

# Eastern Small-footed Bat (*Myotis leibii*) Conservation Plan

## Pennsylvania Pipeline Project

*Prepared for:*

**Sunoco Logistics, L.P.**

525 Fritztown Road  
Sinking Spring, PA 19608

*Prepared by:*

**Tetra Tech, Inc.**

661 Anderson Drive  
Pittsburgh, Pennsylvania 15220  
(412) 921-7090  
Fax (412) 921-4040

*Submitted to:*

**Pennsylvania Game Commission**

2001 Elmerton Avenue  
Harrisburg, PA 17110

**January 2016**

---

## TABLE OF CONTENTS

<b>Section</b>	<b>Page</b>
<b>1.0 INTRODUCTION .....</b>	<b>1</b>
1.1 PROJECT DESCRIPTION .....	1
1.2 LAND REQUIREMENTS .....	1
<b>2.0 EASTERN SMALL-FOOTED BAT BIOLOGY AND HABITAT PREFERENCES .....</b>	<b>3</b>
<b>3.0 HABITAT SURVEYS AND RESULTS .....</b>	<b>4</b>
<b>4.0 MITIGATION MEASURES .....</b>	<b>5</b>
4.1 PRE-CONSTRUCTION .....	5
4.2 POST-CONSTRUCTION .....	5
<b>5.0 CONCLUSION .....</b>	<b>7</b>
<b>6.0 REFERENCES .....</b>	<b>8</b>

---

## LIST OF FIGURES

### Figures

---

Figure 1	Project Overview Map
Figure 2-1 to 2-10	Emergence Survey Area Detail Maps

## LIST OF APPENDICES

### Appendix

---

Appendix A	Agency Coordination
Appendix B	Allegheny Woodrat and Eastern Small-footed Bat Habitat Survey Report

---

## LIST OF ACRONYMS and ABBREVIATIONS

ACRONYM	MEANING
ATWS	Additional Temporary Workspaces
ft	Foot or Feet
G3	Global Vulnerable
HDD	Horizontal Directional Drill
LOD	Limit of Disturbance
LE	Federal Listed Endangered
m	Meter
mm	Millimeter
NGL	Natural Gas Liquid
PA	Pennsylvania
PGC	Pennsylvania Game Commission
PNDI	Pennsylvania Natural Diversity Inventory
PNHP	Pennsylvania Natural Heritage Program
Project	Pennsylvania Pipeline Project
PPP	Pennsylvania Pipeline Project
PT	Pennsylvania Threatened
ROW	Right-of-Way
S2	State Imperiled
SPLP	Sunoco Pipeline, L.P.
Tetra Tech	Tetra Tech Inc.
Wildlife Specialists	Wildlife Specialists, Inc.

## 1.0 INTRODUCTION

On behalf of Sunoco Pipeline L.P. (SPLP), Tetra Tech, Inc. (Tetra Tech) has prepared this Eastern small-footed bat (*Myotis leibii*) Conservation Plan for the Pennsylvania Pipeline Project (PPP or Project). This plan will be used to provide and implement the measures that are necessary to mitigate for potential impacts to the Eastern small-footed bat which is protected under the Game and Wildlife Code (PGC 2014). This plan was developed based on correspondence with the Pennsylvania Game Commission (PGC) and information regarding the biology and habitat preferences of the Eastern small-footed bat. This plan describes the project, survey results, impacted habitat within the project area, and discusses the mitigation measures that will be used to conserve the Eastern small-footed bat.

### 1.1 PROJECT DESCRIPTION

SPLP proposes to construct and operate the Pennsylvania Pipeline Project to expand existing pipeline systems and provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The Project involves the phased installation of approximately 561 miles of two parallel pipelines within a 306-mile, 50-foot-wide right-of-way (ROW) from Houston, Washington County, Pennsylvania to SPLP's Twin Oaks facility in, Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter pipeline would be installed within the ROW from Houston, PA to the Twin Oaks facility (306 miles). A second, up to 20-inch diameter pipeline, is proposed be installed in the same ROW from SPLP's Delmont Station, Westmoreland County, Pennsylvania to the Twin Oaks facility, paralleling the initial line for approximately 255 miles. This conservation plan has been written for the 255 mile portion of the proposed line between Delmont and the Twin Oaks Facility. The Project location is shown on Figure 1.

The Project will provide transportation service for up to 700,000 barrels of NGL per day from the Utica and Marcellus Shale formations for both domestic and international markets. The Project will transport propane, butane, and ethane across Pennsylvania. SPLP's upstream customers currently extract natural gas in the form of methane from the aforementioned geologic formations for distribution to the community. The natural gas extracted for this Project will provide fuel that is used for power generation, heating, and cooking. NGLs are separated from the natural gas stream before it is shipped on the natural gas piping network. Upstream shippers are currently limited by the shortage of NGL transport systems. In addition, the Project will provide along its route across Pennsylvania various exit points for the supply of desperately needed propane, at affordable prices to local distributors. This is especially helpful during peak demand periods when there would otherwise be a shortage of supplies. Finally, upon completion, the Pennsylvania Pipeline Project will promote sustained economic development and jobs-creation throughout Pennsylvania.

