (Part)  
Farmington Township  
Foxburg Borough  
Hawthorn Borough  
Highland Township  
Knox Township  
Licking Township  
Limestone Township  
Madison Township  
Millcreek Township  
Monroe Township  
Paint Township  
Perry Township  
Piney Township  
Porter Township  
Redbank Township  
Richland Township  
Salem Township  
Shipperville Borough  
Sligo Borough  
St. Petersburg Borough  
Strattanville Borough  
Toby Township  
Washington Township

### **Clearfield County**

Beccaria Township  
Bell Township  
Bigler Township  
Bloom Township  
Boggs Township  
Bradford Township  
Brady Township  
Brisbin Borough  
Burnside Borough  
Burnside Township  
Chest Township  
Coalport Borough  
Cooper Township  
Covington Township  
Curwensville Borough

Decatur Township  
Falls Creek Borough (Part)  
Ferguson Township  
Girard Township  
Glen Hope Borough  
Goshen Township  
Graham Township  
Grampian Borough  
Greenwood Township  
Gulich Township  
Huston Township  
Irvona Borough  
Jordan Township  
Karthaus Township  
Knox Township  
Lawrence Township  
Mahaffey Borough  
Morris Township  
New Washington Borough  
Newburg Borough  
Penn Township  
Pike Township  
Pine Township  
Ramey Borough  
Sandy Township  
Troutville Borough  
Union Township  
Wallacetown Borough  
Westover Borough  
Woodward Township

### **Clinton County**

Allison Township  
Bald Eagle Township  
Beech Creek Borough  
Beech Creek Township  
Castanea Township  
Chapman Township  
Colebrook Township  
Crawford Township  
Dunnstable Township  
East Keating Township  
Gallagher Township  
Greene Township  
Grugan Township  
Lamar Township  
Leidy Township  
Logan Township  
Loganton Borough  
Mill Hall Borough  
Noyes Township  
Pine Creek Township  
Porter Township  
Renovo Borough  
Wayne Township  
West Keating Township  
Woodward Township

## Appendix 1: Population Density

### **Columbia County**

Ashland Borough (Part)  
Beaver Township  
Benton Borough  
Benton Township  
Briar Creek Borough  
Briar Creek Township  
Catawissa Township  
Centralia Borough  
Cleveland Township  
Conyngham Township  
Fishing Creek Township  
Franklin Township  
Greenwood Township  
Hemlock Township  
Jackson Township  
Locust Township  
Madison Township  
Main Township  
Mifflin Township  
Millville Borough  
Montour Township  
Mount Pleasant Township  
North Centre Township  
Orange Township  
Orangeville Borough  
Pine Township  
Roaring Creek Township  
Scott Township  
South Centre Township  
Stillwater Borough  
Sugarloaf Township

### **Crawford County**

Athens Township  
Beaver Township  
Bloomfield Township  
Blooming Valley Borough  
Cambridge Township  
Centerville Borough  
Cochranon Borough  
Conneaut Lake Borough  
Conneaut Township  
Conneautville Borough  
Cussewago Township  
East Fairfield Township  
East Fallowfield Township  
East Mead Township  
Fairfield Township  
Greenwood Township  
Hayfield Township  
Hydetown Borough  
Linesville Borough  
North Shenango Township  
Oil Creek Township  
Pine Township  
Randolph Township  
Richmond Township

Rockdale Township  
Rome Township  
Sadsbury Township  
Saegertown Borough  
South Shenango Township  
Sparta Township  
Spartansburg Borough  
Spring Township  
Springboro Borough  
Steuben Township  
Summerhill Township  
Summit Township  
Titusville City  
Townville Borough  
Troy Township  
Union Township  
Venango Borough  
Venango Township  
Vernon Township  
Wayne Township  
West Fallowfield Township  
West Mead Township  
West Shenango Township  
Woodcock Borough  
Woodcock Township

### **Cumberland County**

Cooke Township  
Dickinson Township  
East Pennsboro Township  
Hampden Township  
Hopewell Township  
Lower Allen Township  
Lower Frankford Township  
Lower Mifflin Township  
Middlesex Township  
Monroe Township  
Mount Holly Springs Borough  
Newburg Borough  
North Middleton Township  
North Newton Township  
Penn Township  
Silver Spring Township  
South Middleton Township  
South Newton Township  
Southampton Township  
Upper Allen Township  
Upper Frankford Township  
Upper Mifflin Township  
West Pennsboro Township

