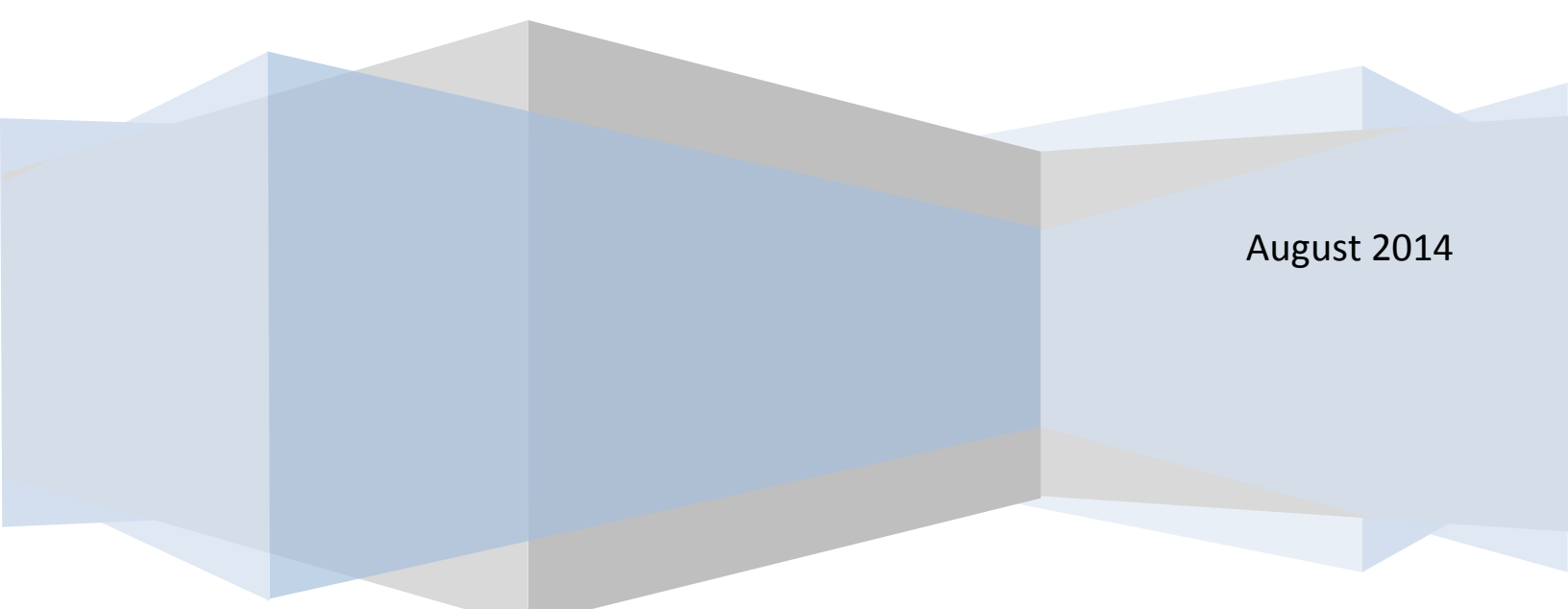


United States Environmental Protection Agency
Toxics Release Inventory Program

Toxics Release Inventory (TRI) Community-Scale Mapping Report

South Philadelphia Community Engagement Pilot
Project



August 2014

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PREFACE

This document provides users and/or readers background information on the Toxics Release Inventory (TRI) Community Engagement Pilot Project: South Philadelphia Mapping Project. This document is intended for a technically inclined audience. Information provided focuses on data sources and methods used to create the TRI Mapping Project.

Users and/or readers will find information on: the TRI community engagement initiative; the purpose and scope of the TRI South Philadelphia Mapping Project; data used to create the TRI Mapping Project; a 'how-to' section that outlines the project methodology, and EPA resources available for public use.

TOXICS RELEASE INVENTORY (TRI) COMMUNITY ENGAGEMENT PILOT PROJECT

Toxics Release Inventory (TRI) Community Engagement Initiative

In spring 2012, the United States Environmental Protection Agency (EPA) launched the Toxics Release Inventory (TRI) Community Engagement Pilot Projects Initiative to raise awareness of TRI at the community level and to increase access, understanding and use of TRI data. Four pilot projects were launched to test approaches for engaging with communities about the benefits of using TRI data to address local environmental concerns. These pilot projects occurred in Tonawanda, New York; South Philadelphia, Pennsylvania; North Birmingham, Alabama; and Jurupa Valley, California.

Through this effort, EPA:

- Introduced community grassroots groups to TRI;
- Obtained their input about how best to convey information about TRI to communities;
- Collected feedback on draft training and outreach materials; and
- Incorporated community comments into TRI community-oriented products.

Community members' feedback helped to shape various TRI outreach materials such as *It's Your Right to Know about the Toxic Chemicals in*

Your Community: Introduction to the Toxics Release Inventory, and a customized, two-page *Snapshots* highlighting environmental information specific to each pilot project community.

Making a Visible Difference in Communities across the Country

EPA must work each and every day - hand-in-hand with other federal agencies, states, tribes and local communities - to improve the health of American families and protect the environment one community at a time, all across the country. We must expand the work we do to enhance the livability and economic vitality of neighborhoods in and around brownfields sites; strengthen our relationship with America's agricultural community; support green infrastructure to manage urban waters; reduce air pollution along roadways, railways and at ports; and take into consideration the impacts of our decisions on environmental justice communities through increased analysis, better science, and enhanced community engagement to ensure the protection of basic fundamental rights.

For more information about this and other EPA Themes for Meeting the Challenge ahead, visit: <http://www2.epa.gov/aboutepa/epas-themes-meeting-challenge-ahead#communities>

Each TRI Pilot Project is designed to be replicated by other communities conducting related analyses. This effort supports EPA's theme of *Making a Visible Difference in Communities across the Country* (see insert above, on page 4). Information about all of the TRI Community Engagement Pilot Projects can be found on the [TRI Communities Webpage](#).

TRI South Philadelphia Pilot Project

EPA selected South Philadelphia as one of the pilot communities to build upon an ongoing air monitoring effort managed by the City of Philadelphia's Department of Public Health Air Management Services (AMS). EPA worked closely with AMS, the University of Pennsylvania, and a number of South Philadelphia-based community groups to engage with the South Philadelphia community and empower them to explore opportunities for addressing their high-priority environmental issues.

