

FINAL

**COMMUNITY INVOLVEMENT PLAN
FOR CERCLA ACTIVITIES**

FOR

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
PLUM BROOK STATION
SANDUSKY, OHIO**

Prepared for:



NASA Glenn Research Center
Plum Brook Station
3899 E. Scheid Road
Sandusky, Ohio 44870

Prepared by:



Leidos
1750 Presidents Street
Reston, Virginia 20190

September 2020

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ACRONYMS AND ABBREVIATIONS

BGSU	Bowling Green State University
CDC	Centers for Disease Control and Prevention
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIB	Community Information Bank
CIP	Community Involvement Plan
DERP	Defense Environmental Restoration Program
DNT	Dinitrotoluene
DoD	U.S. Department of Defense
ECCL	Erie County Conservation League
ECEDC	Erie County Economic Development Corporation
FUDS	Formerly Used Defense Sites
FY	Fiscal Year
GRC	Glenn Research Center
NACA	National Advisory Committee for Aeronautics
NASA	National Aeronautics and Space Administration
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
NTCRA	Non-Time-Critical Removal Action
Ohio EPA	Ohio Environmental Protection Agency
PAH	Polycyclic Aromatic Hydrocarbon
PBOW	Plum Brook Ordnance Works
PBS	Plum Brook Station
RAB	Restoration Advisory Board
TASC	Technical Assistance Services for Committees
TFOME	Test Facility, Operations, Maintenance, Engineering Services, HX5 Sierra, LLC
TNT	Trinitrotoluene
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
WWII	World War II

EXECUTIVE SUMMARY

This Community Involvement Plan (CIP) is the foundation of the National Aeronautics and Space Administration's (NASA's) community involvement and outreach program for a cleanup process at seven sites at the NASA Glenn Research Center (GRC) facility, Plum Brook Station (PBS). The seven sites are the Erie County Conservation League (ECCL) Firing Range, Firing Ranges 3 and 4, Firing Range 5 and Construction Debris Pile, Fox Road Burning Ground, Snake Road Burning Ground, Taylor Road Burning Ground, and Disposal Areas 2A and 2B. The cleanup process is set by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund, which provide Federal funds and procedures to clean up uncontrolled or abandoned hazardous waste sites.

This CIP specifies the outreach activities that NASA may use to address community concerns and expectations. It will assist the NASA Community Involvement Specialists, who serve as liaisons between community members and the NASA technical site team members and other agency officials, in finding effective and appropriate ways to inform and engage the public. NASA is committed to promoting active and meaningful public participation in the investigation to determine if past activities impacted the environment or have the potential to impact human health and in planning alternatives for cleanup.

This CIP is an invitation to involve the public in the PBS CERCLA Sites. This is the only CIP that has been prepared for these sites for PBS as of September 2020. Updates may follow in order to guide activities as they progress. All CIPs should be "living" documents and are most effective when they are updated or revised as site conditions change. These updates often are made during the 5-year review periods.

This CIP is composed of five sections:

- Section 1 discusses the purpose of the CIP and the framework under which it will function.
- Section 2 presents the history and nature of the contamination and aspects of the selected remedy and discusses the history of community involvement at the site.
- Section 3 identifies geographic and demographic characteristics of the PBS CERCLA Sites and discusses general and specific community concerns.
- Section 4, the action plan, provides the principles for community involvement and identifies tools that NASA will continue to use to promote greater public participation and awareness. These tools are then combined with the concerns and issues identified in Section 3, which include general and specific community concerns as well as community involvement commitments that were identified during NASA's initial stakeholder interviews.
- Section 5 contains the references that were used in preparing this CIP.
- The Appendices are designed to serve as a resource guide for both NASA and the community. Specific sections include NASA and project team contacts, local government contacts, media contacts, and directions on how to obtain additional Superfund and NASA information.

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1. OVERVIEW OF COMMUNITY INVOLVEMENT PLAN

This document is the Community Involvement Plan (CIP) for the cleanup process at seven sites at the National Aeronautics and Space Administration (NASA) Glenn Research Center (GRC) facility, Plum Brook Station (PBS), Sandusky, Ohio. The seven sites include the Erie County Conservation League (ECCL) Firing Range, Firing Ranges 3 and 4, Firing Range 5 and Construction Debris Pile, Fox Road Burning Ground, Snake Road Burning Ground, Taylor Road Burning Ground, and Disposal Areas 2A and 2B. The purpose of this plan is to present the mechanisms for informing and involving the public in activities and decisions related to NASA's cleanup projects at PBS directed by a process created under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or Superfund. NASA's Environmental Compliance and Restoration Program is responsible for CERCLA activities, which are funded within Construction and Environmental Compliance and Restoration Appropriations appropriated by Congress.

To add context to the readers' understanding of NASA and the community, this plan also describes NASA's community involvement efforts at PBS since 1999. This description provides additional information on current community perceptions and concerns.

The community involvement activities identified in this plan meet the requirements mandated by CERCLA or addressed in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which is the regulatory blueprint for implementing CERCLA. In addition, the plan makes use of guidance from the U.S. Environmental Protection Agency (USEPA) *Superfund Community Involvement Handbook* (USEPA 2016).

NASA's overall objectives of this CIP are to:

- Provide the public with accurate, timely, and understandable information and/or access to the information needed to understand the projects as they move forward;
- Provide the public with the opportunity to give informed and meaningful input;
- Ensure adequate time and opportunity to provide input and for that input to be considered before final decisions are made;
- Respect and give full consideration to community input; and
- Assist the public in understanding the project decision-making process during project design and cleanup and the community's role in that process.

1.1 WORKING TOGETHER

NASA developed this CIP to facilitate two-way communication between NASA PBS and the communities affected by and interested in the PBS CERCLA Sites and to encourage community involvement in site activities. In developing this plan, NASA made an effort to gather public input and drew upon as many information sources as possible, including community interviews; meeting notes from previous site work; and site files, including CIPs from three other NASA sites. These CIPs (then called Community Relations Plans) included:

- NASA PBS Reactor Facility Decommissioning Community Relations Plan, 2002;
- Plum Brook Ordnance Works (PBOW) Community Relations Plan, 2000; and
- Community Relations Plan, Lewis Research Center, 1994.

Because the 2000 PBOW Community Relations Plan included the routine and consistent communication between the U.S. Army Corps of Engineers (USACE) and the communities and stakeholder groups, USACE coordinated the development of a Restoration Advisory Board (RAB). NASA included 2 of the RAB members in the development of this 2020 CIP; 11 of the 2015 RAB members were contacted for input. This CIP will refer to that group as the “USACE RAB,” although in interviews with two RAB members, they referred to themselves as the “NASA RAB.”

1.2 NASA, USEPA, AND OHIO EPA ALIGNED WITH CERCLA

The Federal CERCLA program takes place within a legal, regulatory, and financial framework that defines many of NASA’s activities and affects the decision-making process. NASA has lead agency responsibility for the project but must maintain agreement for some decision-making with USEPA and the Ohio Environmental Protection Agency (Ohio EPA).

NASA is also supported in its decision-making and oversight work by other state and Federal agencies. The national organizations that play a significant role in the cleanup of the CERCLA Sites are the U.S. Department of the Interior, U.S. Department of Justice, U.S. Fish and Wildlife Service, U.S. Geological Survey, and USACE. The Ohio Department of Natural Resources, Ohio EPA, and Ohio Historic Preservation Office provide State oversight to the decision-making process. NASA also maintains regular communication with three North American Tribes: the Forest County Potawatomi Community of Wisconsin, Nottawaseppi Huron Band of Potawatomi, and Miami Tribe of Oklahoma. **Appendix A** provides contact information for all three Tribes.

1.2.1 CERCLA Hazardous Substances

CERCLA contains approximately 1,200 listed hazardous substances. These include:

- Hazardous wastes, as defined by the Resource Conservation and Recovery Act; and
- Hazardous and toxic substances, as defined by the:
 - Clean Air Act,
 - Clean Water Act, and
 - Toxic Substances Control Act.

The PBS CERCLA Sites follow cleanup requirements for all of the above defined hazardous and toxic substances and wastes.

1.2.2 CERCLA Sites at Plum Brook Station

The seven PBS CERCLA Sites included in this CIP encompass a total of about 97.5 acres on the 6,740-acre NASA PBS in the Lake Erie community of Sandusky, Ohio.

The seven PBS CERCLA Sites are illustrated in **Figure 1-1**. The sites require two different cleanup approaches: non-time-critical removal action (NTCRA) and remedial action.