### **Dauphin County**

Berrysburg Borough  
Conewago Township  
Dauphin Borough  
Derry Township  
East Hanover Township  
Gratz Borough

Halifax Township  
Jackson Township  
Jefferson Township  
Londonderry Township  
Lower Paxton Township  
Lower Swatara Township  
Lykens Borough  
Lykens Township  
Middle Paxton Township  
Mifflin Township  
Pillow Borough  
Reed Township  
Rush Township  
South Hanover Township  
Susquehanna Township  
Swatara Township  
Upper Paxton Township  
Washington Township  
Wayne Township  
West Hanover Township  
Wiconisco Township  
Williams Township

### **Delaware County**

Bethel Township  
Chadds Ford Township  
Chester Heights Borough  
Concord Township  
Edgmont Township  
Middletown Township  
Newtown Township  
Rose Valley Borough  
Thornbury Township  
Tinicum Township  
Trainer Borough  
Upper Providence Township

### **Elk County**

Benezette Township  
Fox Township  
Highland Township  
Horton Township  
Jay Township  
Johnsonburg Borough  
Jones Township  
Millstone Township  
Ridgway Borough  
Ridgway Township  
Spring Creek Township  
St. Marys City

### **Erie County**

Albion Borough  
Amity Township  
Concord Township  
Conneaut Township  
Corry City  
Cranesville Borough

## Appendix 1: Population Density

(Erie Co. cont.)

Elgin Borough  
Elk Creek Township  
Fairview Township  
Franklin Township  
Girard Borough  
Girard Township  
Greene Township  
Greenfield Township  
Harborcreek Township  
Lake City Borough  
LeBoeuf Township  
McKean Borough  
McKean Township  
Mill Village Borough  
Millcreek Township  
North East Township  
Platea Borough  
Springfield Township  
Summit Township  
Union City Borough  
Union Township  
Venango Township  
Washington Township  
Waterford Borough  
Waterford Township  
Wattsburg Borough  
Wayne Township

### **Fayette County**

Brownsville Township  
Bullskin Township  
Connellsville Township  
Dunbar Borough  
Dunbar Township  
Fairchance Borough  
Franklin Township  
Georges Township  
German Township  
Henry Clay Township  
Jefferson Township  
Lower Tyrone Township  
Luzerne Township  
Markleysburg Borough  
Menallen Township  
Newell Borough  
Nicholson Township  
North Union Township  
Ohiopyle Borough  
Perry Township  
Perryopolis Borough  
Redstone Township  
Saltlick Township  
Seven Springs Borough (Part)  
Smithfield Borough  
South Connellsville Borough  
South Union Township  
Springfield Township

Springhill Township  
Stewart Township  
Upper Tyrone Township  
Washington Township  
Wharton Township

### **Forest County**

Barnett Township  
Green Township  
Harmony Township  
Hickory Township  
Howe Township  
Jenks Township  
Kingsley Township  
Tionesta Borough  
Tionesta Township

### **Franklin County**

Antrim Township  
Fannett Township  
Greene Township  
Guilford Township  
Hamilton Township  
Letterkenny Township  
Lurgan Township  
Mercersburg Borough  
Metal Township  
Montgomery Township  
Peters Township  
Quincy Township  
Shippensburg Borough (Part)  
Southampton Township  
St. Thomas Township  
Warren Township  
Washington Township

### **Fulton County**

Ayr Township  
Belfast Township  
Bethel Township  
Brush Creek Township  
Dublin Township  
Licking Creek Township  
Taylor Township  
Thompson Township  
Todd Township  
Union Township  
Valley-Hi Borough  
Wells Township

### **Greene County**

Aleppo Township  
Center Township  
Cumberland Township  
Dunkard Township  
Franklin Township  
Freeport Township  
Gilmore Township

Gray Township  
Greene Township  
Jackson Township  
Jefferson Borough  
Jefferson Township  
Monongahela Township  
Morgan Township  
Morris Township  
Perry Township  
Rices Landing Borough  
Richhill Township  
Springhill Township  
Washington Township  
Wayne Township  
Whiteley Township