Through the pilot project, EPA:

- Conducted a TRI workshop to introduce the [TRI Program](#), [TRI Web-based tools](#), and related environmental information;
- Held additional face-to-face meetings to work with the community;
- Created a customized two-page TRI Community SnapShot highlighting environmental information specific to South Philadelphia; and
- Initiated a TRI South Philadelphia Mapping Project.

Toxics Release Inventory (TRI) Program

The Toxics Release Inventory (TRI) Program tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. United States facilities in specified industry sectors must report how much of each chemical is released to the environment and/or managed through recycling, energy recovery and treatment. (A "release" of a chemical means that it is emitted to the air or water, or placed in some type of land disposal.) The toxics chemical release information submitted by facilities is compiled annually in the Toxics Release Inventory. TRI helps support informed decision-making by industry, government, and non-governmental organizations and the public.

Information presented in the TRI South Philadelphia Mapping Project is part of a larger effort to increase access to, and understanding and use of TRI data for community grassroots leaders, teachers, and others, in order to help empower them to work with local industry, government, and elected officials to address local environmental issues.

To learn more about TRI, visit:
<http://www.epa.gov/tri>

TRI South Philadelphia Mapping Project

The TRI South Philadelphia Mapping Project was launched to raise awareness of the Toxics Release Inventory at the community level and to increase access, understanding and use of TRI data. The map exercise shows how TRI data can be visualized in a geospatial design and highlights the benefit of pairing TRI data with additional environmental information.

The TRI Mapping Project demonstrates innovative ways that TRI data can be used to inform communities. EPA intends the map to be a model for demonstrating how TRI data can be combined with other relevant EPA, state and local data for communities, non-government organizations, researchers, academics, and students. This report provides useful information that can be duplicated by individuals with high-level computer and/or software skills who may feel comfortable exploring the use of geospatial information systems¹ to create customized maps.

Information provided within this report focuses on data sources and methods used to create the TRI South Philadelphia Mapping Project.

Although the project focuses on South Philadelphia, users will find the map provides relevant data for the entire city of Philadelphia.

Community Engagement Workshops



Pictures of Workshops

¹ A geospatial information system or GIS is a computer system that allows users to map, model, query, and analyze large quantities of data within a single database according to their location. GIS gives you the power to: create maps, integrate information, visualize scenarios, and develop effective solutions.

Intended Audience

The TRI South Philadelphia Mapping Project was produced to share with community members, community grass roots groups, state and local environmental groups, local academics and the City of Philadelphia Air Management Services Division who participated in the South Philadelphia TRI Community Engagement Workshop as well as with other key communities interested in using environmental data and other data of interest that can be depicted in maps.

Detailed information included within this document is suited for technically inclined users and/or readers such as researchers, academics and students. Sections pertain to data sources, data management and the project methodology are intended for individuals with high-level computer and/or software skills who may feel comfortable exploring the use of geospatial information systems to create maps.

Disclaimer

To produce the TRI South Philadelphia Mapping Project, data were taken from EPA databases and other publicly available data sources. EPA provides no guarantee that information used in each map layer is current, authoritative, or complete. Information in the map is provided 'as is' and users assume the entire responsibility (e.g., data quality, timeliness, and performance of data used) for further researching these data. The map is a pilot product and is not to be used as an authoritative source for legal purposes.

MAP INTRODUCTION

Purpose

EPA intends for the TRI South Philadelphia Mapping Project to be a model for demonstrating how TRI data can be combined with other relevant EPA, state and local data for public use and awareness. The map demonstrates how community members can take publicly available data to create a geospatial image that is useful for community needs.

The interactive map gives users the ability to see locations of EPA-regulated facilities and community points of interest where youth and aging adults may frequently congregate in South Philadelphia. Users will also find data provided within the map are relevant to all of Philadelphia.

For the purpose of the pilot project, the map focused on four zip codes in South Philadelphia: 19145, 19146, 19147, and 19148. Points identified on the map include:

- TRI and other EPA-regulated facilities, and
- Locations where youth and aging adults may frequently congregate.

EPA-regulated facility points provide locational data such as facility names and addresses. These data can be accessed by any member of the public using EPA's publicly available data sources. As an additional resource, the map also provides links to associated environmental reports found within [Envirofacts](https://www.epa.gov/enviro)², an EPA information warehouse and Web application that provides a one-stop, single point of



² Envirofacts allows users to search multiple EPA environmental databases for facility information, including toxic chemical releases, water discharge permit compliance, hazardous waste handling processes, Superfund status, and air compliance and permit data.

access to select EPA environmental data about activities that may affect air, water, and land anywhere in the United States.

Locations where youth and aging adults may frequently congregate were identified through community input. Data used for these points were taken from publically available data sources that any member of the public can access. Information on these data sources can be found in the *Data Sources* and *Metadata* sections of this report.

EPA took extensive steps to identify reliable data to create a useful, transferable project for community use. Users and/or readers will find information on: the purpose and scope of the TRI South Philadelphia Mapping Project; data used to create the TRI Mapping Project; a 'how-to' section that outlines the project methodology, and additional EPA resources available for public use within this document.

The TRI South Philadelphia Map, found at www.epa.gov/tri/communities, provides users map layers (see below) to visualize EPA-regulated facilities and South Philadelphia locations where youth and aging adults may frequently congregate.

Map layers provided within the TRI South Philadelphia Map include:

- EPA-regulated facilities:
 - 2012 Toxics Release Inventory Facilities
 - Toxics Release Inventory Facilities (Historical)
 - Air Permitted Facilities
 - Water Discharge Permitted Facilities
 - Identified Brownfield Activities
 - Hazardous Waste Management Sites
 - Superfund Sites

- Locations where youth and aging adults may frequently congregate:
 - Older Adult Centers
 - Nursing Homes
 - Schools
 - Playgrounds
 - Parks
 - Hospitals
 - Health Centers
 - PAL (Police Athletic League) Centers for Youth

- Recreation Centers
- Additional map layer:
 - USA Zip Codes

Scope

The TRI South Philadelphia Mapping Project demonstrates how TRI data can be used to disseminate information in a visual, geographic design. In order to create a successful product, the mapping project adhered to the following guidelines:

- The public has access to the same data used to create the map and comparable software;
- The map can be printed out to address digital divide³ issues;
- The map can be duplicated;
- Data comes from respected data sources; and
- The map improves the understanding of EPA data.

Features of the map were limited to only cover information on EPA-regulated facilities and locations where youth and aging adults may frequently congregate. These data were taken from a variety of readily available data sources, and users should be aware of potential limitations in the presented data. Metadata⁴ information is contained in the *Metadata* section of this document.