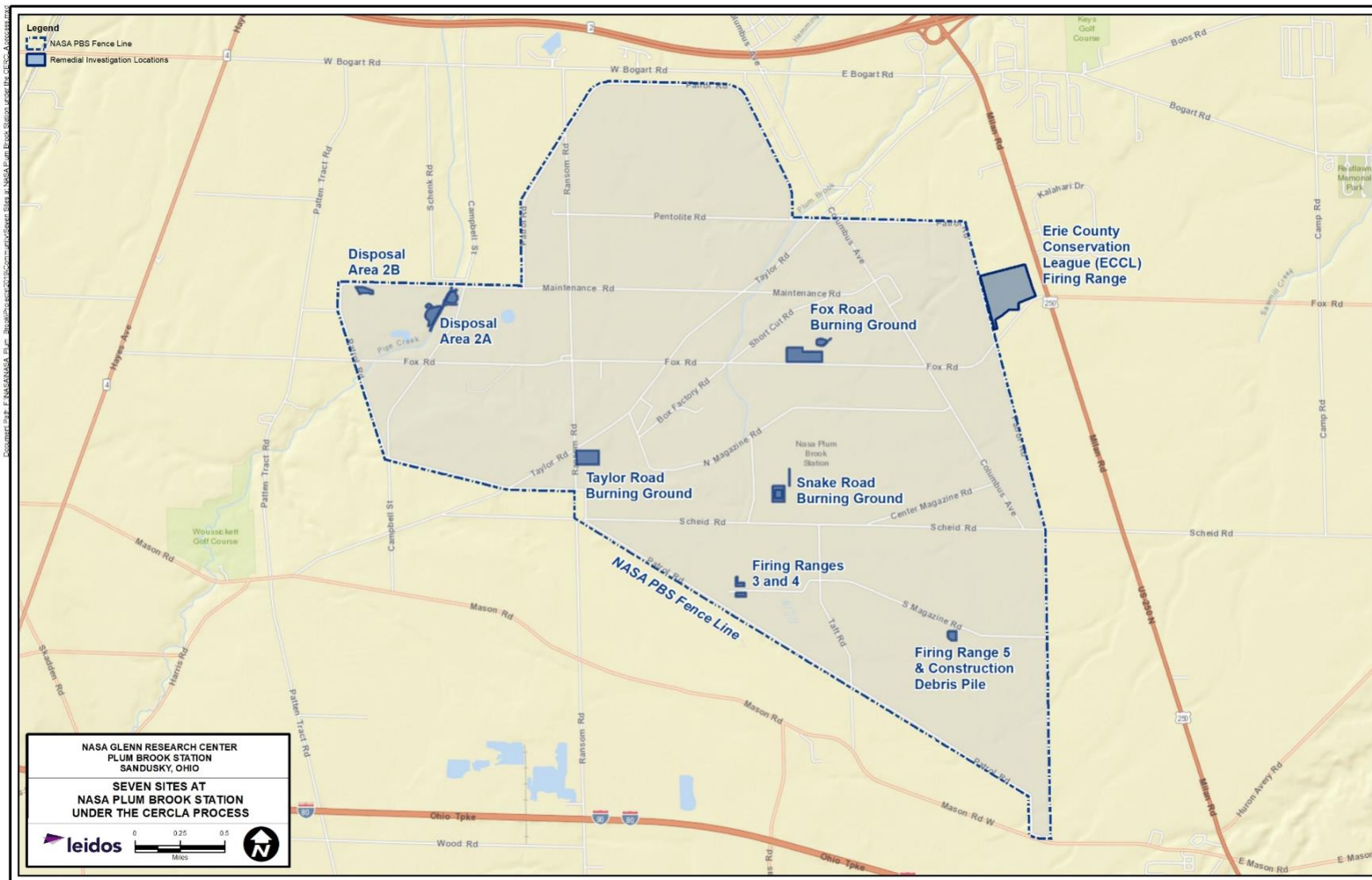
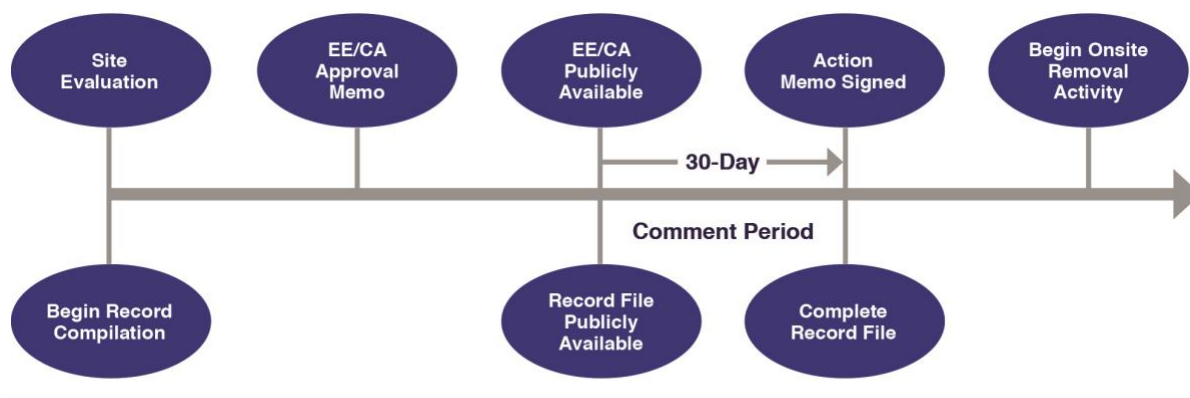


Figure 1-1. Seven PBS CERCLA Sites

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1.2.2.1 Non-Time-Critical Removal Actions

Three PBS CERCLA Sites (ECCL Firing Range, Firing Range 5 and Construction Debris Pile, and Firing Ranges 3 and 4) are former firing ranges and require NTCRAs for cleanup. Non-time-critical, generally, designates a site that presents a non-complex problem with no time-sensitive threats. **Figure 1-2** shows the standard steps of an NTCRA and when the community can read and respond to the information available.



EE/CA = Engineering Evaluation/Cost Analysis

Figure 1-2. Non-Time-Critical Removal Actions

Removal actions are short-term responses intended to protect people from immediate or non-immediate threats posed by hazardous waste sites. Examples of removal actions are excavating contaminated soil; erecting a security fence; or stabilizing a berm, dike, or an impoundment. Removal actions also may include moving abandoned drums to a proper disposal facility to prevent the release of hazardous substances into the environment. Removal actions may occur at National Priorities List (NPL) or non-NPL sites. The NPL is a list of hazardous waste sites identified by USEPA. USEPA considers each of these sites as needing further investigation into the risk they pose and whether cleanup of each site under USEPA's Superfund program is needed. An NPL listing does not promise remedial action, only detailed investigation. However, all of the PBS CERCLA Sites are non-NPL sites (i.e., not listed on the NPL). NASA has lead agency responsibility for the PBS CERCLA Sites, not the USEPA, but follows the CERCLA process.

1.2.2.2 Remedial Actions

Three other PBS CERCLA Sites (Fox Road Burning Ground, Snake Road Burning Ground, and Taylor Road Burning Ground) were former burning grounds, and one other site (Disposal Area 2A and 2B) was a disposal area. All four of these CERCLA Sites require remedial actions. Remedial actions are long-term cleanups designed to prevent or minimize the release of hazardous substances and to reduce the risk and danger to public health or the environment.

Remedial actions follow the remedial design phase of the CERCLA cleanup process and are a part of the actual construction or implementation phase of the cleanup. The remedial design/remedial action is based on the cleanup specifications described in the Record of Decision. **Figure 1-3** illustrates this process. An example of a remedial action is to remove hazardous material from groundwater using pump and treat technologies.

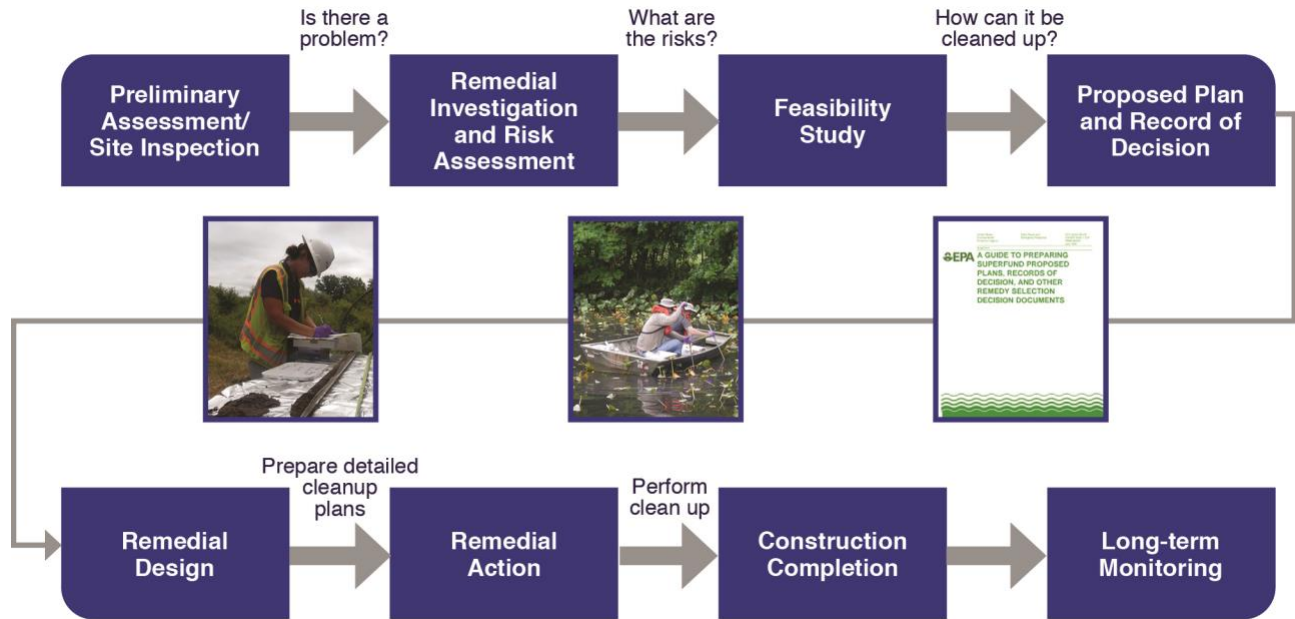


Figure 1-3. Remedial Actions under CERCLA

More information about the nature of the seven CERCLA Sites is included in Section 2.3.

1.3 THE COMMUNITY

NASA recognizes and appreciates the growing trust that it enjoys in this community. This CIP and its proposed activities are designed to ensure that NASA PBS staff maintain their positive relationship with community members in Erie County and surrounding areas and maintain the overall credibility of NASA PBS throughout the CERCLA process.

1.4 THE PLAN

This CIP recognizes and addresses the challenges presented by the diversity of the communities involved in the project and will focus on issues related to the seven identified PBS CERCLA Sites.

1.5 RESOURCES

This CIP is a blueprint for public involvement in the cleanup of the PBS CERCLA Sites. It is a companion to a number of site reports, plans, decision documents, and other sources of information that will be available for review at a later time. Because NASA does not have the information necessary to identify the precise timing of all activities and points for community involvement, this CIP will continue to evolve as the projects advance. Reference documents and relevant sources of information are listed at the end of this document.

2. SITE BACKGROUND

2.1 SITE DESCRIPTION

NASA PBS is located in southern Erie County, Ohio, approximately 3 miles south of Sandusky, Ohio, and approximately 50 miles west of the NASA GRC at Lewis Field in Cleveland, Ohio. Located on 6,740 acres in the Lake Erie community of Sandusky, PBS is home to four test facilities, which perform complex and innovative ground tests for the international space community.

The Space Environments Complex houses the world's largest and most powerful space-environment simulation facilities. One of these facilities is the Space Simulation Vacuum Chamber, which supported Mars lander system tests and rocket-fairing separation tests. The Reverberant Acoustic Test Facility is the world's most powerful spacecraft acoustic test chamber. This chamber can simulate the noise of a spacecraft launch up to 163 decibels or as loud as the thrust of 20 jet engines. The Mechanical Vibration Facility is the world's highest capacity and most powerful spacecraft shaker system. This facility subjects test articles to the rigorous conditions of a space launch.

The In-Space Propulsion Facility is the world's only facility capable of testing full-scale, upper-stage launch vehicles and rocket engines under simulated high-altitude conditions. The engine or vehicle can be exposed for indefinite periods to low ambient pressures, low background temperatures, and dynamic solar heating to simulate the environment of orbital or interplanetary travel.

2.2 PLUM BROOK STATION LOCATION

Most of PBS is located in Perkins and Oxford townships with some land in the Huron and Milan townships. All NASA PBS land is in Erie County. Station boundaries include Bogart Road to the north, Mason Road to the south, U.S. Highway 250 to the east, and County Road 43 to the west (**Figure 2-1**).