### **Huntingdon County**

Barree Township  
Birmingham Borough  
Brady Township  
Broad Top City Borough  
Carbon Township  
Cass Township  
Cassville Borough  
Clay Township  
Coalmont Borough  
Cromwell Township  
Dublin Township  
Dudley Borough  
Franklin Township  
Henderson Township  
Hopewell Township  
Huntingdon Borough  
Jackson Township  
Juniata Township  
Lincoln Township  
Logan Township  
Marklesburg Borough  
Mill Creek Borough  
Miller Township  
Morris Township  
Oneida Township  
Penn Township  
Petersburg Borough  
Porter Township  
Rockhill Borough  
Salttillo Borough  
Shirley Township  
Shirleysburg Borough  
Smithfield Township  
Springfield Township  
Spruce Creek Township  
Tell Township  
Three Springs Borough  
Todd Township  
Union Township  
Walker Township  
Warriors Mark Township

## Appendix 1: Population Density

(Huntingdon Co. cont.)

West Township  
Wood Township

### **Indiana County**

Armstrong Township  
Banks Township  
Black Lick Township  
Brush Valley Township  
Buffington Township  
Burrell Township  
Canoe Township  
Center Township  
Cherry Tree Borough  
Cherryhill Township  
Conemaugh Township  
Creeside Borough  
East Mahoning Township  
East Wheatfield Township  
Glen Campbell Borough  
Grant Township  
Green Township  
Marion Center Borough  
Montgomery Township  
North Mahoning Township  
Pine Township  
Plumville Borough  
Rayne Township  
Shelocta Borough  
Smicksburg Borough  
South Mahoning Township  
Washington Township  
West Mahoning Township  
West Wheatfield Township  
White Township  
Young Township

### **Jefferson County**

Barnett Township  
Beaver Township  
Bell Township  
Big Run Borough  
Brockway Borough  
Brookville Borough  
Clover Township  
Corsica Borough  
Eldred Township  
Falls Creek Borough (Part)  
Gaskill Township  
Heath Township  
Henderson Township  
Knox Township  
McCalmont Township  
Oliver Township  
Perry Township  
Pine Creek Township  
Polk Township  
Porter Township

Punxsutawney Borough  
Reynoldsville Borough  
Ringgold Township  
Rose Township  
Snyder Township  
Summerville Borough  
Sykesville Borough  
Timblin Borough  
Union Township  
Warsaw Township  
Washington Township  
Winslow Township  
Worthville Borough  
Young Township

### **Juniata County**

Beale Township  
Delaware Township  
Fayette Township  
Fermanagh Township  
Greenwood Township  
Lack Township  
Milford Township  
Monroe Township  
Port Royal Borough  
Spruce Hill Township  
Susquehanna Township  
Turbett Township  
Tuscarora Township  
Walker Township

### **Lackawanna County**

Abington Township  
Archbald Borough  
Benton Township  
Blakely Borough  
Carbondale Township  
Clifton Township  
Covington Township  
Dalton Borough  
Dickson City Borough  
Dunmore Borough  
Elmhurst Township  
Fell Township  
Glenburn Township  
Greenfield Township  
Jefferson Township  
Jessup Borough  
La Plume Township  
Madison Township  
Mayfield Borough  
Moosic Borough  
Moscow Borough  
Newton Township  
North Abington Township  
Olyphant Borough  
Ransom Township  
Roaring Brook Township

Scott Township  
South Abington Township  
Spring Brook Township  
Taylor Borough  
Thornhurst Township  
Throop Borough  
Vandling Borough  
West Abington Township

### **Lancaster County**

Adamstown Borough (Part)  
Bart Township  
Brecknock Township  
Caernarvon Township  
Clay Township  
Colerain Township  
Conestoga Township  
Conoy Township  
Drumore Township  
Earl Township  
East Cocalico Township  
East Donegal Township  
East Drumore Township  
East Earl Township  
East Hempfield Township  
East Lampeter Township  
Eden Township  
Elizabeth Township  
Ephrata Township  
Fulton Township  
Leacock Township  
Little Britain Township  
Manheim Township  
Manor Township  
Martic Township  
Mount Joy Township  
Paradise Township  
Penn Township  
Pequea Township  
Providence Township  
Quarryville Borough  
Rapho Township  
Sadsbury Township  
Salisbury Township  
Strasburg Township  
Upper Leacock Township  
Warwick Township  
West Cocalico Township  
West Donegal Township  
West Earl Township  
West Hempfield Township  
West Lampeter Township