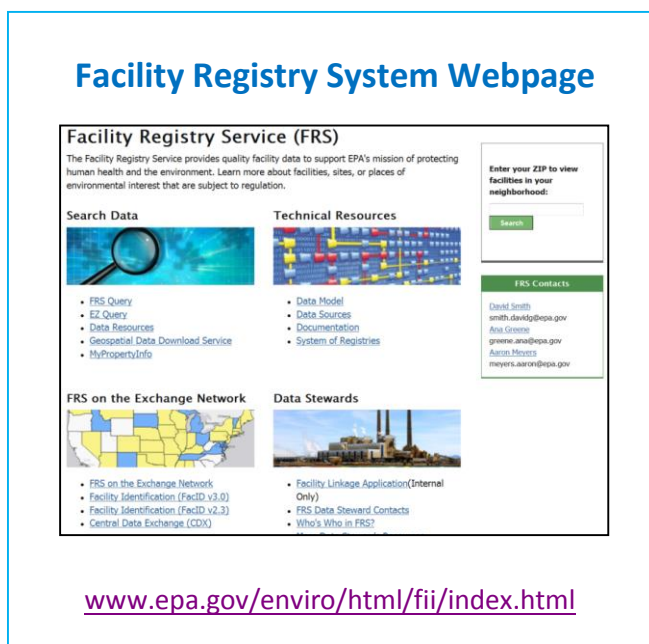
³ Digital Divide Definition: Inequalities between groups of people with the use of computers, the internet, and other information technology systems and those who do not have access.

⁴ Metadata is data that describes and defines other data.

Data Sources

Data used for the TRI South Philadelphia Mapping Project were derived from four sources: 1) the United States Environmental Protection Agency (EPA); 2) the City of Philadelphia; 3) the Pennsylvania Spatial Data Access (PASDA)⁵; and 4) Esri⁶.

To provide locational information (e.g., facility name, address) for EPA-regulated facilities, EPA used the [Facility Registry System \(FRS\)](#), a centrally-managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS locational information comes from EPA federal program systems, regional offices, states, and sophisticated geocoding⁷ routines. FRS creates high-quality facility identification records through rigorous verification and management procedures that incorporate information from national program systems, state master facility records, and data management personnel.



To gather geographic locations where youth and aging adults may frequently congregate, EPA used information from the City of Philadelphia and the Pennsylvania Spatial Data Access. Users will find data provided within the map is relevant to all of Philadelphia.

The City of Philadelphia's mapping application (i.e., Phila.gov/Map) allows users to view various maps created with data provided from city departments as well as upload maps and embed Web services into geospatial information systems⁸.

⁵ The [Pennsylvania Spatial Data Access](#) (PASDA) is the official public access geospatial information clearinghouse for the Commonwealth of Pennsylvania.

⁶ Esri is a licensed geospatial information software (GIS) and service provider for EPA. Esri services are also available for public use.

⁷ Geocoding provides a latitude/longitude coordinate pair based on a provided street address.

⁸ See footnote #1

City of Philadelphia map services⁹ were used to create the following map layers in the TRI Mapping Project:

- Parks
- Recreation Centers
- PAL (Police Athletic League) Youth Centers
- Hospitals
- Health Centers
- Older Adult Centers

The [Pennsylvania Spatial Data Access](#) (PASDA) is the official public access geospatial information clearinghouse for the Commonwealth of Pennsylvania. Developed through a cooperative project with the Pennsylvania State University and the Governor's Office of Administration, PASDA allows users to view, download, and create maps through an online mapping interface. PASDA provides visualization and data download capabilities for a wide range of topics such as health, recreation, wildlife, and transportation. PASDA services were downloaded to create the following map layers in the TRI Mapping Project:

- Nursing Homes
- Schools
- Playgrounds

[Esri](#)¹⁰ standard public layers were used to generate zip code boundaries. Esri develops geographic information systems and public maps to enable users to design and manage geospatial data. Since the project focused on four particular zip codes, adding a zip code boundary map layer allows users to populate zip code boundaries with map points.

⁹ A map service layer is a web-based map that displays map content from a server that can be uploaded as a map layer into geospatial information systems.

¹⁰ See footnote #6

Data Quality and Limitations

EPA took extensive steps to identify reliable data to create a useful, transferable project for community members. Trustworthy data sources were used to produce the TRI South Philadelphia Mapping Project; however, EPA was not responsible for managing the entire data life cycle of each dataset nor can EPA account for potential data gaps and limitations of data used.

A 'how-to' outline in the *Map Development/Methodology* section documents how the mapping project was conducted to provide a model for how users could replicate a mapping project based on their own interests. A major component of the 'how-to' outline is the *Data quality and limitations* section that provides data principles to use when searching for reliable data to create maps.

The *Metadata* section of this report provides detailed descriptions of each map layer. EPA assessed map layers during the initial entry of data and throughout the development of the project. Descriptions give background and publication information from original authors as well as key features used for the project. Data may potentially offer limited, incomplete information; however, metadata helps users understand the link between data and the purpose and scope of the project. Known limitations of these data are noted in each section. Users can further explore data by clicking on metadata links provided in the *Contents* section.

Map functions were identified to meet the expressed needs of the community, but users should be aware of these limitations:

- Facility symbols overlap each other when more than one map layer is populated, resulting in one symbol being displayed as the primary symbol on top of another symbol. To avoid this, only populate one facility map layer at a time.
- Features of the map include a *Facility URL* that links users to an [Envirofacts](#) report that provides additional environmental information. Only links to reports associated with the map layer populated will be displayed. Users can perform a multi-system search in Envirofacts to find additional environmental information associated with a facility point.
- Points on the map that represent facility locations may be slightly displaced (e.g., a facility point may indicate a facility is located on water rather than on land). Map users can report any suspected errors by clicking on the *report an error* button found within Envirofacts through the *Facility URL* link located in the map layer pop-up box. Users can also provide additional feedback via the *contact us* link.
- Facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data

queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

- *The 2012 TRI Facilities Layer* only displays facilities that reported to the TRI Program for calendar year 2012. One TRI facility in South Philadelphia was identified as a late reporter; that information is currently being updated in the system.
- Base maps have certain neighborhoods or districts labeled; this information is part of Esri base maps and may be out of date or incorrect.
- Locational data for map layers are displayed as points rather than polygons (boundaries). Points do not capture fixed areas associated with these data and may not provide complete spatial distribution and estimations of the parameters associated with the points of interest portrayed in the map. To find boundary data, users need to conduct further research.