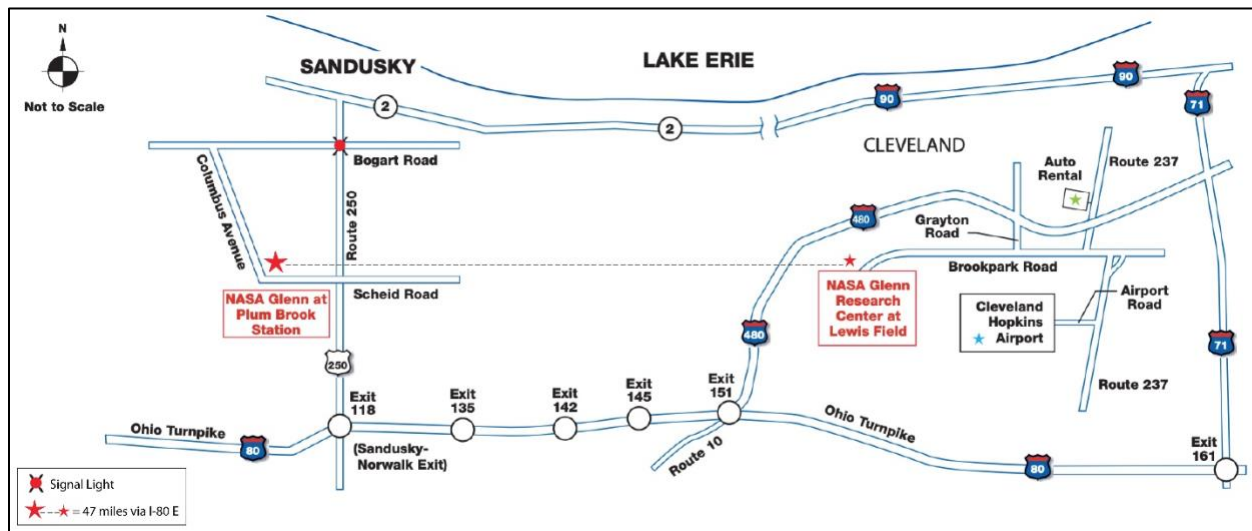


Figure 2-1. Plum Brook Station in Relationship to NASA Glenn Research Center at Lewis Field

An 8-foot security fence surrounds PBS, and several test sites have additional security fencing. Of the 125 permanent structures on the grounds, most are large, reinforced concrete bunkers that store materials, equipment, and records. An internal paved road system, totaling 62.5 miles, connects the buildings.

The security fence surrounds approximately 5,845 acres of PBS. Most of the land at PBS consists of forestland and old fields with several streams that run across the property. An estimated 75 percent of NASA's property at PBS is considered unused. Offices, test facilities, roads, and infrastructure occupy the remaining land.

Public access is restricted at PBS, though security personnel may grant access to the site at the security guard house on East Scheid Road. Armed guards staff the guardhouse 24 hours a day. The former main gate located on Columbus Avenue is only accessible by exiting employee traffic at peak afternoon hours and by Perkins Township Police and Fire Departments in an emergency.

During each 8-hour operating shift, a security guard patrols the inside perimeter road of the facility. Visitors and employees gain access by showing the guard a badge that authorizes entry.

2.3 SITE HISTORY

The history of PBS dates back to 1941 when the War Department bought about 9,000 acres of land to construct a munitions plant. The plant, then called PBOW, was named after the creek running through the site. PBOW produced munitions, such as trinitrotoluene (TNT), dinitrotoluene (DNT), and pentolite (MK 1994).

The ordnance works produced or stored other products, including nitric and sulfuric acid, and operated for 4 years from 1941 to 1945, the end of World War II (WWII). During production, the U.S. Department of Defense (DoD) estimates that PBOW manufactured more than 1 billion pounds of ordnance (NASA 2004).

By the end of 1945, the Army conducted decontamination and decommissioning of many of the buildings and structures associated with the manufacturing of ordnance. The Army estimated that it completed 65 percent of the decontamination of PBOW by December 1945.

Possession of the property was transferred to the Ordnance Department (an independent branch of the Army) in 1946, then to the War Assets Department, and finally to the General Services Administration in 1949 (USACE 2020). Decontamination processes either removed and salvaged or removed and burned all structures, equipment, and debris associated with the manufacture of explosives (PBOW 2013).

After WWII, the land remained idle until 1956, when the National Advisory Committee for Aeronautics (NACA, later known as NASA) bought 500 acres for the construction of a nuclear research reactor facility. NACA began to design and build a reactor at PBS in order to conduct nuclear research. The research was first related to airplanes and then to nuclear rockets (NASA 2004).

In reference to the photograph in **Figure 2-2**, NACA reported in 1956, "Workers dig up transit lines, flumes, and buried TNT at Plum Brook.... Despite claims that there would be no long-term damage to the land, by 1948 it became evident that the Plum Brook site had suffered considerable contamination. During the early 1950s, the land became a subsidiary of the nearby Ravenna Arsenal.... The NACA attempted to clean up the area in the mid-fifties. The United States Army Corps of Engineers is still working on the project today [1956]."



Figure 2-2. Workers Dig up PBS Transit Lines in 1956

NASA accepted approximately 6,000 acres of the facility in 1963 after Ravenna Arsenal certified that PBOW had been completely decontaminated and was suitable for unrestricted future use. After acceptance of PBOW, NASA identified further areas that required decontamination.

In 1962, NASA began operating the Reactor Facility, which included a 60-megawatt nuclear test reactor and a 100-kilowatt mock-up reactor under a license from the Nuclear Regulatory Commission. The Reactor Facility was located on 27 acres of land, surrounded by an 8-foot security fence. In 1964, NASA PBS continued site decontamination and structure removal.

In 1973, after successfully completing the lunar landing, NASA faced severe budget reductions, as voted by Congress. As a result, NASA deferred many of its longer-term research and development programs, pending the availability of funds. NASA ceased operations at several research facilities across the country, including those at PBS. One of the facilities shut down in 1973 was the Reactor Facility (**Figure 2-3**). The decommissioning of the closed Reactor Facility began in 1998, and workers demolished the last-standing structure of the 27-acre research facility on May 31, 2012 (NASA 2012).



Figure 2-3. NASA PBS Reactor Facility in 1981

By April 1978, NASA declared approximately 2,100 acres of the former PBOW as excess. NASA sold approximately 1,500 acres of excess land outside the security fence as farmland. For use as a bus transportation area, NASA also conveyed 46 acres outside of the fence to the Perkins Township Board of Education. This property was in the northeastern corner of the former PBOW facility near the former main gate guardhouse on Columbus Avenue.

In addition, the 2,152 acres of the former PBOW declared as excess included a 604-acre parcel in the western part of the fenced area known as Parcel 59. Parcel 59, although declared excess by NASA, was not transferred and remains under NASA control. However, three parcels have since transferred, including Parcel 4 (3.1 acres) in March 2016; Parcel 63, the Former Taylor Road Wastewater Treatment Plant (11.5 acres) in June 2016; and Rye Beach Pump Station (1.3 acres) in December 2014 (Erie County Auditor 2017).

In 1982, USACE and USEPA signed an Interagency Agreement that stated USACE would provide assistance to USEPA in executing CERCLA, also known as Superfund, actions. Under this agreement, USACE serves as program manager and provides technical assistance, contracting services and contract management, real estate, and other support functions. In 1984, Congress established the Defense Environmental Restoration Program (DERP) to evaluate and remediate contamination at both active sites and Formerly Used Defense Sites (FUDS) (USACE 2020). In 1994, USACE determined that PBOW was eligible for the FUDS program. A FUDS is property that was formerly owned, leased, possessed, or operated by DoD. That decision included PBS, and that CERCLA work continues today. The following website provides additional information: <https://www.lrh.usace.army.mil/Missions/DERP-FUDS-WVOW-PBOW-WVMA-/Plum-Brook-Ordnance-Works/>.

Currently, NASA operates PBS as a space research facility in support of GRC. Most of the 1960-era aerospace testing facilities at PBS have been demolished or are on standby or inactive status. Additional tenants at PBS include the U.S. Department of Agriculture, U.S. Department of the Interior, U.S. Geological Survey, Federal Bureau of Investigation, and Ohio Air National Guard.

2.4 CERCLA SITE CLEANUP

NASA uses CERCLA processes and environmental science to investigate how the seven PBS CERCLA Sites affect human health and the environment. NASA will use the information and data collected to determine the best response.

For each site, NASA will determine if a release of hazardous substances has occurred or if a potential exists for a release of hazardous substances. Based on current site conditions, NTCRA and remedial actions are the most appropriate responses, but NASA will use all available CERCLA response actions as necessary.

NASA will conduct the action to reduce media (e.g., soil or groundwater) concentrations to the applicable USEPA Regional Screening Levels. These actions aim to allow for later unrestricted reuse of the sites.

The seven PBS CERCLA Sites have a total acreage of approximately 97.5 acres. This total is made up of 40.5 acres inside the fence and 57 acres outside the fence. The seven PBS CERCLA Sites are identified by name and size, and then summarized below:

- NTCRA Sites
 - ECCL Firing Range (57 acres)
 - Firing Range 5 and Construction Debris Pile (1.5 acres)
 - Firing Range 3 and 4 (2 acres)

- Remedial Action Sites
 - Fox Road Burning Ground (17 acres)
 - Snake Road Burning Ground (4 acres)
 - Taylor Road Burning Ground (2 acres)
 - Disposal Areas 2A and 2B (14 acres).

2.4.1 Site 1: Erie County Conservation League Firing Range (57 Acres)

The ECCL facility has not been an active firing range since 2007. The ECCL Firing Range PBS CERCLA Site is not located within the 8-foot security fence of PBS. A perimeter fence was installed around the ECCL site to restrict public access in February 2019. The site is currently composed of a mixture of open flat, grassy areas and areas with heavy shrub growth with some deciduous trees and three ponds in the western portion. NASA cleared a majority of the shrub growth in early 2020 for removal action activities.

NASA’s cleanup of this site began in 2010 with a review of historical information and a Preliminary Assessment/Site Investigation. The assessment evaluated the potential for a release of hazardous substances and determined the next steps in the CERCLA cleanup process. As stated in the *2010 Preliminary Assessment of Erie County Conservation League* (SAIC 2010), the former facility included:

- A club house and adjacent garage;
- Three trap and two skeet fields;
- A 25-yard pistol range (east);
- A 50-yard pistol and rifle range (west);
- A high-power rifle range with firing benches at 100 and 200 yards, respectively;
- An archery range and elevated archery stand;
- A 250-gallon aboveground diesel storage tank on a concrete pad; and
- A shallow, man-made pond.

The pistol/rifle ranges consisted of a firing stand, earthen backstop (to contain bullets and fragments), and side berms (to contain ricochets). The trap range consisted of five shooting positions and one structure, the “traphouse,” from which the targets were thrown by a machine called a “trap.” Ammunition fired at the ECCL facility included standard ball shot and ammunition. Trainees used clay targets used at the trap and skeet range. However, the use of biodegradable “E-birds” occurred after 2002 (SAIC 2010).