### **Lawrence County**

Bessemer Borough  
Enon Valley Borough  
Hickory Township  
Little Beaver Township

## Appendix 1: Population Density

(Lawrence Co. cont.)  
Mahoning Township  
Neshannock Township  
New Beaver Borough  
North Beaver Township  
Perry Township  
Plain Grove Township  
Pulaski Township  
S.N.P.J. Borough  
Scott Township  
Shenango Township  
Slippery Rock Township  
Taylor Township  
Union Township  
Volant Borough  
Wampum Borough  
Washington Township  
Wayne Township  
Wilmington Township

### **Lebanon County**

Bethel Township  
Cold Spring Township  
Cornwall Borough  
East Hanover Township  
Heidelberg Township  
Jackson Township  
Millcreek Township  
Mount Gretna Borough  
North Annville Township  
North Cornwall Township  
North Lebanon Township  
North Londonderry Township  
Richland Borough  
South Annville Township  
South Lebanon Township  
South Londonderry Township  
Swatara Township  
Union Township  
West Cornwall Township

### **Lehigh County**

Hanover Township  
Heidelberg Township  
Lower Macungie Township  
Lower Milford Township  
Lowhill Township  
Lynn Township  
North Whitehall Township  
Salisbury Township  
South Whitehall Township  
Upper Macungie Township  
Upper Milford Township  
Upper Saucon Township  
Washington Township  
Weisenberg Township

### **Luzerne County**

Bear Creek Township  
Bear Creek Village Borough  
Black Creek Township  
Buck Township  
Butler Township  
Conyngham Borough  
Conyngham Township  
Courtdale Borough  
Dallas Borough  
Dallas Township  
Dennison Township  
Dorrance Township  
Dupont Borough  
Duryea Borough  
Exeter Borough  
Exeter Township  
Fairmount Township  
Fairview Township  
Foster Township  
Franklin Township  
Hanover Township  
Harveys Lake Borough  
Hazle Township  
Hollenback Township  
Hughestown Borough  
Hunlock Township  
Huntington Township  
Jackson Township  
Jeddo Borough  
Jenkins Township  
Kingston Township  
Laflin Borough  
Lake Township  
Larksville Borough  
Laurel Run Borough  
Lehman Township  
Nescopeck Borough  
Nescopeck Township  
New Columbus Borough  
Newport Township  
Nuangola Borough  
Penn Lake Park Borough  
Pittston Township  
Plains Township  
Plymouth Township  
Rice Township  
Ross Township  
Salem Township  
Shickshinny Borough  
Slocum Township  
Sugar Notch Borough  
Sugarloaf Township  
Union Township  
Warrior Run Borough  
West Wyoming Borough  
White Haven Borough  
Wilkes-Barre Township

Wright Township  
Yatesville Borough

### **Lycoming County**

Anthony Township  
Armstrong Township  
Bastress Township  
Brady Township  
Brown Township  
Cascade Township  
Clinton Township  
Cogan House Township  
Cummings Township  
Eldred Township  
Fairfield Township  
Franklin Township  
Gamble Township  
Hepburn Township  
Jackson Township  
Jordan Township  
Lewis Township  
Limestone Township  
Loyalsock Township  
Lycoming Township  
McHenry Township  
McIntyre Township  
McNett Township  
Mifflin Township  
Mill Creek Township  
Montoursville Borough  
Moreland Township  
Muncy Creek Township  
Muncy Township  
Nippenose Township  
Old Lycoming Township  
Penn Township  
Piatt Township  
Picture Rocks Borough  
Pine Township  
Plunketts Creek Township  
Porter Township  
Salladasburg Borough  
Shrewsbury Township  
Susquehanna Township  
Upper Fairfield Township  
Washington Township  
Watson Township  
Wolf Township  
Woodward Township