### 1.2 LAND REQUIREMENTS

The proposed Project would result in temporary access during the construction period of proposed facilities. Construction of the pipeline would require a 75-foot wide Right-of-Way (ROW) that would contain a 50-foot wide post-construction ROW that is permanently maintained and a 25-foot wide temporary workspace that would be used to facilitate the installation of the pipelines. Following installation, the 25-foot temporary workspace unit would be restored and allowed to return to its pre-construction state unless it is within an existing, permanently maintained ROW. Additional temporary work space (ATWS) would also be needed at some areas to facilitate construction. Sizes of these workspaces would depend on site-specific requirements. All workspaces would be clearly defined within project mapping and within agency and municipality applications. Following construction, ATWS's would be restored and allowed to return their pre-construction state unless they are within an existing, permanently maintained ROW.

Construction of the Project's aboveground facilities and the use of non-public access roads would have land requirements. New pump stations would generally require 3-4 acres of land and modifications to existing pump stations would require an additional 2-3 acres of land. Support sites, such as

pipe/contractor yards, are to be sited on previously disturbed areas and generally range from 5-15 acres in size. Temporary use would primarily be limited to existing non-public roads, driveways, and farm lanes that may require improvements. Permanent access roads to stations or valve settings may also be required. All proposed temporary and permanent access roads would be clearly defined within project mapping and within agency and municipality applications. Following construction, temporary work spaces would be restored and allowed to return their pre-construction state unless they are within an existing, permanently maintained ROW.

## **2.0 EASTERN SMALL-FOOTED BAT BIOLOGY AND HABITAT PREFERENCES**

The Eastern small-footed bat is about 73-82-millimeters (mm) in length and weighs between 5 and 7 grams (Kurta 1995). Eastern small-footed bats have a golden-brown coat of fur on their head and back (Kurta 1995). It can be distinguished from its congeners by its small feet, black face, and keeled calcar (Kurta 1995, Reid 2006).

The Eastern small-footed bat is globally ranked as G3 (Global Vulnerable), state ranked as S2 (State Imperiled), and its Pennsylvania status is Pennsylvania Threatened (PT) (Pennsylvania Natural Heritage Program [PNHP] 2015). Eastern small-footed bats are found throughout the eastern United States and Canada ranging from Oklahoma southeast to Georgia and Northeast to Quebec (Natureserve 2015). Small-footed bats feed mostly on soft-bodied prey species such as flies, beetles, leafhoppers, and flying ants (Moosman et al. 2007). Summer roosting habitat includes caves and mines, tree hollows, exfoliating bark, cracks and crevices in rock walls, and ridge top talus fields (PGC 2014).

---

### 3.0 HABITAT SURVEYS AND RESULTS

In the March 14, 2014 response to a Large Project Pennsylvania Natural Diversity Inventory (PNDI) request for the PPP (Appendix A), the PGC identified 7 areas where rocky habitat exists in mountainous areas of Indiana, Cambria, Blair, Huntingdon, Perry, and Cumberland Counties. Additionally, surveys were performed along the entire Altoona Bypass portion of the proposed Project. Based on project correspondence with the PGC (Appendix A), on behalf of SPLP, Tetra Tech contracted Wildlife Specialists, Inc. (Wildlife Specialists) to complete Eastern small-footed bat surveys across Pennsylvania where potential habitat had been identified. A report of the 2014 and 2015 surveys for the Project was previously provided to the PGC for review and is included as Appendix B. The results of the 2014 and 2015 survey activities for the PPP are described below.

Wildlife Specialists biologists conducted Eastern small-footed bat surveys between June 23 and July 24, 2014 and April 15-28, 2015. Field surveys were performed in the 7 areas of potential habitat identified by the PGC within the Project's proposed Limit of Disturbance (LOD) and a 200-meter (m) buffer, as well as, the entire Altoona Bypass portion of the PPP. The LOD included all proposed workspaces involving new land disturbances, including the permanent ROW, temporary workspaces, access roads, pump stations, and staging areas. Surveyed areas varied from mature deciduous forest with high canopy closure and various rocky habitats to open talus slopes. During the survey effort, trained Wildlife Specialists biologists searched rocky habitat features for potential Eastern small-footed bat summer roosting habitat. It should be noted that there is no formal protocol for surveying for Eastern small-footed bat habitat and that these surveys were performed while relying on previous findings, species specific considerations, and best professional judgement.

Field surveys identified that 6 of the 7 areas identified by the PNDI, as well as portions of the Altoona Bypass area contained potential Eastern small-footed bat summer roosting habitat. The Lock Mountain survey area was the only area surveyed where no potential habitat was identified. A total of 1.7 acres of potential Eastern small-footed bat habitat was delineated within the LOD among the 7 identified areas and Altoona Bypass survey area. Additionally, at the time of the surveys, a small-footed bat was observed flying at Shade Mountain.

---

## 4.0 MITIGATION MEASURES

Through correspondence with the PGC and use of their *Pennsylvania Game Commission Eastern Small Footed Bat (Myotis leibii) Environmental Review Roost Structure Guidance Document* (August, 2014 Revision), SPLP developed this Eastern Small-Footed Bat Conservation Plan. The following sections outline SPLP's pre-construction and post-construction mitigation measures to minimize and mitigate for impacts to this species.

### 4.1 PRE-CONSTRUCTION

From the onset of the Project, SPLP has instructed project designers to consider environmental impacts in regard to all aspects of the proposed Project and to avoid and minimize wherever possible while allowing safe installation. Pipeline engineers were provided a large list of restrictions, recommendations, and requirements to consider during the design phase. Major considerations, where co-location with existing utility corridors, limiting the construction corridor to the minimum amount practicable, use of Horizontal Directional Drilling (HDD) technology, and avoidance and minimization at sensitive habitats.