Map Development/Methodology

This section serves as a ‘how-to’ outline for users interested in creating a similar mapping project. EPA created the TRI South Philadelphia Mapping Project by following these steps:

I. Define project purpose, scope, timeline, and resources

To ensure efforts are successful, develop project plans to clearly set expectations regarding the project scope, timeline and resources. Clearly define the question the map is intended to answer. Revisit the project purpose and scope throughout the creation of a map.

II. Identify geographic information system (GIS)¹¹ software

To create interactive maps and applications for distribution, appropriate GIS software should be used. Take time to assess and determine appropriate applications and tools that better serve the scope and purpose of your project.

For the TRI South Philadelphia Mapping Project, Arc GIS Online (licensed through Esri) was used through EPA’s GeoPlatform (see insert below, on page 14). The GeoPlatform provides EPA a framework for geospatial tools, data and services. EPA’s GeoPlatform is not accessible to the public; however, all data is made available through EPA services such as the Environmental Dataset Gateway¹².

¹¹ See footnote #1

¹² See page 32 to learn about the Environmental Dataset Gateway and additional EPA geospatial tools.

Esri provides a free Arc GIS public account for users to create, store, and manage maps, application and data. Access to Esri data and other authoritative data sources are made available through creating a public account. The built-in map viewer, made accessible through the public account, can be used to make maps and upload data. Geospatial information systems are available from other sources as well, including sources available for public use in the public domain. To find free GIS software, conduct internet searches with terms such as: “free GIS software” and “free GIS mapping online.”

EPA’s GeoPlatform

In 1994, Executive Order 12898 (EO 12898) mandated that each federal agency make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its program, policies and activities on minority, low-income, tribal, and indigenous populations.

In response to EO 12898, EPA developed a suite of tools, data, and services known as EPA’s GeoPlatform to coordinate mapping activities, applications, and data across EPA. EPA’s GeoPlatform provides access to a wide range of EPA and stakeholder data pertaining to environmental issues, public health, demographic data, and administrative information.

EPA’s GeoPlatform is becoming a useful tool for sharing geospatial information with communities and other stakeholders.

III. Introduction to software and GIS concepts

Build in project time to explore and discover software and tool capabilities. To become familiar with software and GIS concepts, take advantage of free tutorials and training materials often offered by software providers. Publications also offer a great resources to understanding GIS methods, concepts and tools. If available, sign up for classes and search for a mentor or technical expert that can assist you in answering questions or provide an introduction to software and GIS concepts.

Think about building strategic partnerships with local universities and organizations. In some cases, GIS tutorials and training are offered for free through academic institutions.

IV. Collection of data

Geospatial information systems provide a framework to collect, organize and analyze spatial data. Individual datasets or map layers are used to create geographic features in a map.

Data used for mapping should be authoritative, relevant, timely, and accessible. To collect data, narrow your search to relevant, pertinent data. Below is a list of resources to explore:

- Use existing GIS databases through GIS software [Note: Pay attention to authors]
- Find government databases for local, state and federal information
- Explore non-government databases
- Utilize academic research and databases
- Explore international databases
- Use your own data

V. Data quality and limitations

Data quality is dependent on the initial entry of data and the development of those data throughout the process of a project in order for decision makers to have confidence in that data. When collecting or creating data for a mapping project, it is important to be mindful of the following data principles:

- **Authoritativeness:** Data should come from a reliable, trustworthy, dependable resource.
- **Validity:** There should be a clear match between the data and the intended use of that data.
- **Accuracy:** Data should be truthful and complete. Be mindful of limitations and substantial missing data.
- **Timeliness:** Use the most recent data provided or match the time period that best matches the intended scope of the project.
- **Usefulness:** Data should be presented in a clear, complete manner.
- **Accessibility:** Access to the data should be easy and user-friendly. Ensure that data can be integrated with other information.

External sources create map layers for a particular purpose, and users should take time to read the provided metadata. This is an essential part of creating a reliable map; metadata provides users information on the purpose, content, and citation.

Users should compare and contrast data to other similar datasets to determine the best source available for a project. Compare data to judge the quality of data. Reliable datasets typically provide a true measurement of those data. To address potential issues, users should be familiar with metadata and understand that datasets have a limited scope of information. Missing data, incorrect data, and late data are byproducts of data management. Data may have limitations and/or be incomplete; however, it is important that users can understand the link between data, the intended use of those data, and

appropriate conclusions made from those data to ensure quality information is provided to users.

VI. Create map layers

Data can be gathered and uploaded into geospatial information systems through different formats. To create the TRI South Philadelphia Map, data were added by:

- Adding map service layers¹³ from EPA's database (i.e., Envirofacts),
- Adding map service layers from the Web (i.e., Phila.gov/Map),
- Adding map layers from data files (i.e., PASDA), and
- Adding a map service layer from Esri's database (i.e., Arc GIS Online).

Map service layers typically allow live feeds of an existing map layer to be integrated into other geospatial information systems. Users can copy a Web map link and upload it into the software. Using map services allows layers to automatically update and refresh when services are changed by the original host. This project used Web services for map layers taken from EPA, the City of Philadelphia, and Esri.

Users can also download geographic data (geodata) files from sources into a map. PASDA data was downloaded into GIS software to create map layers for this project. In many cases, users can download a geodata file onto a computer without having the software and re-upload that geodata file into the Web-based software.

Additionally, users can use their own data to create map layers, although that method was not explored in this project.

VII. Customizing map layers

Users have the ability to customize existing map layers. Customizing map layers allows users to effectively cultivate information to better serve the purpose of a mapping project and effectively provide relevant information to users. Customizing map layers can be complex; although for this project, the changes to existing map layers (described below) were straightforward.

To allow for a refined display of symbols in the mapping project, map symbols and colors were changed to improve the visualization of the map. To increase the understanding of

¹³ See footnote #9

data, labels were simplified to produce a clear message. For example, facility layers were updated to ensure users understand what information is being displayed. Colors of symbols were changed to provide a color contrast, and certain symbols were used to provide uniformed looks and grouping (e.g., facilities are displayed as squares).

Key attribute fields¹⁴ can be customized within each map layer to display targeted information; however, it is important to still provide users background information on those data and access to original map content. For this project, attribute fields were turned on or off to display locational information relevant to the project scope such as names and addresses. However, users can still find all original attribute fields provided by each map layer through clicking on URL links provided in the *Metadata* section. The *Metadata* section of this report provides users a description of data sources, map layers and key attribute fields used for the TRI Mapping Project.