The Preliminary Assessment states that unknown parties may have reclaimed some of the lead-impacted soils at the firing range in 2000. Another change in landscape evidenced in review of the aerial photographs of the rifle range came sometime after 2006. These photographs are included in the Site Investigation Sampling and Analysis Plan (SAIC 2011).

Activities included removal of shallow soil from the range floor and the entire western lateral berm. Structures previously located at the trap and skeet ranges were removed sometime between 2006 and 2010 (SAIC 2011). The club house and garage were demolished sometime between July 2012 and October 2015, based on review of more recent aerial photographs.

A car dealership constructed a business on the two adjacent parcels in 2016 between the ECCL CERCLA Site and U.S. Highway 250.

Based on the Hazard Ranking System, USEPA did not propose this site or any other site at PBS to be included on the NPL, so the next cleanup stage for this site is site characterization.

Investigators examined the remaining residues in the soil as potential sources of environmental contamination (**Figure 2-4**). Based on this investigation, NASA released the *Erie County Conservation League Firing Range Removal Site Evaluation Report* (Leidos 2020) for public review on May 4, 2020.



Figure 2-4. Soil Sample Collection at the ECCL Firing Range in 2019

A Notice of Availability was published in the *Sandusky Register* to invite stakeholders to view the document online or request by telephone or email a copy to be sent to them. The report describes the former ECCL Firing Range. It recommends NTCRA for polycyclic aromatic hydrocarbon- (PAH-) and lead-contaminated soil and sediment removal and provides the rationale for this recommendation (Leidos 2020). PAHs are a class of chemicals that occur naturally in coal, crude oil, and gasoline. PAHs also derive from clay targets used on trap and skeet ranges and are byproducts of incomplete combustion, which are the causes for the elevated presence of PAHs at firing ranges. NASA signed the *Action Memorandum for Erie County Conservation League Firing Range Removal Action* on July 23, 2020, in which NASA agreed to proceed with an NTCRA for the contaminated soil and sediment.

2.4.2 Site 2: Firing Range 5 and Construction Debris Pile (1.5 Acres)

Firing Range 5 and the Construction Debris Pile are located in the southeastern portion of PBS near the Space Environments Complex, formerly known as the Space Power Facility. The firing range and the construction pile became overgrown with small trees and brush, which were cleared in early 2020 in preparation for the removal action. Firing Range 5 used an earthen berm as a bullet impact area.

The majority of the Construction Debris Pile is crushed concrete and steel reinforcements (e.g., rebar). The debris pile also includes grit from a sand blasting operation and asbestos-containing material (**Figure 2-5**).



Figure 2-5. Construction Debris Pile Sandblasting Grit

Firing Range 5 was built in 1982 and used by private security staff for practice and yearly qualification tests until 1986 (URS 1996). The backstop consists of soil and is approximately 150 feet long and 8 feet high. Targets were located approximately 5 feet from the backstop. Shooting areas were set up at 75 and 150 feet. After use as a firing range, the area served as a disposal site. Workers deposited sandblasting grit, concrete rubble, reinforcing steel, and other construction debris along the front edge of the backstop, the southern edge of the range, and in front of the 150-foot shooting area (Leidos 2016a).

The Construction Debris Pile, generated in the late 1970s during modification of the Space Environments Complex, is approximately 8 feet high and covers approximately 1.5 acres (Leidos 2016a). A Preliminary Assessment/Visual Site Inspection Report identified the pile as “solid waste management units...Power Facility Rubble Pile.” (TechLaw 1998) (**Figure 2-6**).



Figure 2-6. Construction Debris Pile Rubble at Firing Range 5

During this CERCLA cleanup action, both the firing range and construction debris areas were investigated. NASA finalized the Removal Site Evaluation Report recommending an NTCRA for PAH-contaminated soil at the earthen backstop and construction debris interspersed with asbestos-containing material and lead-based paint in December 2019. On January 17, 2020, NASA announced in the *Sandusky Register* that the report was available for public comment for 30 days. NASA signed the *Action Memorandum for Firing Range 5 and Construction Debris Pile Removal Action* on July 23, 2020. An Action Memorandum documents the basis for determining the need for a removal action, identifies the proposed response, and explains how the removal action will address contamination at a site (USEPA 2020).

2.4.3 Site 3: Firing Ranges 3 and 4 (2 Acres)

Firing Ranges 3 and 4 are located north of and adjacent to a railroad spur near the south-central portion of PBS. These firing ranges were used since the mid-1960s, but are now inactive. The bullet impact areas for Firing Ranges 3 and 4 used the same blast protection wall used for rail car loading. Both ranges became overgrown with small trees and brush, and the blast wall has deteriorated. The small trees and brush were cleared in early 2020 in preparation for the removal action.

The railroad spur adjacent to these ranges was used for loading TNT onto railcars during the active operation of the PBOW from 1941 to 1945. A blast wall protected workers while they loaded and unloaded railcars with potentially explosive or highly reactive materials (e.g., munitions). The blast wall had a wooden exterior, typically 20 feet high, 12 feet wide at the base, and approximately 5 feet wide at the top. Soil filled the interiors of the walls to provide additional mass to deflect and absorb the force of a blast (URS 1996).

At Firing Range 3 the southern face of the former blast wall was used as a backstop, and the western side of the 150-foot-long blast wall was used for qualifying tests. After Firing Range 3 was abandoned, the other side of the blast wall was used as a backstop for Firing Range 4. Due to concern that bullets from Firing Range 4 could penetrate the decaying wall, NASA built a 20- by 20-foot pile of dirt in front of the southern face of the blast wall as a safety precaution. Thus, the back and target areas of Firing Range 3 were buried (URS 1996).

After multiple uses, much of the blast wall failed due to the large number of bullets that had been fired into it. The soil contained within the blast wall spilled out and collected on the ground surface. Workers shored up the southern side of the blast wall of Firing Range 3 with a pile of soil (Leidos 2016a).

Based on 2006 field observations, investigators identified an additional suspected shotgun range at Firing Range 4 (**Figure 2-7**). The type of range (e.g., trap or skeet) is unclear. The suspected range is immediately northeast of Firing Range 4 with Plum Brook flowing immediately through it (Leidos 2016a).

NASA finalized the Removal Site Evaluation Report recommending an NTCRA for antimony-, arsenic-, lead-, and PAH-contaminated soil (and the former wooden blast wall) at these sites in December 2019. On January 17, 2020, NASA announced in the *Sandusky Register* that the report was available for public comment for 30 days. NASA signed the *Action Memorandum for Firing Ranges 3 and 4 Removal Action* on July 23, 2020, in which NASA agreed to proceed with an NTCRA for antimony-, arsenic, lead-, and PAH-contaminated soil (and the former wooden blast wall).



Figure 2-7. Soil Sample Collection along Decaying Blast Wall of Firing Range 3

2.4.4 Site 4: Fox Road Burning Ground (17 acres)

Fox Road Burning Ground is located in the east-central portion of PBS, northeast of the intersection of Fox and Snake Roads. Fox Road Burning Ground is made up of forest and shrubland in the eastern portion and is a mix of a flat grassy area, mature trees, and heavy shrub vegetation in the western portion. A few soil piles and three independent wetlands are located in this area. These wetlands only temporarily hold water in the spring and early summer or after heavy rains.

Investigators have observed various types of waste, including wood, several empty rusted drums, drum bands, transformer insulators, broken glass, nuts, bolts, and gaskets, in this area. No buildings are onsite; however, the remains of a suspected maintenance area (large concrete slab and two shallow pits with steps) are located in the western area of the site (IT 1997, Leidos 2018a).

The *Site Inspection Report, Plum Brook Station* identified Fox Road Burning Ground primary burning ground and potential secondary burning ground features, current site feature are shown in **Figure 2-8**.

Historically, the Army and NASA used burning grounds to destroy or dispose of hazardous and non-hazardous materials. The Army used this site during the operation of PBOW from 1941 to 1945, and most decontamination efforts were performed at Fox Road Burning Ground from 1954 to 1958 (Sanders 1955, Dames & Moore 1995). The Fox Road Burning Ground also was used to decontaminate flume lines and destroy piping and other materials from 1963 to 1964 (Leidos 2016b).

The Army used burning grounds during the decontamination and decommissioning of PBOW (SAIC 1991). These grounds were used to destroy explosives-contaminated wastewater flumes, intermediate settling tanks, and catch basins from the TNT areas. This cleanup program assumes both the Army and NASA used the burning grounds.

In addition to being used as burning grounds, NASA documented the use of Fox Road Burning Ground as a landfill (SAIC 1991). Referred to as Disposal Area 1B, Fox Road Burning Ground is located to the north of the burning ground area, is accessible by a gravel road, and is approximately 5 acres (SAIC 1991). Disposal Area 1B was created by NASA in the 1960s and was not utilized by the Army. For the purpose of investigation and the CERCLA process, Fox Road Burning Ground includes Disposal Area 1B.