SPLP has co-located the project alignment with an existing SPLP ROW for approximately 80% of the route so that this existing ROW could be utilized as workspace. With the use of portions of the existing ROW for construction, this is a major means for avoiding new impacts to sensitive resources (i.e., forested wetlands, forest areas, streams) and for minimizing environmental impacts for the entire Project. SPLP has also co-located with foreign utility lines whenever possible when routing pulls away from the existing SPLP ROW. In addition, SPLP has implemented a number of route variations through environmental feedback, both minor and major, to further reduce the impacts associated with the Project. Many of these route variations are driven by environmental factors such as avoidance of forested wetlands or areas occupied by sensitive species.

In general, the construction ROW is limited to 75-ft in most areas. This is comprised of a 50-ft-wide permanent easement and 25-ft of temporary workspace required to facilitate construction. In some areas, additional temporary workspace is required to facilitate construction. The industry standard for installation of this size of pipe is 100-ft. Restricting construction to 75-ft significantly reduces impacts to the landscape including a large reduction in impacts to forested areas. Instead of continuing through the wetlands/streams with the 75-ft-wide construction ROW, SPLP has narrowed the construction ROW to 50-ft for all wetland/stream crossings thus minimizing temporary impacts to these resources during construction. This narrow construction corridor, along with co-location efforts has greatly minimized fragmentation of habitat impacts.

Finally, SPLP will prevent small-footed bats from accessing summer roosting habitat identified within the Project limits of disturbance to avoid any chance of incidental take that could occur during construction activities. Prior to emergence from hibernation (March 31), SPLP will seal off these areas with a geotextile material such as silt fencing, mesh screening, or other appropriate materials. If mesh screening is used, a maximum size of 2 mesh/inch will be installed to ensure that no bats can access entrances. Cover materials will completely seal off all entrances, cracks, and crevices to these potential roosting sites thereby preventing the entry of small-footed bats. This conservation measure ensure that no harm to or incidental take of this species will occur during construction activities in the identified habitat areas.

### 4.2 POST-CONSTRUCTION

Following the completion of construction, SPLP will construct roosting structures as close to the areas of impacted habitat as possible. Using a mitigation rate of 3:1, which yields 5 acres, and a rate of four structures per acre, SPLP will construct twenty new roosting structures. The goal will be for these structures to be created in areas of temporary disturbance such as along the temporary ROW, temporary workspaces, or in areas adjacent to these spaces. The final location of the structures will also be dictated by land availability.

---

In accordance with the *Pennsylvania Game Commission Eastern Small Footed Bat (Myotis leibii) Environmental Review Roost Structure Guidance Document* (August, 2014 Revision), newly created roosting structures will have an inner core that is approximately 10-ft wide and 5ft tall. The core will then be covered by multiple layers of large, flat rocks of varying sizes. These rocks will maximize cracks and crevices that contain 1-2-inch openings with some openings as narrow as ¼-inch to provide protection from predators such as snakes. The outer rocks and caps will be shingled to ensure that precipitation does not enter the structure. All rocks used in construction will be cleaned of dirt and other organic materials. Limestone rocks will not be used unless working in karst areas.

Structures will be arranged so that they are oriented southeast to west (135° to 270°) to receive the greatest amount of sunlight exposure during the day. Rock piles will be placed in close proximity to forested or early successional habitat to provide bats with cover from predators and travel corridors. If possible, structures will be placed in close proximity to perennial sources of water such as wetlands, streams, and other riparian areas. Multiple rock piles constructed in the same area will be spaced and grouped appropriately following an evaluation of the impacted landscape.

Upon the completion of these structures, emergence surveys will be performed by an experienced bat biologist during the summer months to monitor their usage. Emergence surveys will be performed for a three year period, or until bats are seen emerging from the structures. Three surveys will be performed at each structure to obtain 3 separate nights of data from different parts of the survey season. The first survey will be performed during the second or third week of June. The second survey will be performed during the second week of July and the final survey will be performed during the last week of July.