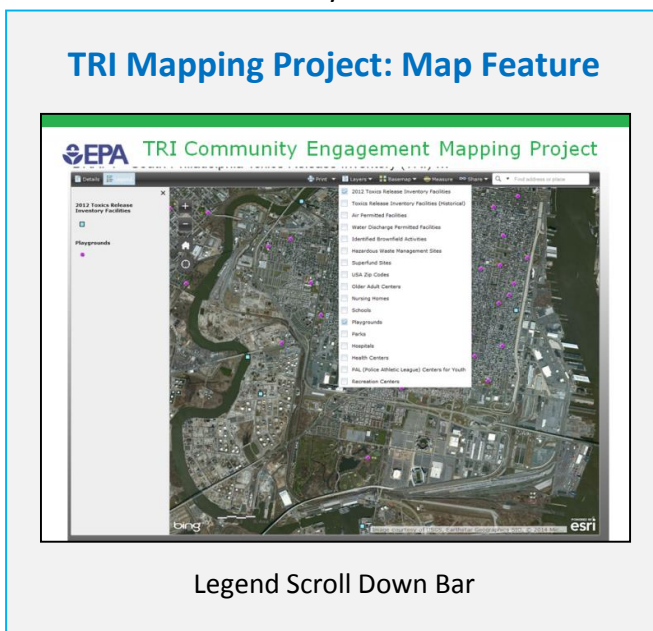
VIII. Gaining feedback

To ensure data are presented completely and clearly for ease of understanding, users should gather feedback from technical experts, peers, and potential users. For this project, EPA consulted technical experts throughout the process; sought advice from data stewards to improve and properly display data, and relied on regional contacts to convey input from the South Philadelphia community.

The creation of this supplemental report was a result of community feedback. This document provides an avenue for users to find and use exact data sources used for the mapping project.

IX. Map features

Map features should address users' needs. For the TRI Mapping Project, the South Philadelphia community established clear guidelines for EPA. The print function became important to users so they can share the map with others that may have limited



¹⁴ Map attributes describe information provided within a map layer.

computer access. Users can print the map as it is viewed as well as share the map through email or social media.

Additional map features include:

- A *details* tab containing project background information;
- A *legend* scroll down bar allowing users to turn on and off map layers with a *legend* tab displaying corresponding symbols and labels of populated map layers;
- A *basemap* scroll down bar where users can change the imagery of the map;
- A *measure* tool to determine the distance from one point to another; and
- A *search* bar to find a specific address.



X. Map deployment

EPA conducted extensive outreach and communication efforts to increase the use and understanding of the TRI Program and the TRI Mapping Project. EPA created a beta version of the map to test map functions and features, and to allow time to make enhancements and address initial user comments. At the end of this process, EPA posted a final version of the map on the TRI Communities Webpage. Following the map launch, EPA conducted broad and targeted outreach to promote the use and understanding of TRI data.

METADATA

This section provides users background information on sources and data used to create the TRI South Philadelphia Mapping Project. Each subsection provides users an introduction to the source and specific data development. Descriptions of sources include known limitations, authors, webpage links, and the time period of those data. In addition, a breakdown of each map layer is included to provide users a brief description of data used as well as a description of key attribute fields used in pop-up boxes associated within each map layer.

All information included within the TRI South Philadelphia Map is existing publicly available data taken from four sources: 1) [EPA](#)¹⁵; 2) the [City of Philadelphia](#); 3) the [Pennsylvania Spatial Data Access](#), and 4) [Esri](#).

EPA Data

EPA collects information about facilities or sites subject to environmental regulation. Facility information was obtained from the Facility Registry System (FRS), a centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. FRS data are obtained from EPA federal program systems, EPA regional offices, states, and sophisticated geocoding¹⁶ routines. FRS creates high-quality, accurate, and authoritative facility identification records through rigorous verification and management procedures that incorporate information from program national systems, state master facility records, and data management personnel. For more information on FRS, please visit www.epa.gov/enviro/html/fii/index.html.

Facility layers were identified to meet the scope of the project; however, users should be aware of a few data limitations:

- Latitude and longitudes degrees provided by FRS may be slightly off resulting in the displacement of facility points.
- Facility points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

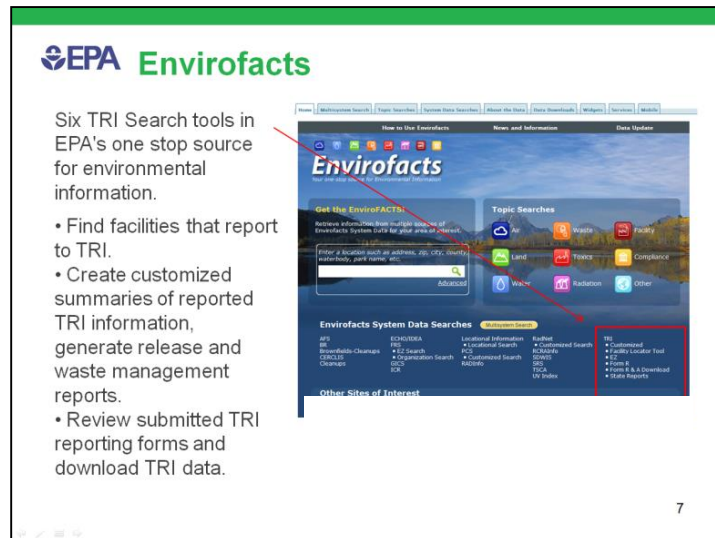
¹⁵ This EPA link takes users to Data Finder, an additional site that provides access to EPA's data sources.

¹⁶ See footnote #7

- Documented facility addresses may be represented by the place of business or a post office box rather than the actual site of a facility.
- The *2012 TRI Facilities Layer* only displays facilities that reported to the TRI Program in the reporting year of 2012. One 2012 TRI facility in South Philadelphia is missing due to late reporting; information is currently being processed in the system.

Map users can report any suspected locational data errors by clicking on the *report an error* button found within Envirofacts through the *Facility URL* link located in the map layer pop-up box. Users can also provide additional feedback via the *contact us* link.

Envirofacts is EPA’s premier one-stop environmental data access and repository resource. Envirofacts is an information warehouse as well as a set of Web search tools that provide the public and EPA staff with a single point of access to select EPA data about environmental activities that may affect air, water, and land anywhere in the United States. Envirofacts allows users to search multiple environmental database sources for environmental information, including toxic chemical releases, water discharge permit compliance, hazardous waste handling processes, Superfund status, and air compliance and permit data.