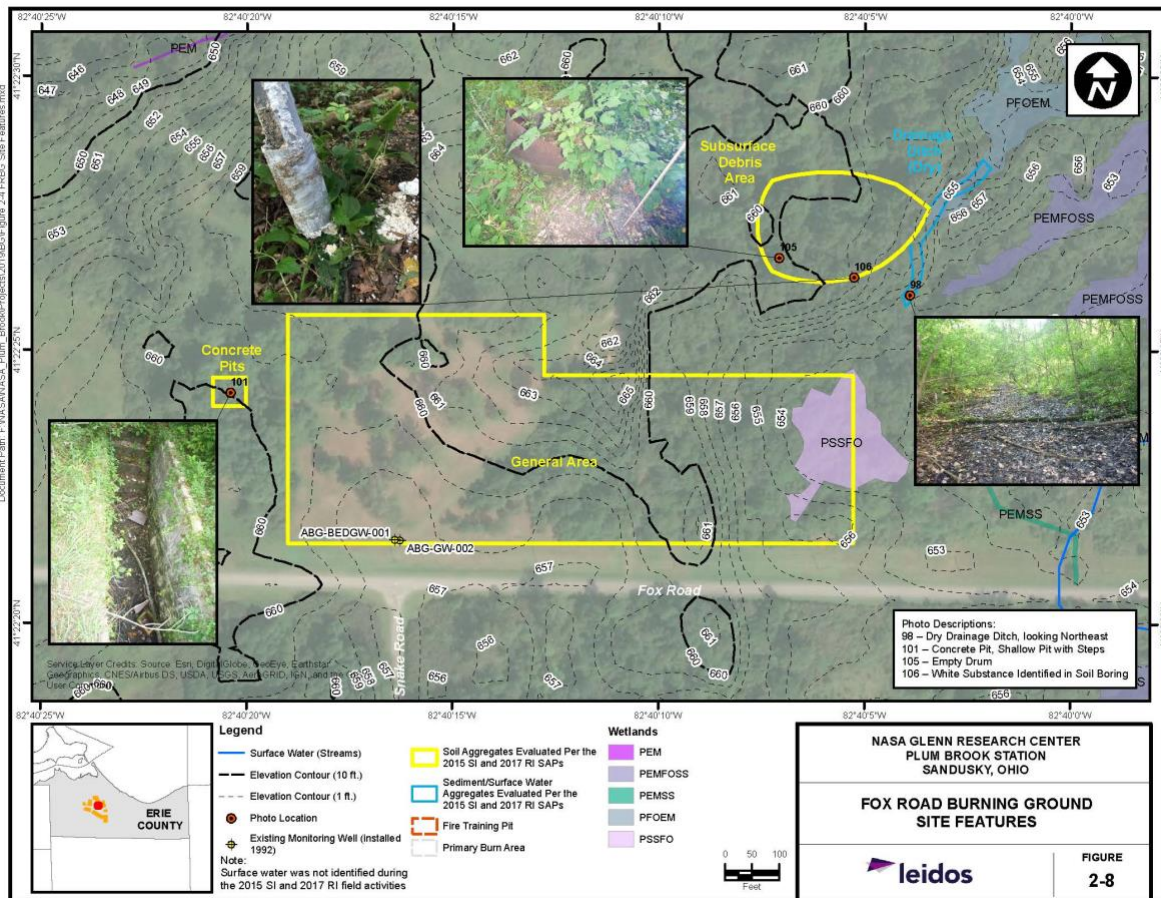


Figure 2-8. Fox Road Burning Ground Site Features

As part of the CERCLA process, NASA performed a multi-site investigation at PBS, which included Fox Road Burning Ground, in 2015; the results are summarized in the 2016 Site Investigation Report (Leidos 2016b). The primary objective was to determine the presence or absence of contamination at Fox Road Burning Ground. The Site Investigation concluded that chemicals were detected at the site and further evaluation was warranted in a Remedial Investigation.

A Phase I Remedial Investigation, completed in 2017, characterized the nature and extent of contamination, assessed potential impacts on groundwater, provided updated data, and evaluated risks to human health and the environment (Leidos 2018a). The Remedial Investigation concluded that Fox Road Burning Ground soils had been adequately characterized, and no risks to human health or ecological risk were identified. The Remedial Investigation recommended No Further Action to address chemical contamination within soil at Fox Road Burning Ground, and No Further Action was required for sediment and surface water, as these media do not exist at the site. The 2018 Remedial Investigation Report (Leidos 2018a) recommended a Phase II Remedial Investigation be conducted to collect and assess groundwater data at Fox Road Burning Ground. Investigators are currently performing the Phase II Remedial Investigation at Fox Road Burning Ground to determine a pathway forward for the site.

2.4.5 Site 5: Snake Road Burning Ground (4 Acres)

Snake Road Burning Ground is located west of current Snake Road and north of West Scheid Road. NASA rerouted Snake Road when they no longer needed the burning grounds. Snake Road Burning Ground is

currently a dry field with small, seed-bearing plants and four small wetlands scattered within the interior of the site. A drainage ditch is northeast of the former burn area at Snake Road Burning Ground and near Central Meadows, a plant management area, which is habitat for a rare plant species. Declared a state-threatened plant, this field sedge is named *Carex conoidea* and is shown in **Figure 2-9** (EnviroScience 2017). However, no rare, threatened, or endangered plants have been identified within the Snake Road Burning Ground investigative area. Investigative and remedial work will not impact this valuable resource.



Figure 2-9. Field Sedge (*Carex conoidea*)

(Photo Credit: <https://gobotany.nativeplanttrust.org/species/carex/conoidea>)

This site contains no existing structures but has cinder blocks and metal debris that includes a shredded steel drum, a steel drum lid, and steel posts. Investigators identified some asbestos-containing material among the debris at Snake Road Burning Ground.

Historically, Snake Road Burning Ground served two purposes: burning and fire training. The Army used two burn areas from 1941 to 1963 to destroy explosives. The volume of explosives is unknown, but the substances destroyed include materials contaminated with explosives (DNT, TNT, and pentolite) and asbestos. NASA used Snake Road Burning Ground as a burnable dump. NASA burned waste associated with decommissioning and demolition activities, contaminated or potentially contaminated with explosives or acids, at this site from 1960 to possibly mid-1970. NASA also used Snake Road Burning Ground for the burning of combustible non-contaminated solid wastes, such as rags, cardboard, and paper (H+GCL 1992). In the late 1970s, NASA removed ash from the burn pit and buried it near Line Road 16 and North Magazine Road. NASA then backfilled the pit at Snake Road.

NASA used the Fire Training Pit, which was built in the early 1960s on the western side of the site, to train onsite personnel during fire training exercises. Training included ignited waste oil, diesel fuel, and solvents, as well as other chemicals or materials, which were extinguished with either dry powder, carbon dioxide, or foam.

As part of the CERCLA process, the 2015 Site Investigation (Leidos 2016b) and a 2017 Remedial Investigation were completed to collect data to evaluate and determine the nature and extent of potential contamination at the site as well as risks to human health and the environment (Leidos 2018b). In 2015, NASA collected samples from soils at the site to determine the presence or absence of contamination in soils at Snake Road Burning Ground. Investigators also collected material samples to test for asbestos-containing material at Snake Road Burning Ground. The 2015 Site Investigation recommended No Further Action for asbestos and further evaluation of soils is a Remedial Investigation (Leidos 2016b).

To complete the Remedial Investigation part of the CERCLA process, additional soil samples were collected in 2017 to characterize the site. The Remedial Investigation identified polychlorinated biphenyl contamination within the burn areas that pose an unacceptable risk to human health. The Remedial Investigation also identified additional chemicals (cadmium, lead, mercury, silver, and DNT) that are driving risk to the environment. The nature and extent of potentially impacted media have been sufficiently characterized, and the Remedial Investigation recommended evaluation of soils in a Feasibility Study.

The 2018 Remedial Investigation also recommended a Phase II Remedial Investigation be conducted to collect and assess groundwater data at Snake Road Burning Ground. Investigators are currently performing the Phase II Remedial Investigation at Snake Road Burning Ground to determine a pathway forward for groundwater at the site.

Soils were evaluated in a Feasibility Study, which recommended a remedial action for soils at Snake Road Burning Ground. However, no final decisions have been made regarding the CERCLA pathway forward, as additional investigation is still in progress at the site.

2.4.6 Site 6: Taylor Road Burning Ground (2 Acres)

Taylor Road Burning Ground is in the west-central portion of PBS, southeast of Taylor Road and Ransom Road. It consists of heavily vegetated shrubland surrounded by a forested area with a wetland/wet weather ditch on the western portion of the site. Two drainage ditches (one west of the burn area and one to the northeast) are located at the site. A wetland runs south and intersects an access road on the eastern boundary. Another wetland is along the southern side of the access way just inside the site boundary.

Taylor Road Burning Ground was used by the Army and NASA. From 1941 to 1945, Army maps/drawings indicate that the burning ground was used for burning of rubbish/sanitary trash by the Army (Dames & Moore 1995). Taylor Road Burning Ground was utilized in 1955 for deactivation and decommissioning activities where more than 1,700 feet of wooden sewers were removed from TNT Area A and waste TNT was burned from decontamination efforts (Dames & Moore 1995). Documentation from the 1960s presented guidelines for disposal of industrial waste at PBS. Combustible wastes that were not contaminated with acids or explosives were to be disposed of at Taylor Road Burning Ground. Records state that Taylor Road Burning Ground was not to be used after 1995 (Dames & Moore 1995).

This former burning ground has no standing structures but has visible debris identified as metal fragments, debris, piping, and asbestos-containing material. The area encompassing the former burning ground is at a slightly higher elevation than the surrounding terrain. During operation, surface soil in the burning area was excavated and used to construct a 3-foot-high earthen embankment surrounding the burn area with a mesh chicken wire fence installed on top of the embankment. Taylor Road Burning Ground is identified in the map in **Figure 2-10**.

A multi-site investigation, which included Taylor Road Burning Ground, was performed at PBS in 2015. The results were summarized in a 2016 Site Investigation Report (Leidos 2016b). The objective of the Taylor Road Burning Ground Site Investigation was to determine the presence or absence of contamination at the site. Several chemicals were detected in soils at the site, and the Site Investigation made the recommendation for further evaluation of Taylor Road Burning Ground in a Remedial Investigation.

The Phase I Remedial Investigation activities were performed in January 2017 to complete a data set that fully characterizes the nature and extent of contamination and provides data to assess risks to human health and the environment. Asbestos-containing material was identified within the primary burn area at Taylor Road Burning Ground, and two polychlorinated biphenyls at the site pose an unacceptable risk to human health and the environment.