## 5.0 CONCLUSION

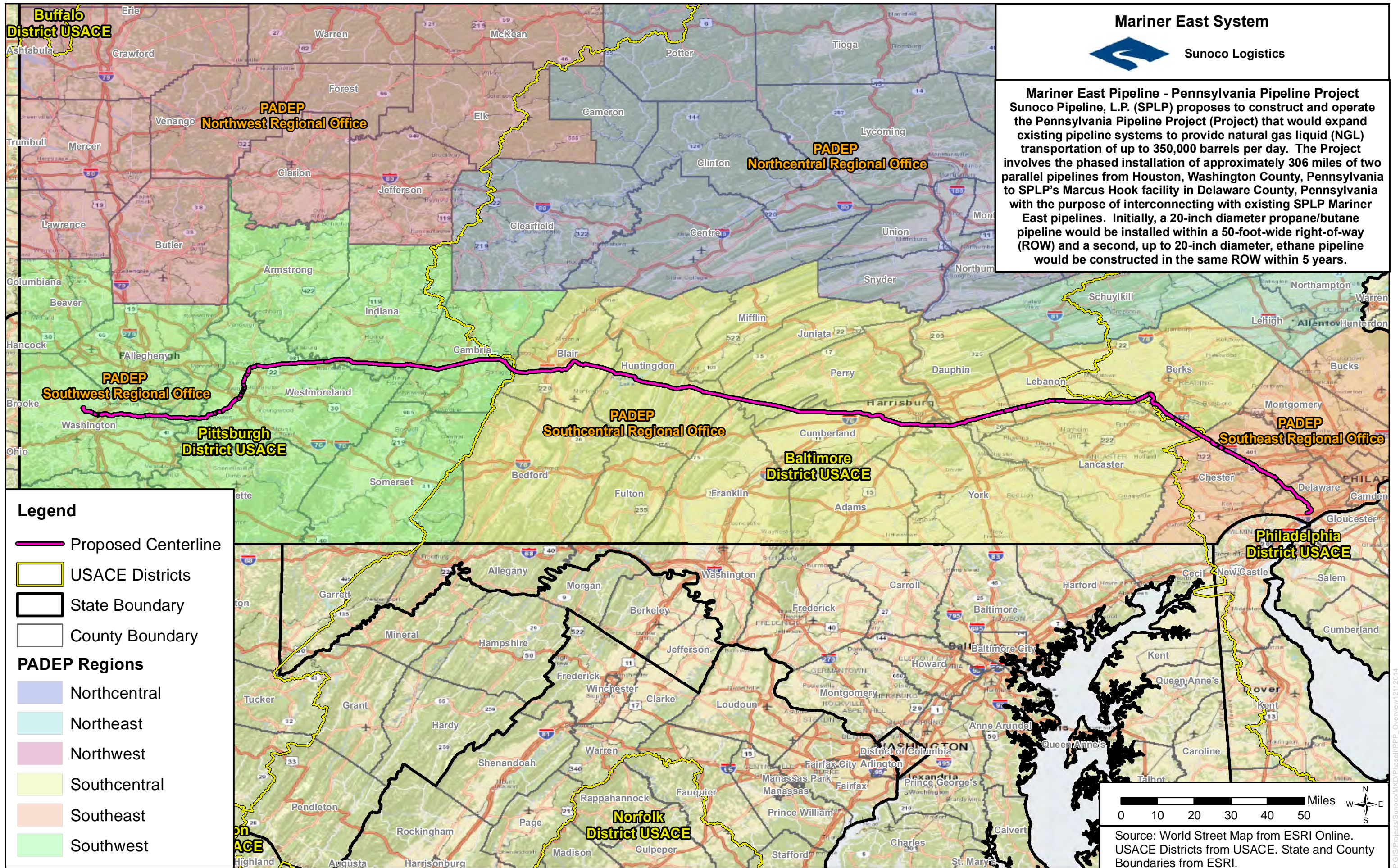
This Eastern small-footed bat Conservation Plan for the Pennsylvania Pipeline Project provides SPLP's commitment to mitigation measures to prevent permanent impacts to the small-footed bat within the Project area. SPLP has conducted extensive background and field surveys to identify Eastern small-footed bat habitats within and adjacent to all Project work areas. These surveys provided the foundation for the development of this plan.

SPLP has implemented several measures as a standard practice to reduce impacts to sensitive resources including those to Eastern small-footed bat habitat. These include co-locating the project alignment with an existing SPLP ROW for approximately 80% of the route and limiting the construction ROW to 75-ft in most areas. This narrow construction corridor, along with co-location efforts has greatly minimized fragmentation of habitat impacts. SPLP is also committed to preventing impacts to Eastern small-footed bats by sealing off entrances, cracks, and crevices to potential summer roosting sites prior to emergence from hibernation (March 31). Additionally, SPLP will mitigate by creating new roosting structures following the completion of construction. Based on SPLP's commitments to the protection and conservation of the Eastern small-footed bat and what is known about the presence and/or potential presence of the species in the vicinity of the Project area, we conclude that the PPP is not likely to impact the Eastern small-footed bat.

## 6.0 REFERENCES

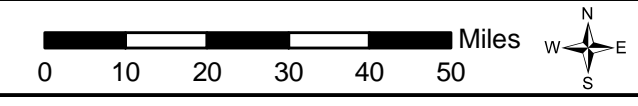
- Kurta A. 1995. Mammals of the Great Lakes Region. Revised Edition. 60-90pp.
- Natureserve 2015. NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 6.2. NatureServe, Arlington, Virginia. Available <http://www.natureserve.org/explorer> (accessed November 2015).
- Moosman JR. PR, Thomas, HT, Veilleux JP. 2007. Food Habits of Eastern Small-Footed Bats (*Myotis leibii*) in New Hampshire. *American Midland Naturalist*. (158). 354-360pp.
- Pennsylvania Game Commission (2014) Eastern Small Footed Bat (*Myotis leibii*) Environmental Review Roost Structure Guidance Document.
- Pennsylvania Game Commission (PGC 2014) Eastern Small-Footed Bat (*Myotis leibii*) Fact Sheet. Available at: <http://www.naturalheritage.state.pa.us/Species.aspx>
- Pennsylvania Natural Heritage Program (PNHP). 2015. Species of Special Concern List. Available at: <http://www.naturalheritage.state.pa.us/Species.aspx>
- Reid, FA. 2006. A Field Guide to the Mammals of North America. Peterson Field Guide (4<sup>th</sup> ed.) 399-424pp.