### **McKean County**

Annin Township  
Bradford Township  
Ceres Township  
Corydon Township  
Eldred Borough  
Eldred Township  
Foster Township

## Appendix 1: Population Density

(McKean Co. cont.)  
Hamilton Township  
Hamlin Township  
Keating Township  
Lafayette Township  
Lewis Run Borough  
Liberty Township  
Mount Jewett Borough  
Norwich Township  
Otto Township  
Port Allegany Borough  
Sergeant Township  
Smethport Borough  
Wetmore Township

### **Mercer County**

Clark Borough  
Coolspring Township  
Deer Creek Township  
Delaware Township  
East Lackawannock Township  
Fairview Township  
Findley Township  
Fredonia Borough  
French Creek Township  
Greene Township  
Hempfield Township  
Hermitage City  
Jackson Center Borough  
Jackson Township  
Jamestown Borough  
Jefferson Township  
Lackawannock Township  
Lake Township  
Liberty Township  
Mercer Borough  
Mill Creek Township  
New Lebanon Borough  
New Vernon Township  
Otter Creek Township  
Perry Township  
Pine Township  
Pymatuning Township  
Salem Township  
Sandy Creek Township  
Sandy Lake Borough  
Sandy Lake Township  
Sheakleyville Borough  
Shenango Township  
South Pymatuning Township  
Springfield Township  
Stoneboro Borough  
Sugar Grove Township  
West Middlesex Borough  
West Salem Township  
Wheatland Borough  
Wilmington Township

Wolf Creek Township  
Worth Township

### **Mifflin County**

Armagh Township  
Bratton Township  
Brown Township  
Burnham Borough  
Decatur Township  
Derry Township  
Granville Township  
Kistler Borough  
Menno Township  
Newton Hamilton Borough  
Oliver Township  
Union Township  
Wayne Township

### **Monroe County**

Barrett Township  
Chestnuthill Township  
Coolbaugh Township  
Delaware Water Gap Borough  
Eldred Township  
Hamilton Township  
Jackson Township  
Middle Smithfield Township  
Mount Pocono Borough  
Paradise Township  
Pocono Township  
Polk Township  
Price Township  
Ross Township  
Smithfield Township  
Stroud Township  
Tobyhanna Township  
Tunkhannock Township

### **Montgomery County**

Bryn Athyn Borough  
Douglass Township  
Franconia Township  
Green Lane Borough  
Hatfield Township  
Horsham Township  
Limerick Township  
Lower Frederick Township  
Lower Gwynedd Township  
Lower Moreland Township  
Lower Pottsgrove Township  
Lower Providence Township  
Lower Salford Township  
Marlborough Township  
New Hanover Township  
Perkiomen Township  
Plymouth Township  
Salford Township  
Skipack Township

Towamencin Township  
Trappe Borough  
Upper Dublin Township  
Upper Frederick Township  
Upper Gwynedd Township  
Upper Hanover Township  
Upper Merion Township  
Upper Pottsgrove Township  
Upper Providence Township  
Upper Salford Township  
West Conshohocken Borough  
West Pottsgrove Township  
Whitemarsh Township  
Whitpain Township  
Worcester Township

### **Montour County**

Anthony Township  
Cooper Township  
Derry Township  
Liberty Township  
Limestone Township  
Mahoning Township  
Mayberry Township  
Valley Township  
West Hemlock Township

### **Northampton County**

Allen Township  
Bethlehem Township  
Bushkill Township  
Chapman Borough  
East Allen Township  
East Bangor Borough  
Forks Township  
Glendon Borough  
Hanover Township  
Lehigh Township  
Lower Mount Bethel Township  
Lower Nazareth Township  
Lower Saucon Township  
Moore Township  
Palmer Township  
Plainfield Township  
Portland Borough  
Stockertown Borough  
Upper Mount Bethel Township  
Upper Nazareth Township  
Washington Township  
Williams Township

### **Northumberland County**

Coal Township  
Delaware Township  
East Cameron Township  
East Chillisquaque Township  
(Northumberland Co. cont.)  
Herndon Borough

## Appendix 1: Population Density

(Northumberland Co. cont.)