- Six TRI Search tools in EPA's one stop source for environmental information.
- Find facilities that report to TRI.
 - Create customized summaries of reported TRI information, generate release and waste management reports.
 - Review submitted TRI reporting forms and download TRI data.

For the purpose of the TRI South Philadelphia Mapping Project, FRS (which is one component data system found in Envirofacts) was used to provide facility names and locations (e.g., addresses). Features of the map include a *Facility URL* link that navigates users to Envirofacts. These links provide Envirofacts facility reports associated with each map layer; however, users should know that a particular facility may have additional associated reports within Envirofacts. To find all reports associated with a facility at once, users can perform multi-system searches in Envirofacts. The multi-system search allows users to search multiple environmental databases for facility information, including toxic chemical releases, water discharge permit compliance, hazardous waste handling processes, Superfund status, and air emission estimates.

Data in Envirofacts are retrieved from numerous EPA source databases and posted at various intervals. Map layers retrieved from EPA in this map will continue to be updated at various intervals as data is retrieved. Users can find the most recent dates when data were retrieved

and posted to Envirofacts along with the frequency of these updates at:

http://iaspub.epa.gov/enviro/data_update_v2

Additional information on map layers can be found by visiting the *Map Contents* section of this report.

Seven facility map layers were produced using EPA's facility locational information. A description of these databases¹⁷ and data development for each map layer is provided below:

1. Toxics Release Inventory Facilities (Historical)

Description: The Toxics Release Inventory tracks the management of over 650 toxic chemicals that may pose a threat to human health and the environment. U.S. facilities in specified industry sectors that manufacture, process, or otherwise use these chemicals in amounts above established threshold levels must report how each chemical is managed through recycling, energy recovery, treatment, and environmental releases. (A "release" of a chemical means that it is emitted to the air or water, or placed in some type of land disposal.) Information submitted by facilities is compiled annually as the Toxics Release Inventory or TRI, and is stored in a publicly accessible database. For more information on TRI, visit: <http://www.epa.gov/tri>. Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

¹⁷ For additional details about each data system, visit the [System Data Searches tab](#) within Envirofacts.

2. 2012 Toxics Release Inventory Facilities

To better serve the community pilot project, the South Philadelphia map includes a new layer to provide the most recent location information for facilities that reported to TRI in 2012.

Description: The Toxics Release Inventory tracks the management of over 650 toxic chemicals that may pose a threat to human health and the environment. U.S. facilities in specified industry sectors that manufacture, process, or otherwise use these chemicals in amounts above established threshold levels must report how each chemical is managed through recycling, energy recovery, treatment, and environmental releases. (A “release” of a chemical means that it is emitted to the air or water, or placed in some type of land disposal.) Information submitted by facilities is compiled annually as the Toxics Release Inventory or TRI, and is stored in a publicly accessible database. For more information on TRI, visit: <http://www.epa.gov/tri>.

Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

This layer contains the locations for TRI facilities for reporting year 2012. The latitude and longitude coordinates are provided by EPA’s Facility Registry System (FRS). Publication Date: January 2014

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

3. Air Permitted Facilities

Description: The Air Facility System (AFS) contains compliance and permit data for stationary sources regulated by EPA, state, and local air pollution agencies. States use AFS information to prepare State Implementation Plans and track the compliance status of point sources with various regulatory programs under the Clean Air Act. For more information, click on the [Air Permitted Facilities Metadata](#). AFS contains compliance and permit data for stationary sources of air pollution regulated by the EPA, state, and local air pollution agencies. Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

4. Water Discharge Permitted Facilities

Description: As authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating sources, such as municipal and industrial wastewater treatment facilities, that discharge pollutants into waters of the United States. EPA tracks water discharge permits through the Permit Compliance System (PCS) and Integrated Compliance Information System (ICIS) databases, which includes information on when a permit was issued and when it expires, how much the company is permitted to discharge, and the actual monitoring data showing what the company has discharged. For more information, click on the [Water Discharge Permitted Facilities Metadata](#). Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed

facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

5. Identified Brownfield Activities

Description: The Assessment, Cleanup and Redevelopment Exchange System (ACRES) captures EPA grantee reported data on environmental activities and accomplishments (assessment, cleanup and redevelopment), funding, job training, and details on cooperative partners and leveraging efforts - a central objective of the Brownfields Program. The information in ACRES is provided at the property and grant level. For more information, click on the [Identified Brownfield Activities Metadata](#). Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each

layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

6. Hazardous Waste Management Sites

Description: Hazardous waste is waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludges. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes. For more information, click on the [Hazardous Waste Management Sites Metadata](#). Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

7. Superfund Sites

Description: Superfund is the federal government's program to clean up the nation's uncontrolled hazardous waste sites. The National Priorities List (NPL) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. For more information, click on [Superfund Sites Metadata](#). Note: Geospatial facility location points were developed by using information collected over a period of time. The range of time varies within each map layer; this may result in closed facilities or outdated facility names. To find more information about these data or perform data queries, use the *Facility URL* link located in the map layer pop-up box to explore information provided by Envirofacts.

Key Attribute Fields:

- Name: Name of the facility
- Address: Street address of the facility
- City: City where the facility is located
- County: County where the facility is located
- State: State where the facility is located
- Zip Code: Zip code where the facility is located
- Facility URL: URL link to corresponding environmental information located in Envirofacts (Note: One facility may report to more than one EPA program; users must turn on each layer separately to get various reports. Users may search multiple databases at once using Envirofacts).

The City of Philadelphia Data

The City of Philadelphia has an application called [Phila.gov/Map](http://www.phila.gov/Map) which allows users to:

- View various maps created with data provided from city departments;
- Upload a map of their interest; and
- Embed a Web map into a geospatial information system.

For the purpose of the TRI South Philadelphia Mapping Project, [Phila.gov/Map](http://www.phila.gov/Map) was used to upload map services¹⁸ to provide information on locations relevant to the pilot project. Map layers identified were relevant to the purpose of the map to display locations where youth and aging adults may frequently congregate in South Philadelphia.



Updates to data retrieved from the City of Philadelphia will be posted at undefined intervals; however, data may continue to be updated at various intervals when the City deploys updates to map services used.

¹⁸ A map service layer is a web-based map that displays map content from a server that can be uploaded as a map layer into geospatial information systems.