## **FIGURES**

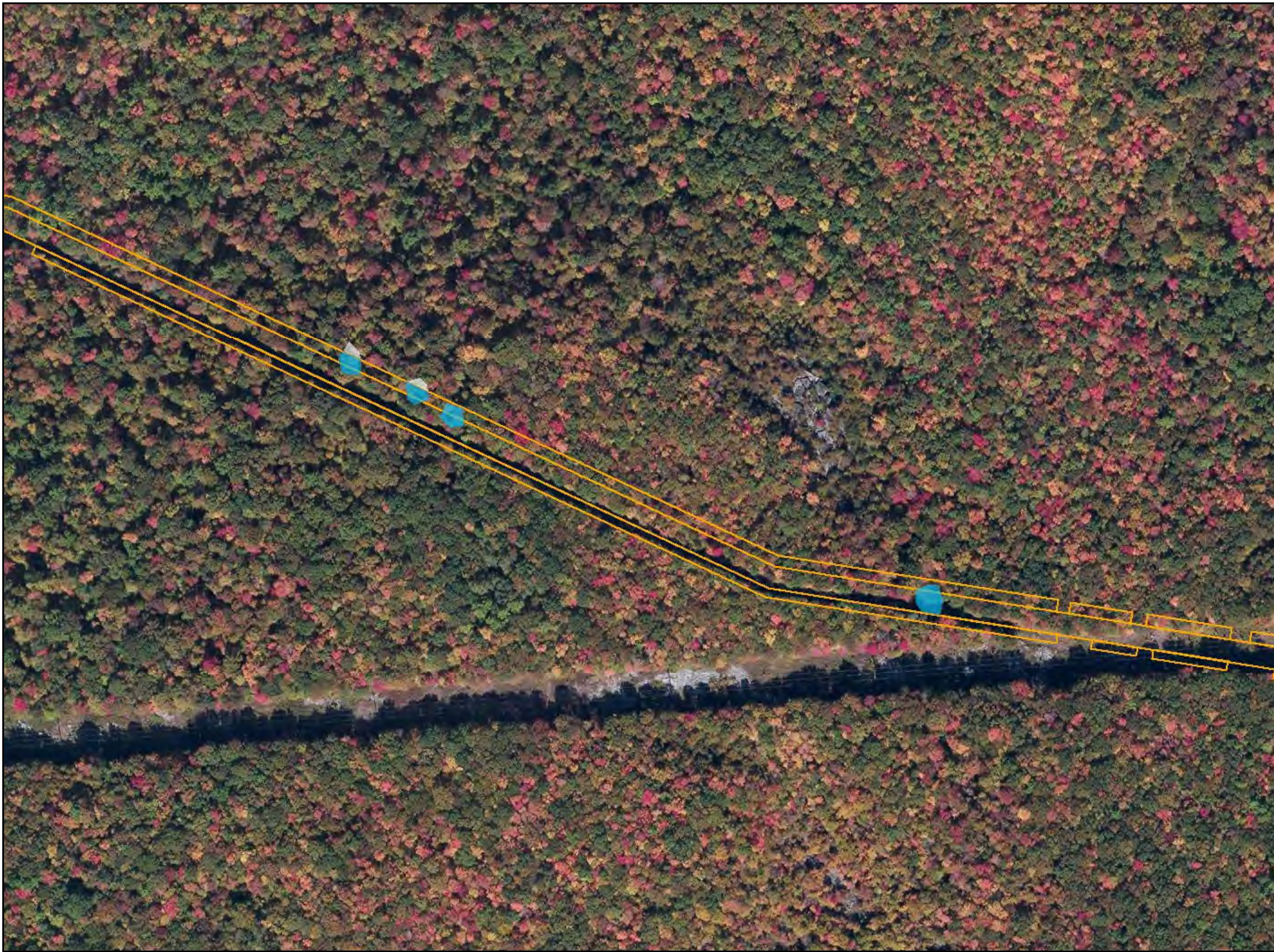


**Mariner East Pipeline - Pennsylvania Pipeline Project**  
 Sunoco Pipeline, L.P. (SPLP) proposes to construct and operate the Pennsylvania Pipeline Project (Project) that would expand existing pipeline systems to provide natural gas liquid (NGL) transportation of up to 350,000 barrels per day. The Project involves the phased installation of approximately 306 miles of two parallel pipelines from Houston, Washington County, Pennsylvania to SPLP's Marcus Hook facility in Delaware County, Pennsylvania with the purpose of interconnecting with existing SPLP Mariner East pipelines. Initially, a 20-inch diameter propane/butane pipeline would be installed within a 50-foot-wide right-of-way (ROW) and a second, up to 20-inch diameter, ethane pipeline would be constructed in the same ROW within 5 years.

- Legend**
- Proposed Centerline
  - USACE Districts
  - State Boundary
  - County Boundary
- PADEP Regions**
- Northcentral
  - Northeast
  - Northwest
  - Southcentral
  - Southeast
  - Southwest

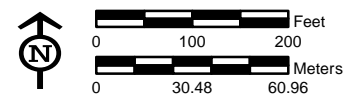


Source: World Street Map from ESRI Online.  
 USACE Districts from USACE. State and County Boundaries from ESRI.



- Legend**
- Eastern Small-Footed Bat Impacted Area
  - Eastern Small-Footed Bat Non-Impacted Area
  - Access Road
  - ATWS
  - Limit of Disturbance

**Sheet Identifier**



**FIGURE 2-1  
EASTERN SMALL-FOOTED BAT**  
PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CAMBRIA COUNTY, PA

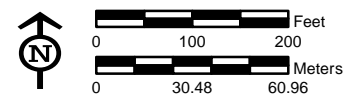


Notes:  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).