Jackson Township  
Jordan Township  
Lewis Township  
Little Mahanoy Township  
Lower Augusta Township  
Lower Mahanoy Township  
Mount Carmel Township  
Point Township  
Ralpho Township  
Riverside Borough  
Rockefeller Township  
Rush Township  
Shamokin Township  
Snydertown Borough  
Turbot Township  
Turbotville Borough  
Upper Augusta Township  
Upper Mahanoy Township  
Washington Township  
West Cameron Township  
West Chillisquaque Township  
Zerbe Township

### **Perry County**

Blain Borough  
Buffalo Township  
Carroll Township  
Centre Township  
Greenwood Township  
Howe Township  
Jackson Township  
Juniata Township  
Liverpool Borough  
Liverpool Township  
Marysville Borough  
Miller Township  
Millerstown Borough  
Northeast Madison Township  
Oliver Township  
Penn Township  
Rye Township  
Saville Township  
Southwest Madison Township  
Spring Township  
Toboyne Township  
Tuscarora Township  
Tyrone Township  
Watts Township  
Wheatfield Township

### **Philadelphia County**

*No Qualifying Municipalities*

### **Pike County**

Blooming Grove Township  
Delaware Township  
Dingman Township

Greene Township  
Lackawaxen Township  
Lehman Township  
Milford Township  
Palmyra Township  
Porter Township  
Shohola Township  
Westfall Township

### **Potter County**

Abbott Township  
Allegany Township  
Austin Borough  
Bingham Township  
Clara Township  
Coudersport Borough  
Eulalia Township  
Galeton Borough  
Genesee Township  
Harrison Township  
Hebron Township  
Hector Township  
Homer Township  
Keating Township  
Oswayo Borough  
Oswayo Township  
Pike Township  
Pleasant Valley Township  
Portage Township  
Roulette Township  
Sharon Township  
Shinglehouse Borough  
Stewardson Township  
Summit Township  
Sweden Township  
Sylvania Township  
Ulysses Borough  
Ulysses Township  
West Branch Township  
Wharton Township

### **Schuylkill County**

Ashland Borough (Part)  
Auburn Borough  
Barry Township  
Blythe Township  
Branch Township  
Butler Township  
Cass Township  
Coaldale Borough  
Cressona Borough  
Deer Lake Borough  
Delano Township  
East Brunswick Township  
East Norwegian Township  
East Union Township  
Eldred Township  
Foster Township

Frailey Township  
Gilberton Borough  
Gordon Borough  
Hegins Township  
Hubley Township  
Kline Township  
Landingville Borough  
Mahanoy Township  
Mechanicsville Borough  
Middleport Borough  
Mount Carbon Borough  
New Castle Township  
New Philadelphia Borough  
New Ringgold Borough  
North Manheim Township  
North Union Township  
Norwegian Township  
Orwigsburg Borough  
Palo Alto Borough  
Pine Grove Township  
Port Clinton Borough  
Porter Township  
Reilly Township  
Ringtown Borough  
Rush Township  
Ryan Township  
Schuylkill Township  
South Manheim Township  
Tamaqua Borough  
Tremont Township  
Union Township  
Upper Mahantongo Township  
Walker Township  
Washington Township  
Wayne Township  
West Brunswick Township  
West Mahanoy Township  
West Penn Township

### **Snyder County**

Adams Township  
Beaver Township  
Beavertown Borough  
Center Township  
Chapman Township  
Franklin Township  
Freeburg Borough  
Jackson Township  
McClure Borough  
Middleburg Borough  
Middlecreek Township  
Monroe Township  
Penn Township  
Perry Township  
Shamokin Dam Borough  
Spring Township  
Union Township

## Appendix 1: Population Density

(Snyder Co. cont.)  
Washington Township  
West Beaver Township  
West Perry Township

### **Somerset County**

Addison Borough  
Addison Township  
Allegheny Township  
Benson Borough  
Black Township  
Boswell Borough  
Brothersvalley Township  
Callimont Borough  
Casselman Borough  
Conemaugh Township  
Confluence Borough  
Elk Lick Township  
Fairhope Township  
Garrett Borough  
Greenville Township  
Hooversville Borough  
Indian Lake Borough  
Jefferson Township  
Jenner Township  
Jennerstown Borough  
Larimer Township  
Lincoln Township  
Lower Turkeyfoot Township  
Middlecreek Township  
Milford Township  
New Baltimore Borough  
New Centerville Borough  
Northampton Township  
Ogle Township  
Paint Township  
Quemahoning Township  
Salisbury Borough  
Seven Springs Borough (Part)  
Shade Township  
Shanksville Borough  
Somerset Township  
Southampton Township  
Stonycreek Township  
Stoystown Borough  
Summit Township  
Upper Turkeyfoot Township  
Ursina Borough  
Wellersburg Borough