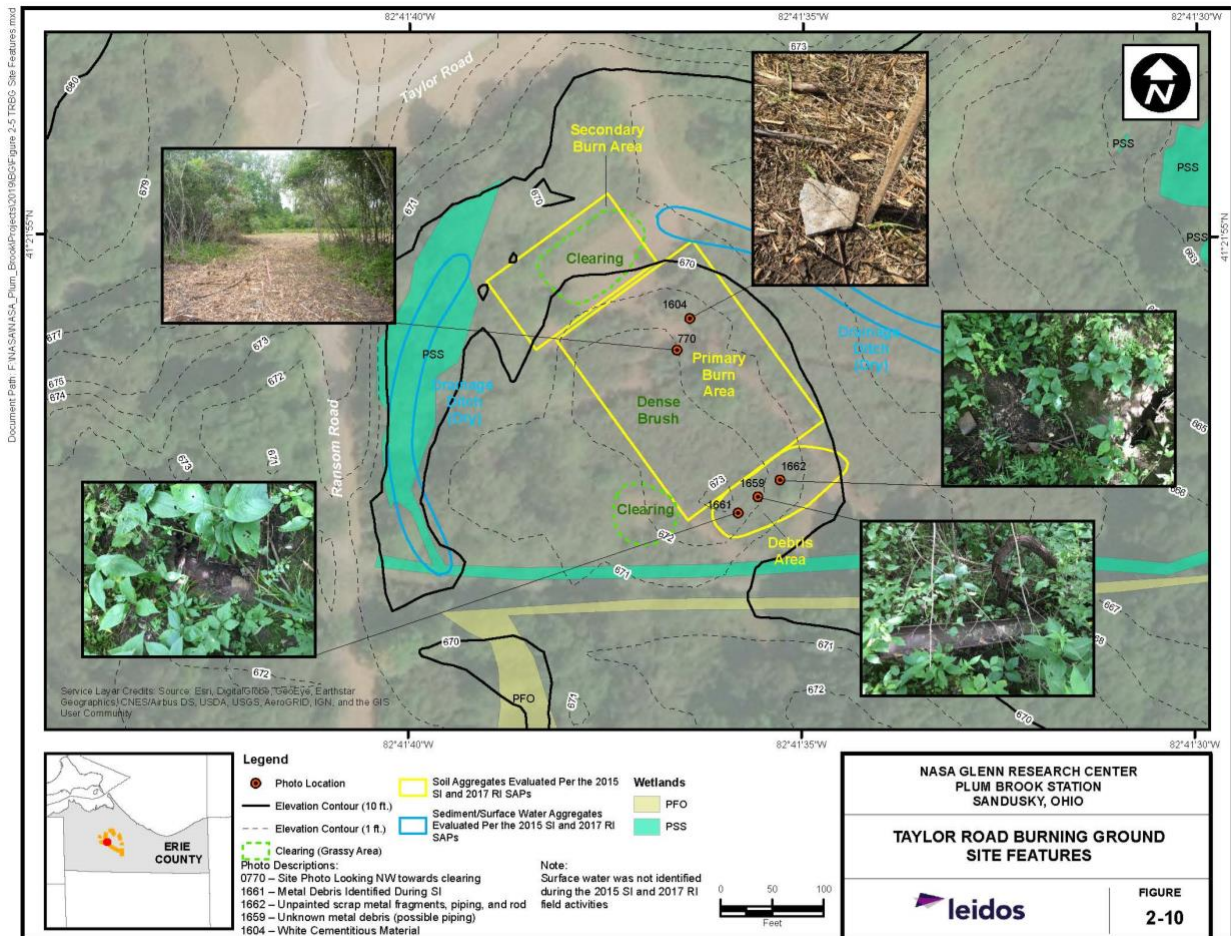


Figure 2-10. Taylor Road Burning Ground Site Features

The 2018 Remedial Investigation Report (Leidos 2018c) also recommended a Phase II Remedial Investigation be conducted to collect and assess groundwater data at Taylor Road Burning Ground. Investigators are currently performing the Phase II Remedial Investigation at Taylor Road Burning Ground to determine a pathway forward for groundwater at the site.

Soils were evaluated in a Feasibility Study, which recommended a remedial action for soils and removal of asbestos at Taylor Road Burning Ground. However, no final decisions have been made regarding the CERCLA pathway forward, as additional investigation is still in progress at the site.

2.4.7 Site 7: Disposal Areas 2A and 2B (14 Acres, Total)

Disposal Areas 2A and 2B, both located in the northwestern corner of PBS, potentially received hazardous wastes and served as storage sites for scrap materials. Disposal Areas 2A and 2B are partially covered with mixed deciduous trees, shrub, and scrub vegetation, and some clearing started in early 2020 (**Figure 2-11**).

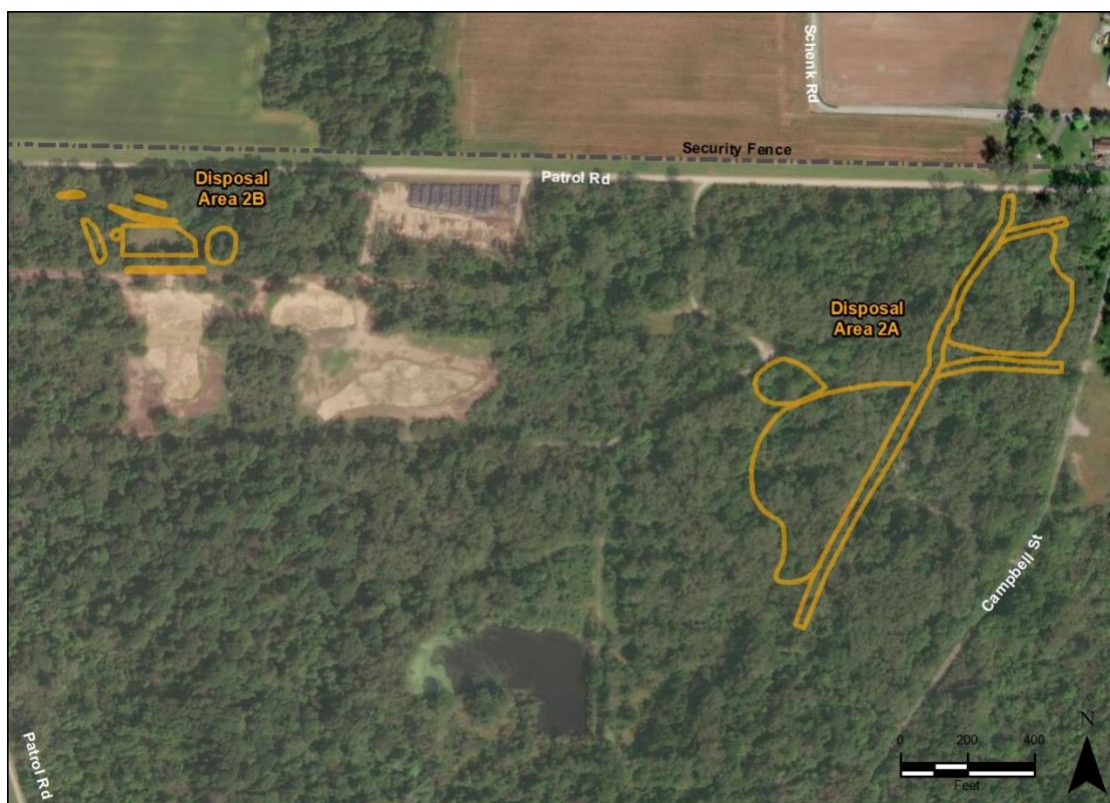


Figure 2-11. Disposal Areas 2A and 2B, September 2018

Disposal Area 2A—Based on historical data, investigators now know that Disposal Area 2A received waste from Wastewater Treatment Plant 2. That waste included ash, spilled wastewater, and construction or demolition debris. Disposal Area 2A has two former debris fields (East Debris Field and West Debris Field). The debris fields are located along either side of Pipe Creek.

Pipe Creek has a continuous flow in parts of its streambed year round during years of normal rainfall. East Debris Field has drainage ditches to the north and south of its boundaries. Small wetlands adjoin Pipe Creek and are close to the two debris fields. Both debris fields contain large concrete culverts and footers, building materials, metal rebar, brick, asbestos-containing material, piping, empty drums, and scrap metal, which remain in large piles in the fields.

Disposal Area 2B—Measuring approximately 1 acre in size, little is known about Disposal Area 2B. No facility records of historical operations at Disposal Area 2B or any documents indicating the disposal area received hazardous waste were found; however, Disposal Area 2B was also called the “Disturbed Area and the Former Parking Area.” NASA knows that this disposal ground received scrap cement and steel, utility poles, metal and polyvinyl chloride pipe, and scrap fence (SAIC 1991).

Investigators following CERCLA protocol recommend collecting laboratory analytical samples of soil and groundwater. Surface water and sediment are not known to exist at Disposal Area 2B but will be tested if discovered during the investigation. Investigators suspect a former drainage ditch just south of the Disposal Area 2B boundary. Investigators have looked at all potential sources of environmental contamination within this CERCLA action area. On April 29, 2016, NASA published the *Multi-Site Site Investigation Report* (Leidos 2016b), which presents the results and recommendations from the Site Investigation activities conducted in August 2015 at the sites, including Disposal Area 2A. No samples have been collected at Disposal Area 2B.

3. COMMUNITY BACKGROUND

3.1 COMMUNITY PROFILE

For the purposes of this profile, Erie County is identified as the region that PBS most directly influences; therefore, it is the primary focus for NASA's efforts in community involvement activities. This area is rural/agricultural, coastal, and urban. **Figure 3-1** shows the Erie County community.



★ Plum Brook Station; image from Google Maps.

Figure 3-1. Map of Erie County, Ohio

3.1.1 Plum Brook Station Characteristics

PBS is located 56 miles west of Cleveland, near Sandusky, Ohio, and is on 6,740 acres. A buffer zone of 2,600 acres of dense forest surrounds PBS. Most of PBS is located in Perkins and Oxford townships of Erie County, with some land in Huron and Milan townships to the east. PBS boundaries include Bogart Road to the north, Mason Road to the south, U.S. Highway 250 to the east, and County Road 43 to the west. **Figure 3-2** shows the boundaries of PBS and its orientation with surrounding townships.

An 8-foot security fence surrounds PBS. Several test sites have additional security fences. A total of 125 permanent structures are on the grounds. Of this total, NASA currently uses 99 large, reinforced concrete bunkers to store materials, equipment, and records. An internal paved road system, totaling 62.5 miles, connects the buildings.

The area immediately contiguous to PBS is mostly rural and agricultural. To the west, farmland borders PBS. In fact, NASA leases some land to local farmers. Of these nine townships, PBS lies in part of the Perkins, Oxford, Huron, and Milan townships.

Land use surrounding PBS and the seven CERCLA Sites is diverse. The surrounding area is primarily agricultural and rural, with urbanized pockets centered around the cities of Sandusky and Fairview and Perkins and Fairview Lanes townships.