- Legend**
- Eastern Small-Footed Bat Impacted Area
  - Eastern Small-Footed Bat Non-Impacted Area
  - Access Road
  - ATWS
  - Limit of Disturbance

**Sheet Identifier**



**FIGURE 2-2  
EASTERN SMALL-FOOTED BAT**  
PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CAMBRIA COUNTY, PA

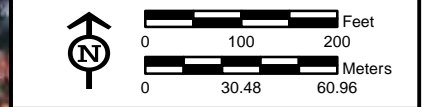
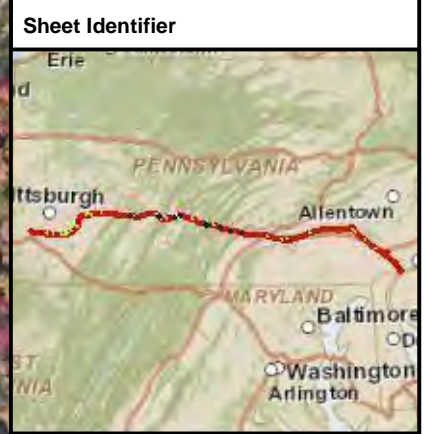


Notes:  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).



**Legend**

- Eastern Small-Footed Bat Impacted Area
- Eastern Small-Footed Bat Non-Impacted Area
- Access Road
- ATWS
- Limit of Disturbance



**FIGURE 2-3  
EASTERN SMALL-FOOTED BAT**

**PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CAMBRIA COUNTY, PA**



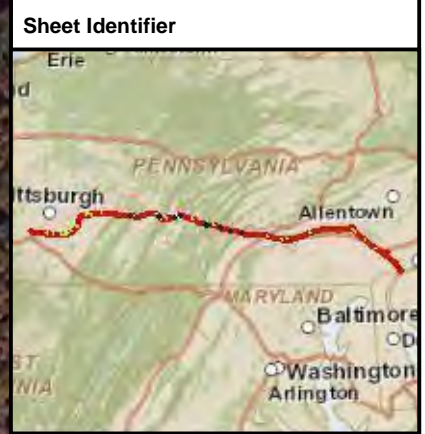
**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH\_P015\SUNOCO\MARINER EAST 2\MXD\PENNSYLVANIA\_PIPELINE\_ESMALLFOOTEDBAT.MXD 01/06/16 GIS



**Legend**

- Eastern Small-Footed Bat Impacted Area
- Eastern Small-Footed Bat Non-Impacted Area
- Access Road
- ATWS
- Limit of Disturbance



**FIGURE 2-4  
EASTERN SMALL-FOOTED BAT**

**PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
BLAIR COUNTY, PA**



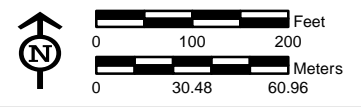
**Notes:**  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH\_P\GIS\SUNOCO\MARINER\_EAST\_2\MXD\PENNSYLVANIA\_PIPELINE\_ESMALLFOOTEDBAT.MXD 01/06/16 GIS



- Legend**
- Eastern Small-Footed Bat Impacted Area
  - Eastern Small-Footed Bat Non-Impacted Area
  - Access Road
  - ATWS
  - Limit of Disturbance

**Sheet Identifier**



**FIGURE 2-5  
EASTERN SMALL-FOOTED BAT**  
PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
BLAIR COUNTY, PA

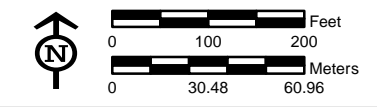
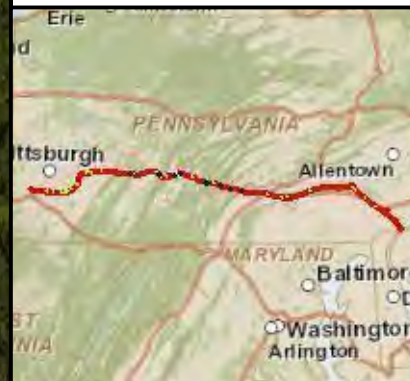


**Notes:**  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).



- Legend**
- Eastern Small-Footed Bat Impacted Area
  - Eastern Small-Footed Bat Non-Impacted Area
  - Access Road
  - ATWS
  - Limit of Disturbance

**Sheet Identifier**



**FIGURE 2-6**  
**EASTERN SMALL-FOOTED BAT**  
 PENNSYLVANIA PIPELINE PROJECT  
 NOVEMBER 20, 2015 ALIGNMENT  
 SUNOCO LOGISTICS, L.P.  
 HUNTINGDON COUNTY, PA



Notes:  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

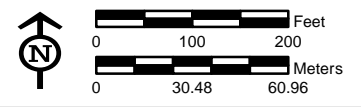
PGH\_P015\SUNOCO\MARINER EAST 2\MXD\PENNSYLVANIA\_PIPELINE\_ESMALLFOOTEDBAT.MXD 01/06/16 GIS



**Legend**

- Eastern Small-Footed Bat Impacted Area
- Eastern Small-Footed Bat Non-Impacted Area
- Access Road
- ATWS
- Limit of Disturbance