Six publicly available map layers from Phila.gov/Map were used to develop the TRI Mapping Project. Map features (e.g., labels and symbols) were changed to meet the purpose of the pilot project. Map layer descriptions, taken from Phila.gov/Map, provide further details on these data and potential data quality and limitation issues. Descriptions for these map layers are provided below:

1. Parks

Description: Parks located within Philadelphia Parks and Recreation boundaries. Points are of parks owned and managed by Philadelphia Parks and Recreation. This layer was created to be used for the Philadelphia Parks and Recreation website. Features updated: 1/2/2013.

Attributes updated: 1/2/2013. Metadata updated: 1/2/2013. For more information, click on the [Parks Metadata](#).

Key Attribute Fields:

- Name: Name of the park
- Address: Address of the park

2. PAL (Police Athletic League) Centers

Description: Police Athletic League Centers operated by the Philadelphia Police Department.

Contains points for 26 PAL Centers in Philadelphia. Features updated: 2/4/2008. Attributes updated: 2/4/2008. Metadata updated: 10/25/2012. Update Frequency: As needed. For more information, click on the [PAL \(Police Athletic League\) Centers Metadata](#).

Key Attribute Fields:

- Name: Name of the PAL Center
- Address: Address of the PAL Center

3. Hospitals

Description: Map of hospitals in Philadelphia. Used primarily for cartographic purposes within the Police Department. Features updated: 30/12/2010. Attributes updated: 30/12/2010.

Metadata updated: 10/25/2012. Updated Frequency: As needed. For more information, click on the [Hospitals Metadata](#).

Key Attribute Fields:

- Name: Name of the hospital
- Address: Address of the hospital

4. Recreation Centers

Description: Recreation facilities located within Philadelphia that are owned, programmed or managed by the Philadelphia Parks and Recreation. This layer does not include older adult centers. Features updated: 12/18/12. Attributes updated: 12/18/12. Metadata updated: 12/19/12. Update frequency: As needed. For more information, click on the [Recreation Centers Metadata](#).

Key Attribute Fields:

- Name: Name of the recreation center
- Address: Address of the recreation center

5. Health Centers

Description: Philadelphia health centers as of 6/6/13; city health centers operated by the Philadelphia Department of Public Health. For more information, click on the [Health Centers Metadata](#).

Key Attribute Fields:

- Name: Name of the health center
- Address: Address of the health center

6. Older Adult Centers

Description: Map of older adult centers from the larger City Buildings dataset. For more information, click on the [Older Adult Centers Metadata](#).

Key Attribute Fields:

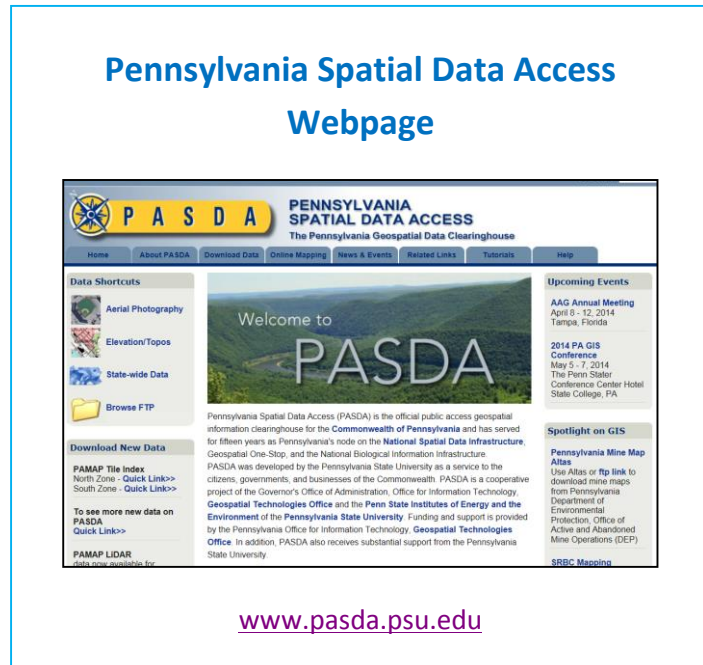
- Name: Name of the older adult center
- Address: Address of the older adult center

Pennsylvania Spatial Data Access (PASDA) Data

The [Pennsylvania Spatial Data Access](#) is the official public access geospatial information clearinghouse for the Commonwealth of Pennsylvania. PASDA allows users to view, download, and create maps through an online mapping interface. PASDA serves as a digital library by providing free, universal access to geospatial data and information by, for, and about the Commonwealth of Pennsylvania.

Services available through PASDA are intended for informational and educational purposes.

PASDA services were used to create three map layers in the TRI South Philadelphia Mapping Project. Map features (e.g., labels and symbols) were changed to meet the purpose of the pilot project. Map layer descriptions, taken from PASDA, provide further details on these data and potential data quality and limitation issues. Descriptions for these map layers are provided below:



1. Schools

Description: The point locations of public, private, parochial and charter schools in the City of Philadelphia. Data prepared by the Philadelphia City Planning Commission in cooperation with the School District of Philadelphia, Archdiocese of Philadelphia, and the Mayor's Office. The locations of schools in the City of Philadelphia with attribute information for address, grade level, type, and status indicating whether the school is open, proposed for closure or closed. The status field is intended to provide up-to-date information on school facility management conducted by all institutions types. Date updated: 3/20/12. Metadata updated: 2/20/12. For more information, click on the [Schools Metadata](#).

Key Attribute Fields:

- Name: Name of the school

- Address: Address of the school
- Grade Level: The grade level served at the school

2. Playgrounds

Description: This is a point layer representing playground equipment sites that are owned or actively maintained by the Philadelphia Parks & Recreation. Not all sites fall within Philadelphia Parks & Recreation boundaries, some belong to other city agencies such as the School District of Philadelphia. Features updated: 09/17/2012. Attributes updated: 09/17/2012. Metadata updated: 09/17/2012. For more information, click on the [Playgrounds Metadata](#).

Key Attribute Fields:

- Name: Name of the playground
- Address: Address of the playground
- Intended Age: The intended age targeted for the playground

3. Nursing Homes

Descriptions: This layer was created for use in emergency situations and for the general public. Data were provided by the Bureau of Health Statistics and Research, Pennsylvania Department of Health. Nursing homes come from the Department of Health's annual survey for 2011. For more information, click on the [Nursing Homes Metadata](#).