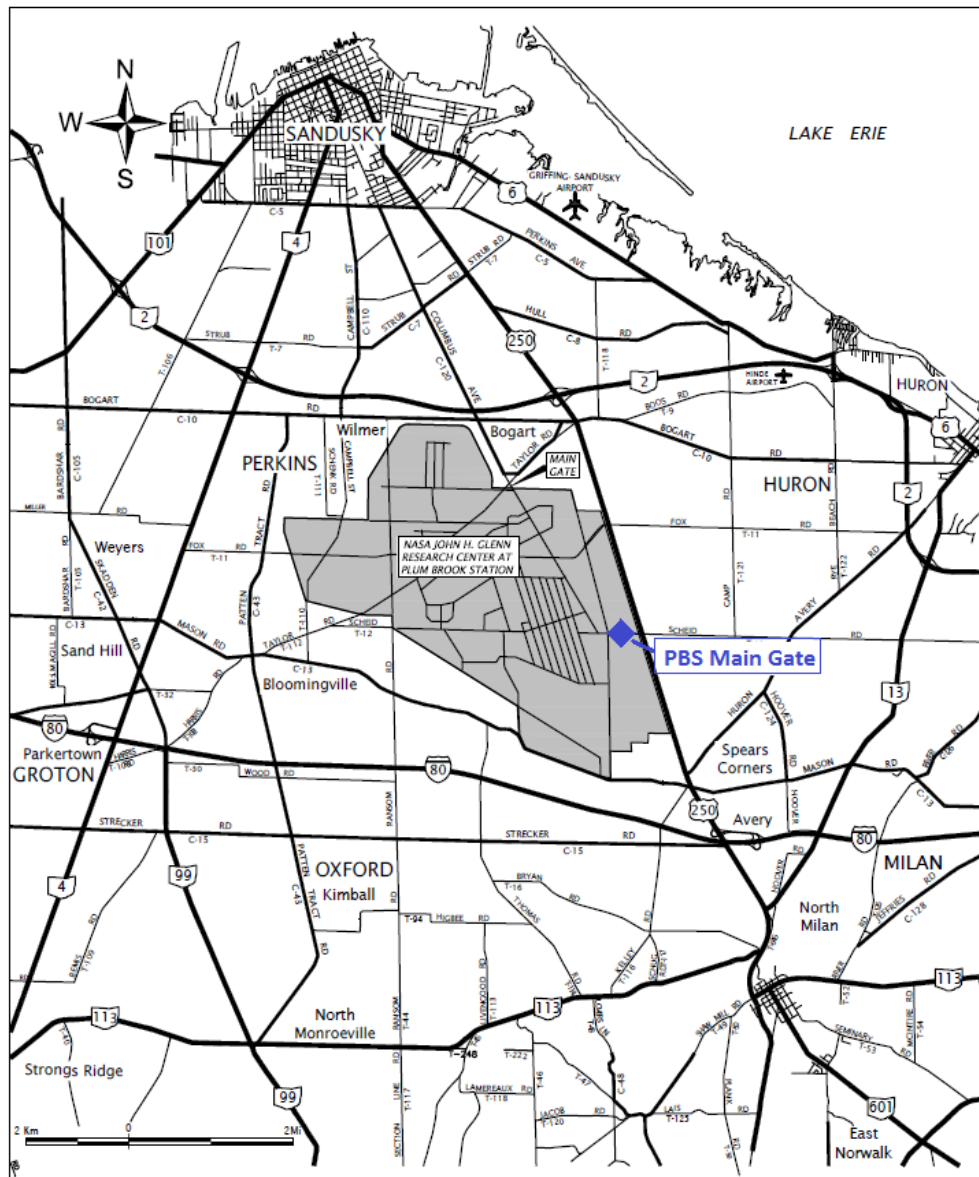


Figure 3-2. NASA Plum Brook Station Regional Map

The two largest cities nearby are Sandusky, located 3 miles northwest of PBS in Perkins and Huron townships, and Fairview, located 5 miles to the northeast of PBS in Huron Township. In addition, the villages of Kelleys Island (the largest U.S. island in Lake Erie), Milan, Bay View, Berlin Heights, and Castalia are located nearby.

3.1.2 Commerce and Industry in Erie County

The fishing industry, which helped form Sandusky in the 19th century, continues to operate today. Sandusky officials claim that their city is the “largest fresh water fish market in the world.” More than 50 percent of the county’s land is devoted to agriculture. The flat terrain and tempering effect of Lake Erie help to stabilize the growing season, making farming and fruit orchards important to the economy. Other typical crops include corn, wheat, soybeans, tomatoes, apples, and grapes. Erie County is also one of Ohio’s major

producing and exporting areas for certified and commercial field crop seeds. Dairy and meat processing facilities are located in the area.

Tourism—Approximately 25 percent of Erie County’s economy relies on the tourist industry. Erie County’s location on Lake Erie makes it a prime tourist area, which contributed \$2.1 billion in 2017 across Erie and Ottawa counties, according to the Convention Information Bureau in Sandusky, Ohio. Approximately 6 million people visit each year. Eighty percent of the tourists are from Ohio, Michigan, and Pennsylvania. Recreation in Erie County includes beaches, boating, fishing, wineries, museums, Kelleys Island State Park, and Cedar Point Amusement Park. The Merry-Go-Round Museum features a working vintage carousel with restored wooden animals. The Maritime Museum of Sandusky has exhibits on boatbuilding, shipwrecks, and ice harvesting.

Every year between the months of May and October, 3.5 million people visit Cedar Point. Workers also support visitors’ transportation, dining, recreation, retail, and lodging. One in four residents in Erie County work in tourism-related jobs, which produce wages of more than \$357 million annually. In turn, tourism directly generates millions of dollars in taxes, which benefit the local communities.

Industry—Manufacturing supports approximately 30 percent of the area’s economy. Three of the largest manufacturers in the area produce automotive parts components: Freudenberg-NOK, Ventra (Flex-N-Gate Corporation), and Tenneco Automotive. Other major manufacturers and significant employers in Erie County include American Colors; Lewco, Inc.; and Metal Tech. Other major industries in the area manufacture food processing equipment, paint, and pots and trays for horticulture.

According to the Bureau of Labor and Statistics, Ohio has lost 3,500 manufacturing businesses over the past 10 years. More than 48,000 jobs were lost as part of these closings. Kyklos Bearings International is one example of a manufacturing plant that closed in 2016 in Sandusky (township), which caused more than 500 people to lose their jobs. Other major sources of non-manufacturing employment in the Erie County area are the County of Erie, Firelands Regional Medical Center, and the seven districts within the Erie County school system (BLS 2020).

3.1.3 Employment and Income

Tables 3-1 through **3-3** depict historical trends in labor force, employment, and unemployment, respectively, in the region that PBS influences. From 2000 to 2018, the region experienced an average annual declining rate in the labor force of slightly more than -6.05 percent (from 3,928 to 3,191 jobs), except for Lorain County, which had a labor increase of 3.9 percent. The State of Ohio’s labor force, on the other hand, grew at an average annual rate of 0.2 percent (BLS 2020).

Employment in Erie County alone declined at an average annual rate of -11.5 percent, compared to the state increase of 0.04 percent. The six counties surrounding PBS experienced the highest unemployment rate (average 11.4 percent) in 2010, when the unemployment rate ranged from 13.2 percent in Huron County to 9.1 percent in Lorain County (BLS 2020).

Table 3-1. Historical Trends in Region of Influence Labor Force

County	Year*			
	2000	2010	2015	2018
Erie	42,130	40,163	37,334	37,757
Huron	30,703	30,287	27,596	27,814
Lorain	146,681	151,082	150,521	152,368
Ottawa	21,395	22,678	21,011	20,986
Sandusky	32,789	33,204	31,336	30,748
Seneca	30,929	29,460	27,127	27,129
Ohio	5,802,505	5,806,257	5,719,018	5,811,750

*Data collected in December of each year.

Source: BLS 2020

Table 3-2. Historical Trends in Region of Influence Employment

County	Year*			
	2000	2010	2015	2018
Erie	40,250	35,632	35,265	35,641
Huron	28,948	26,289	25,780	26,173
Lorain	142,440	137,293	142,125	144,148
Ottawa	20,256	19,881	19,622	19,663
Sandusky	31,352	29,627	29,826	29,352
Seneca	29,534	25,942	25,814	25,936
Ohio	5,572,462	5,255,372	5,440,497	5,574,862

*Data collected in December of each year.

Source: BLS 2020

Table 3-3. Historical Trends in Region of Influence Unemployment Rates (Percent)

County	Year*			
	2000	2010	2015	2018
Erie	4.5	11.3	5.5	5.6
Huron	5.7	13.2	6.6	5.9
Lorain	2.9	9.1	5.6	5.4
Ottawa	5.3	12.3	6.6	6.3
Sandusky	4.4	10.8	4.8	4.5
Seneca	4.5	11.9	4.8	4.4
Ohio	NA	NA	4.9	4.5

*Data collected in December of each year.

Source: BLS 2020

3.1.4 Population and Demographic Characteristics

City of Sandusky's estimated population is 24,564, according to the 2019 U.S. Census Bureau estimates. Sandusky is the 61st largest city in Ohio. Erie County's total population is 74,266.

3.1.5 Erie County

Data from the 2019 U.S Census Bureau show that more than 92 percent of the residents in Erie County are high school or higher graduates, which is higher than the national average of 88 percent. The data also show that the income average of \$52,270 in Erie County is approximately \$8,000 per year less than the national average of \$60,293. The percentage of minorities living in this area is slightly lower than is typical in the United States.

The U.S. Census Bureau data show that Erie County had 37,897 households in 2019. More than 87 percent of the people living in those homes have been there for at least 1 year. Eighty-seven percent of the people had computers in their homes. English is the dominant language, with fewer than 4 percent of persons speaking any other language than English. The per capita income in the past 12 months amounts to an average annual income of \$31,677 (in 2018 dollars) (U.S. Census Bureau 2020).

Low incomes affect fewer people in Erie County compared to the state. However, the Ohio Development Services Agency shows a slow rise in poverty in Sandusky over the past 10 years (OPR 2019). The agency explains the decline in income is due to job loss, seasonal or part-time employment, or households with only one income. Families headed by a full-time/year-round worker had poverty rates between 4 and 12 percent, while families without a full-time/year-round worker had poverty rates greater than 29 percent.

3.2 NASA'S IMPACT ON EMPLOYMENT

NASA influences the regional economy. In Fiscal Year (FY) 2018, NASA accounted for 7,185 jobs in Northeast Ohio, including the average employment of 1,572 of the civil workforce at GRC alone. Nearly 150 people are employed at PBS as of April 2020 (NASA 2020), including direct NASA employees; subcontractors; Test Facility Operations, Maintenance, Engineering Services HX5 Sierra, LLC (TFOME); visiting scientists; limited service employees; and others. Of this total, 95 percent of the persons were directly employed at PBS full time; 52 percent resided in Erie County and 48 percent resided in other locations outside of Erie County. Local businesses provide many of the services and much of the material consumed by PBS activities.

Secondary effects in Ohio include the state's value added increased by \$776.6 million because of GRC's activities. Approximately 7,600 newly created jobs support GRC work in Ohio. Taxes paid in relation to GRC work totaled more than \$119 million to Northeast Ohio and \$124 million to the State of Ohio. (Note: Labor income accounts for the income of all NASA GRC employees, both residents of the study area and those who live outside of the study area and spend only a portion of their income in the region [commuter spending]) (Lendel and Yun 2019).

In addition to its own employment, NASA GRC engaged 1,687 onsite or near-site contractors in FY 2018, and it peaked the highest engagement with local contractors during the last 5 years (**Table 3-4**). The civil sector employment decreased between FY 2014 and FY 2015 by 111 employees (-6.6%), but the local contractor employment has increased since FY 2015.