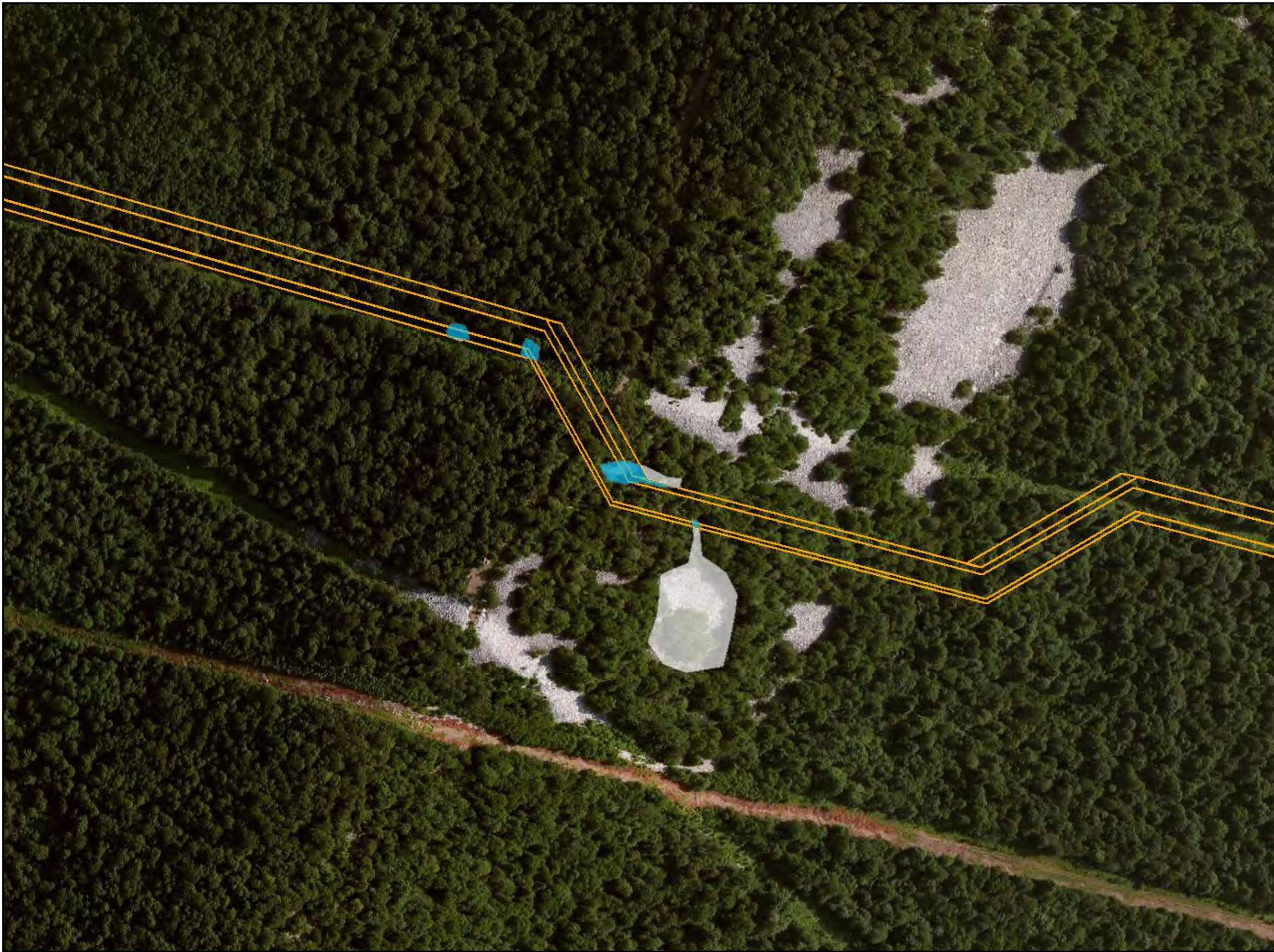
**Sheet Identifier**



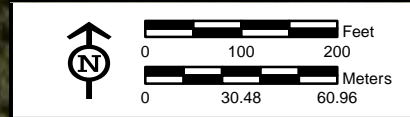
**FIGURE 2-7  
EASTERN SMALL-FOOTED BAT**  
PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA



Notes:  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).



- Legend**
- Eastern Small-Footed Bat Impacted Area
  - Eastern Small-Footed Bat Non-Impacted Area
  - Access Road
  - ATWS
  - Limit of Disturbance



**FIGURE 2-8  
EASTERN SMALL-FOOTED BAT**  
PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA



**Notes:**  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH\_P015\SUNOCO\MARINER EAST 2\MXD\PENPIPELINE\_ESMALLFOOTEDBAT.MXD 01/06/16 GIS



**Legend**

- Eastern Small-Footed Bat Impacted Area
- Eastern Small-Footed Bat Non-Impacted Area
- Access Road
- ATWS
- Limit of Disturbance

**Sheet Identifier**

Feet  
 0 100 200  
 Meters  
 0 30.48 60.96

**FIGURE 2-9**  
**EASTERN SMALL-FOOTED BAT**  
 PENNSYLVANIA PIPELINE PROJECT  
 NOVEMBER 20, 2015 ALIGNMENT  
 SUNOCO LOGISTICS, L.P.  
 PERRY COUNTY, PA