Key Attribute Fields:

- Name: Name of the nursing home
- Address: Address of the nursing home

Esri Data

Esri develops geographic information systems and public maps to enable users to design and manage geospatial data. One map layer was produced using Esri services; a description of the data is provided below:

1. USA Zip Codes

Description: This layer presents five-digit areas used by the U.S. Postal Service to deliver mail more effectively. The first digit of the five-digit Zip Code divides the United States into 10 large groups of states numbered from 0 in the Northeast to 9 in the far West. Within these areas, each state is divided into an average of 10 smaller geographic areas, identified by the second

and third digits. These digits, in conjunction with the first digit, represent a sectional center facility or a mail processing facility area. The fourth and fifth digits identify a post office, station, branch or local delivery area. It provides area, post office name and population for each ZIP Code area in the United States. For more information, click on the [USA Zip Codes Metadata](#).

Key Attribute Fields:

- USA zip code number

SUITE OF TRI ANALYSIS TOOLS

EPA developed several tools to increase access to and promote analysis of TRI data. These tools present TRI data and allow users to: identify toxic chemicals released by city, county, state, or zip code; map releases of a specific chemical; generate release or waste management reports, and obtain information on the hazards associated with chemicals of interest. These tools are available at: www.epa.gov/tri/tridata

My Right-to-Know (myRTK) Mobile App

[myRTK](#) allows users to geographically view TRI facilities on a map and obtain facility information on the quantities of toxic chemicals released, potential health effects of those chemicals and compliance data. This tool is designed for mobile and non-mobile devices and is available in both English and Spanish.

TRI.NET

TRI.Net allows users to build customized TRI data queries using drill-down menus or an ad-hoc query option. Users can download, map or overlay results with other data sources. This is a downloadable application: www.epa.gov/tri/tridotnet

TRI Data Tools in Envirofacts

Envirofacts is EPA's one stop source for environmental information (www.epa.gov/enviro) and includes the following TRI tools:

- **TRI Pollution Prevention (P2) Search** - Find descriptions of reported P2 activities and compare facilities' waste management and P2 practices.
www.epa.gov/enviro/facts/tri/p2.html
- **TRI Search** - Find TRI facilities that have reported to TRI since 1987 and aggregate chemical release data and relative risk information.
- **TRI Form R Search**¹⁹ - Review TRI information submitted on the reporting form R.

¹⁹ TRI Form R Search allows access to facility release information submitted for chemicals. Users may narrow searches by filtering through Reporting Year, Facility Selection and Geography Search.

- **TRI Form R & A Download**²⁰ - Download TRI reporting Form R and Form A data elements.
- **TRI EZ Search** - Create an ad-hoc report on a single subject area using a limited set of TRI data elements.
- **TRI Customized Search** - Create an ad-hoc report on multiple subject areas using the most comprehensive set of TRI data elements.

EPA GEOSPATIAL PROGRAM & TOOLS

EPA's National Geospatial Program coordinates Agency geospatial data, applications, policy and programs. The [National Geospatial Program](#) website provides an overview of EPA's National Geospatial Program, including:

- A brief overview of EPA's geospatial program;
- Applications that allow users to look at maps that contain information about air quality, water quality, hazardous waste and the environment in specific neighborhoods;
- EPA publicly available data;
- EPA grants that have geospatial components;
- EPA geospatial policies and standards; and
- Additional information and resources on geospatial topics.

To find EPA's geospatial data you can visit EPA's [Environmental Dataset Gateway \(EDG\)](#). The EDG is a gateway to Web-based geospatial information and other information services. It

EPA Web-based Geospatial Analytical Tools

Learn about the environment in your neighborhood. These applications were developed to help the public access and visualize environmental information.

[EJView](#) – This tool allows users to conduct environmental justice assessments, or profiles for a specified geographic area. EJView includes statistics pertinent to social, economic, health and environmental conditions.

[MyEnvironment](#) – A Web-based tool that features a wide range of information about environmental conditions in an area of your choice. This tool integrates EPA and other resources through a single mash-up display of environmental information (e.g., MyAir, MyWater, MyHealth).

[EnviroMapper](#) – This tool allows users to map various types of environmental information, including air, releases, drinking water, toxic releases, hazardous wastes, water discharge permits and Superfund sites. Maps can be created at the national, state and county levels, and linked to environmental text reports.

To check out more of EPA's Web-based Geospatial tools, visit:

<http://www.epa.gov/geospatial/tools.html>

²⁰ TRI Form R & A Download allow users to select data of interest and download into an HTML table or a CSV/Excel file.

enables data consumers to discover, view and access geospatial resources (e.g., data, services, or applications) made available by EPA's program offices, regions, and labs.

To learn more, visit: <http://www.epa.gov/geospatial/tools.html>

MAP CONTENTS

This section provides user a direct web link to metadata associated with each map layer used in the TRI South Philadelphia Mapping Project. Information is organized by sources.

Map Layers from EPA

Toxics Release Inventory Facilities:

<http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/efpoints/MapServer/1>

Air Permitted Facilities:

<http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/efpoints/MapServer/3>

Water Discharge Permitted Facilities:

<http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/efpoints/MapServer/2>

Identified Brownfield Activities:

<http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/efpoints/MapServer/5>

Hazardous Waste Management Sites:

<http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/efpoints/MapServer/4>

Superfund Sites:

<http://epamap5.epa.gov/ArcGIS/rest/services/EMEF/efpoints/MapServer/0>

Map Layers from the City of Philadelphia

Parks:

<http://gis.phila.gov/ArcGIS/rest/services/PhilaGov/Parks/MapServer>

PAL (Police Athletic League) Centers:

http://gis.phila.gov/ArcGIS/rest/services/PhilaGov/PAL_Centers/MapServer

Hospitals:

<http://gis.phila.gov/ArcGIS/rest/services/PhilaGov/Hospitals/MapServer>

Recreation Centers:

http://gis.phila.gov/ArcGIS/rest/services/PhilaGov/Recreation_Facilities/MapServer

Health Centers:

http://gis.phila.gov/ArcGIS/rest/services/PhilaGov/Health_Centers/MapServer

Older Adult Centers:

http://gis.phila.gov/ArcGIS/rest/services/PhilaGov/Recreation_Locations/MapServer/5

Map Layers from the Pennsylvania Spatial Data Access

Nursing Homes:

http://www.pasda.psu.edu/uci/FullMetadataDisplay.aspx?file=DOH_NursingHome201210.xml

Schools:

http://www.pasda.psu.edu/uci/FullMetadataDisplay.aspx?file=PhiladelphiaSchool_Facilities201302.xml

Playgrounds:

http://www.pasda.psu.edu/uci/FullMetadataDisplay.aspx?file=Philadelphia_PPR_Playgrounds201302.xml

Map Layer from Esri

USA Zip Codes:

http://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/USA_ZIP_Codes/FeatureServer/0