### **Sullivan County**

Cherry Township  
Colley Township  
Davidson Township  
Dushore Borough  
Eagles Mere Borough  
Elkland Township  
Forks Township

Forksville Borough  
Fox Township  
Hillsgrove Township  
Laporte Borough  
Laporte Township  
Shrewsbury Township

### **Susquehanna County**

Apolacon Township  
Ararat Township  
Auburn Township  
Bridgewater Township  
Brooklyn Township  
Choconut Township  
Clifford Township  
Dimock Township  
Forest Lake Township  
Franklin Township  
Friendsville Borough  
Gibson Township  
Great Bend Township  
Harford Township  
Harmony Township  
Herrick Township  
Hop Bottom Borough  
Jackson Township  
Jessup Township  
Lanesboro Borough  
Lathrop Township  
Lenox Township  
Liberty Township  
Little Meadows Borough  
Middletown Township  
Montrose Borough  
New Milford Borough  
New Milford Township  
Oakland Borough  
Oakland Township  
Rush Township  
Silver Lake Township  
Springville Township  
Thompson Borough  
Thompson Township  
Union Dale Borough

### **Tioga County**

Bloss Township  
Blossburg Borough  
Brookfield Township  
Charleston Township  
Chatham Township  
Clymer Township  
Covington Township  
Deerfield Township  
Delmar Township  
Duncan Township  
Elk Township  
Elkland Borough

Farmington Township  
Gaines Township  
Hamilton Township  
Jackson Township  
Knoxville Borough  
Lawrence Township  
Lawrenceville Borough  
Liberty Borough  
Liberty Township  
Mansfield Borough  
Middlebury Township  
Morris Township  
Nelson Township  
Osceola Township  
Putnam Township  
Richmond Township  
Roseville Borough  
Rutland Township  
Shippen Township  
Sullivan Township  
Tioga Borough  
Tioga Township  
Union Township  
Ward Township  
Wellsboro Borough  
Westfield Borough  
Westfield Township

### **Union County**

Buffalo Township  
East Buffalo Township  
Gregg Township  
Hartleton Borough  
Hartley Township  
Kelly Township  
Lewis Township  
Limestone Township  
Mifflinburg Borough  
Union Township  
West Buffalo Township  
White Deer Township

### **Venango County**

Allegheny Township  
Barkeyville Borough  
Canal Township  
Cherrytree Township  
Clinton Township  
Clintonville Borough  
Cooperstown Borough  
Cornplanter Township  
Cranberry Township  
Emlenton Borough (Part)  
Franklin City  
Frenchcreek Township  
Irwin Township  
Jackson Township  
Mineral Township

## Appendix 1: Population Density

(Venango Co. cont.)  
Oakland Township  
Oil Creek Township  
(Venango Co. cont.)  
Pinegrove Township  
Pleasantville Borough  
Plum Township  
Polk Borough  
President Township  
Richland Township  
Rockland Township  
Rouseville Borough  
Sandy Creek Township  
Scrubgrass Township  
Sugar Creek Borough  
Utica Borough  
Victory Township

### Warren County

Bear Lake Borough  
Brokenstraw Township  
Cherry Grove Township  
Clarendon Borough  
Columbus Township  
Conewango Township  
Deerfield Township  
Eldred Township  
Elk Township  
Farmington Township  
Freehold Township  
Glade Township  
Limestone Township  
Mead Township  
Pine Grove Township  
Pittsfield Township  
Pleasant Township  
Sheffield Township  
Southwest Township  
Spring Creek Township  
Sugar Grove Borough  
Sugar Grove Township  
Tidioute Borough  
Triumph Township  
Watson Township  
Youngsville Borough