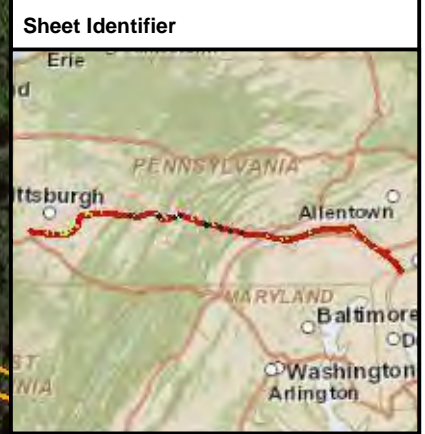
Notes:  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH\_P015\SUNOCO\MARINER\_EAST\_2\MXD\PENNSYLVANIA\_PIPELINE\_ESMALLFOOTEDBAT.MXD 01/06/16 GIS



**Legend**

- Eastern Small-Footed Bat Impacted Area
- Eastern Small-Footed Bat Non-Impacted Area
- Access Road
- ATWS
- Limit of Disturbance



**FIGURE 2-10  
EASTERN SMALL-FOOTED BAT**  
PENNSYLVANIA PIPELINE PROJECT  
NOVEMBER 20, 2015 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
PERRY COUNTY, PA



**Notes:**  
1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH\_P015\SUNOCO\MARINER EAST 2\MXD\PENNSYLVANIA\_PIPELINE\_ESMALLFOOTEDBAT.MXD 01/06/16 GIS

## **APPENDIX A**

### **Agency Coordination**

**From:** [Taucher, John](#)  
**To:** [Smith, Preston](#)  
**Subject:** RE: Pennsylvania Pipeline Project  
**Date:** Tuesday, October 27, 2015 8:40:46 AM  
**Attachments:** [2014 Eastern Small-footed Bat Roost Structures and Examples\\_081214.pdf](#)

---

Preston,

Attached, please find a guidance for the alternate roost structures for small-footed bats and some example photographs. Please note that the size of each structure is flexible, it should fit into the area and be constructed properly with adequate sun exposure. Generally these should be constructed as close to the actual impacts as possible, however they can be aggregated in some instances. Based on the shapefiles that delineated the small-footed habitat, it appears 1.7 acres of suitable habitat will be impacted. A mitigation rate of 3:1 will be implemented which yields 5 acres. Four structures are to be constructed per acre of impact which leaves a total of 20 structures for the project.

In addition, monitoring will be required for replacement structures in the form of emergence counts. Three years of monitoring or until small-footed bat use is documented, whichever comes first (i.e. if bats are found using it the first year, no further monitoring is required).

Regarding the woodrat, constructing habitat similar to the small-footed bat roost structures (just with larger crevices) and/or supplemental plantings would be sufficient for mitigation.

John

---

**From:** Smith, Preston [mailto:Preston.Smith@tetrattech.com]  
**Sent:** Monday, October 26, 2015 2:53 PM  
**To:** Taucher, John <jotaucher@pa.gov>  
**Subject:** RE: Pennsylvania Pipeline Project

Hi John,

Thanks for sending this. Do you have any examples of approved mitigation plans for small-footed bats or Allegheny woodrats that I could use as a guide?

I also got your letter for the mussels, fish, and redbelly turtle.

Thanks again,

Preston

**Preston Smith | Manager, Wetlands and Ecological Services Department**

Direct: 412.921.8167 | Main: 412.921.7090 | Cell: 724.516.6842 | Fax: 412.921.4040

[preston.smith@tetrattech.com](mailto:preston.smith@tetrattech.com)

Tetra Tech, Inc. | Appalachian Basin Oil and Gas Services

661 Andersen Drive Foster Plaza No. 7 | Pittsburgh, PA 15220 | [www.tetrattech.com](http://www.tetrattech.com)



PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

---

**From:** Taucher, John [<mailto:jotaucher@pa.gov>]  
**Sent:** Monday, October 26, 2015 1:45 PM  
**To:** Smith, Preston <[Preston.Smith@tetrattech.com](mailto:Preston.Smith@tetrattech.com)>  
**Subject:** Pennsylvania Pipeline Project

Preston,

I am working on updating the PGC's PNDI response letter regarding the Pennsylvania Pipeline Project based on the small-footed bat and woodrat information you provided. Regarding the eastern small-footed bats, suitable bat roosting habitat was identified and delineated within the proposed project.

From here there are two options:

- 1) Small-footed bat use can be assumed, in which case there will be a seasonal restriction on the suitable habitat and any impacts to the habitat will need to be mitigated for.
- 2) Verify small-footed bat use at suitable habitat through emergence counts. Seasonal restriction and mitigation will be required for any habitat that small-footed bat use is verified only. All other areas there will be no restrictions or mitigation.

Regarding Allegheny woodrats, mitigation will only be required for impacts to sites where woodrat sign was found. Woodrat sign was found at four locations along the proposed pipeline. One location is located on State Forest property which will require coordination with DCNR.

A mitigation plan for both small-footed bats and woodrats will need to be submitted and approved by the PGC prior to issuing a resolution letter. If you have any questions, please do not hesitate to contact me.

Thanks,

**John Taucher**

**Pennsylvania Game Commission**

*Bureau of Wildlife Habitat Management*

*Division of Environmental Planning & Habitat Protection*

2001 Elmerton Avenue

Harrisburg, PA 17110

717-787-4250 ext. 3632

Fax 717-787-6957

## **APPENDIX B**

# **Allegheny Woodrat and Eastern Small-Footed Bat Survey Report**

11/12/2016 Project Note: The survey report is provided within the January 15, 2016 correspondence to the PGC. The report is not required to implement this conservation plan.