### Washington County

Allenport Borough  
Amwell Township  
Beallsville Borough  
Bentleyville Borough  
Blaine Township  
Buffalo Township  
California Borough  
Canton Township  
Carroll Township  
Cecil Township  
Centerville Borough

Chartiers Township  
Coal Center Borough  
Cokeburg Borough  
Cross Creek Township  
Deemston Borough  
Donegal Township  
Dunlevy Borough  
East Bethlehem Township  
East Finley Township  
Elco Borough  
Ellsworth Borough  
Fallowfield Township  
Green Hills Borough  
Hanover Township  
Hopewell Township  
Independence Township  
Jefferson Township  
Long Branch Borough  
Marianna Borough  
Morris Township  
Mount Pleasant Township  
North Bethlehem Township  
North Franklin Township  
North Strabane Township  
Nottingham Township  
Peters Township  
Robinson Township  
Smith Township  
Somerset Township  
South Franklin Township  
South Strabane Township  
Speers Borough  
Stockdale Borough  
Twilight Borough  
Union Township  
West Bethlehem Township  
West Brownsville Borough  
West Finley Township  
West Middletown Borough  
West Pike Run Township

### Wayne County

Berlin Township  
Bethany Borough  
Buckingham Township  
Canaan Township  
Cherry Ridge Township  
Clinton Township  
Damascus Township  
Dreher Township  
Dyberry Township  
Honesdale Borough  
Lake Township  
Lebanon Township  
Lehigh Township  
Manchester Township  
Mount Pleasant Township  
Oregon Township  
Palmyra Township

Paupack Township  
Preston Township  
Prompton Borough  
Salem Township  
Scott Township  
South Canaan Township  
Starrucca Borough  
Sterling Township  
Texas Township  
Waymart Borough

### Westmoreland County

Arona Borough  
Avonmore Borough  
Bell Township  
Cook Township  
Derry Township  
Donegal Borough  
Donegal Township  
East Huntingdon Township  
Fairfield Township  
Hempfield Township  
Hunker Borough  
Laurel Mountain Borough  
Ligonier Township  
Lower Burrell City  
Loyalhanna Township  
Madison Borough  
Manor Borough  
Mount Pleasant Township  
Murrysville Municipality  
New Alexandria Borough  
New Stanton Borough  
North Huntingdon Township  
Oklahoma Borough  
Penn Township  
Rostraver Township  
Salem Township  
Sewickley Township  
South Huntingdon Township  
St. Clair Township  
Unity Township  
Upper Burrell Township  
Washington Township  
West Leechburg Borough  
Youngwood Borough

### Wyoming County

Braintrim Township  
Clinton Township  
Eaton Township  
Exeter Township  
Factoryville Borough  
Falls Township  
Forkston Township  
Laceyville Borough  
Lemon Township  
Mehopany Township

## Appendix 1: Population Density

(Wyoming Co. cont.)  
Meshoppen Borough  
Meshoppen Township  
Monroe Township  
(Wyoming Co. cont.)  
Nicholson Borough  
Nicholson Township  
North Branch Township  
Northmoreland Township  
Noxen Township  
Overfield Township  
Tunkhannock Township  
Washington Township  
Windham Township

### **York County**

Carroll Township  
Chanceford Township  
Codorus Township  
Conewago Township  
Cross Roads Borough  
Dover Township

East Hopewell Township  
East Manchester Township  
Fairview Township  
Fawn Grove Borough  
Fawn Township  
Felton Borough  
Franklin Township  
Franklintown Borough  
Heidelberg Township  
Hellam Township  
Hopewell Township  
Jackson Township  
Jacobus Borough  
Jefferson Borough  
Loganville Borough  
Lower Chanceford Township  
Lower Windsor Township  
Manchester Township  
Manheim Township  
Monaghan Township  
New Salem Borough  
Newberry Township

North Codorus Township  
North Hopewell Township  
Paradise Township  
Peach Bottom Township  
Penn Township  
Railroad Borough  
Seven Valleys Borough  
Shrewsbury Township  
Spring Garden Township  
Springettsbury Township  
Springfield Township  
Warrington Township  
Washington Township  
Wellsville Borough  
West Manchester Township  
West Manheim Township  
Windsor Township  
Winterstown Borough  
York Township  
Yorkana Borough