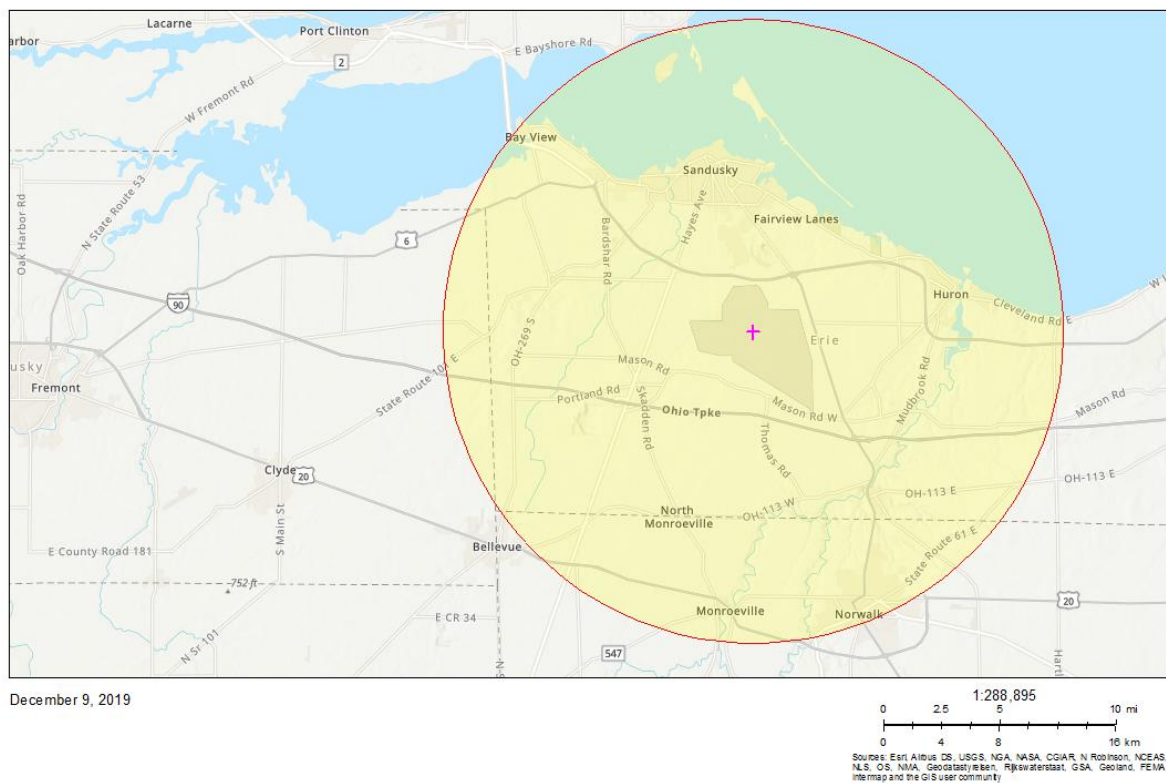
**Table 3-4. NASA GRC (Lewis Field and Plum Brook Station)
Onsite or Near-Site Contractors Employment
FY 2014 through FY 2018**

Year	Employment of Onsite or Near-Site Contractor Employees
2014	1,673
2015	1,562
2016	1,625
2017	1,626
2018	1,687

These counts do not include student trainees and temporary employees.
Source: Lendel and Yun 2019

3.3 ENVIRONMENTAL JUSTICE

In an effort to define a demographic profile, the PBS area was set as within a 10-mile radius of PBS (Figure 3-3).



+ Plum Brook Station

Figure 3-3. Map Showing 10-Mile Radius of PBS

The selection of this unit of geographic analysis was chosen so as to not artificially dilute or inflate the affected minority or low-income population. The definitions of minority, low-income, and minority and low-income populations are presented below:

- **Minority** – Individual(s) who are members of the following population groups as designated in the U.S. Census: Black or African-American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and Hispanic or Latino of any race.
- **Low-income** – The U.S. Census Bureau uses a set of income thresholds that vary by family size and composition to determine who is in poverty (i.e., classified as “low-income”). If a family’s total income is less than the family’s threshold, then that family and every individual in it is considered to be in poverty. The official poverty thresholds do not vary geographically but are updated for inflation using the Consumer Price Index. The official poverty definition uses money income before taxes and does not include capital gains or noncash benefits (such as public housing, Medicaid, and food stamps) (U.S. Census Bureau 2020).

Immigrant, low-income, and non-English speaking communities that may not have direct access to project information due to language and cultural barriers may require unique information about the NASA project. **Table 3-5** presents a comparison of information about the population of the PBS area. Based on the comments received from the CIP interviews, no specific populations have been identified as requiring accommodations. Going forward, NASA will continue to be aware of this possible requirement.

Table 3-5. Environmental Justice Screening

Demographics	PBS area	Ohio	Region	USA
Minority Population	18%	26%	25%	39%
Low-Income Population	33%	33%	31%	33%
Linguistically Isolated Population	1%	1%	2%	4%
Population with Less Than High School Education	9%	10%	10%	13%
Population under Age 5	6%	6%	6%	6%
Population over Age 64	19%	16%	15%	15%

Sources: USEPA 2019, U.S. Census Bureau 2020

3.3.1 Technical Assistance Support

Demographic distinctions are helpful in understanding how community involvement needs and activities may need to change over time. For most CERCLA Sites, informal technical assistance provided directly by the site team as part of the overall community involvement effort is sufficient to address the community’s needs. However, as more is known about these seven NASA CERCLA Sites, the needs of the community may change. If the Erie County community has unmet technical understanding needs, the community itself may consider requesting technical and financial assistance from the government.

Funds are available to help communities navigate complex scientific issues, data, and documents. Groups or individual stakeholders who cannot effectively take part in a dialogue about difficult environmental decisions because they do not have sufficient suitable and timely technical or financial assistance or personal time to research the issues may request help. Additional information about technical assistance services is included in Section 4.2.

3.4 COMMUNITY INTERVIEWS

Community interviews are an essential element of the process for developing a CERCLA CIP. These interviews are a way to meet with community members and learn about their site-related needs, concerns, and expectations, as well as how the community would like to receive site-related information from NASA.

Members of the CERCLA site team, including NASA local and headquarters staff, community involvement specialists, and contractors, were a part of developing the objectives for the interviews and forming the contents of this CIP. In these planning stages, NASA determined that the Paperwork Reduction Act of 1980 (44 United States Code 3501 et seq.) would apply to this effort. The Act restricts the government from asking identical information from 10 or more public respondents without an approved evaluation.

In order to comply with the terms of the Paperwork Reduction Act, NASA directed the CIP development team to collect interviews from fewer than 10 people. The team used the interview format available in the *Superfund Community Involvement Handbook* (USEPA 2016). Interviewers asked participants questions in a conversational style along the lines of the interview form included in **Appendix B**.

3.4.1 *Identification of Specific Audience Groups and Stakeholders*

Despite the limited number of participants, NASA aimed to represent stakeholder interests in the NASA PBS CERCLA Sites to comprise a broad range of individuals and groups, including:

- Employees of NASA PBS;
- Environmental groups;
- Business, labor, or agriculture groups;
- Residents and landowners;
- Elected officials and government agencies; and
- Former members of the PBOW RAB.

3.4.2 *Impact of COVID-19*

The interview period occurred when public gatherings were forbidden and most business and industry facilities were closed to impede the spread of the coronavirus, COVID-19. The worldwide pandemic, which escalated dramatically during the months when interviews were conducted, upended most of American life, and an atmosphere of focus on individual and communal health likely diminished the stakeholders' interests in NASA and environmental cleanup as a topic. Social distancing requirements dictated the closure of most offices, and people were difficult to locate. Face-to-face meetings were prohibited by the Governor's Orders for the State of Ohio. Reaching stakeholders directly by telephone when workplaces and telephone numbers had changed lengthened the process. The public reporting and recordkeeping burden for this collection of information averaged between 90 to 120 minutes per response. The time with each of the nine interviewees, however, averaged less than 20 minutes. All of the interviews and their responses are included in **Appendix C**.

By late March, COVID-19 sequestration significantly affected survey progress. Ohio Governor Mike DeWine, at the recommendation of the Ohio Department of Health Director Amy Acton, M.D., issued a mandatory order requiring all Ohioans to stay in their homes to prevent the further spread of COVID-19 beginning on March 23, 2020. On April 7, 2020, the Centers for Disease Control and Prevention (CDC) recommended that Americans wear cloth face coverings (masks) in public to help slow the spread of COVID-19 when they left their homes for essential services. Businesses were not answering their

telephones and owners or operators who did answer reported levels of stress, lack of trust, and distraction that inhibited their willingness to participate.

By April 25, 2020, approximately 753 Ohioans had died from the pandemic or its related causes. At that time, Lorain County had 406 confirmed cases of COVID-19 and 20 deaths and Erie County had 52 confirmed cases and 3 deaths. Many Ohioans also had to worry about whether they were going to make it through this period financially because so many had lost their jobs or their hours had been reduced. Interviews attempted during the month of April were particularly difficult.

3.4.3 Community Interviews

Interviews with the Erie County community began in early March 2020 when Americans were just beginning to adjust to the new COVID-19 requirements. Everyday life was changing for Ohioans when the survey requests first went out. Closed businesses, shuttered schools, social distancing, and the threat of COVID-19 itself were novelties that people were considering then as a short-term reality.

Employees—March interviews to current NASA-contractor employees were planned via email invitation 1 week; two were executed by telephone the following week. The two employees interviewed had positive feedback about NASA in the community, provided a long-term history of their experience at the site, and gave a picture of growing trust in NASA’s communications. One employee works full time for a NASA subcontractor, TFOME, and has worked for 33 years as a records management clerk. The other is a retired high school science teacher who serves NASA as a part-time consultant and advises and directs the ecological restoration and environmental management at PBS, specifically addressing those issues concerning prairie conservation practices.

Special Interest Groups—Individuals who represent organizations with concerns for the environment also were willing to engage. An almost immediate response came from a USACE RAB member and now Ohio Prairie Association president, John Blakeman, the aforementioned part-time employee to NASA. Mr. Blakeman claims to know from his long association at PBS “every square inch of the site” and to understand “its history and science as well as anyone.” He describes PBS as a “phenomenal place, ecologically” because of the pristine, unaltered prairie conditions. Eric Dodrill represents the Erie Conservation District Board of Supervisors and serves the Erie Soil and Water Conservation District. Though not an official member of USACE RAB, Eric attended several RAB meetings and has a working knowledge of CERCLA community involvement from that experience. Both interviewees said they would be interested in reviewing the final decision documents to provide analysis and recommendations or comments to NASA.

Businesses—The survey team reached two businesses for this survey: project manager Sarah Ross, who represents the Erie County Economic Development Corporation (ECEDC), and Jeffery C. Huber, a banker and the cofounder of Friends of NASA Plum Brook (Friends of PBS). ECEDC is a 501 (C)(3) private non-profit that aims to lead economic development in Erie County by providing assistance to business and industry, realtors, builders, and local communities in an effort to maintain and improve the area’s economic base. Ms. Ross expressed that she is willing to be a representative of business interest in Erie County in RAB and would be interested in a NASA CERCLA Sites outreach presentation at an ECEDC meeting.

According to their Facebook page, Friends of PBS is a group of local residents who update readers on events and activities involving NASA PBS. Friends of PBS asserts that NASA PBS is a national treasure for testing of spacecraft and launch vehicles and seeks to inform others how this facility benefits their local north-central Ohio economy. Mr. Huber said that people in the PBS area generally “are aware of the history of the site back to WWII,” but that most people trusted NASA to do the necessary cleanup.

Neighbors—The telephone survey team obtained good results in reaching neighbors whose properties border PBS. The team contacted two neighbors whose properties adjoined PBS. One neighbor, Duane Galloway, is a practicing lawyer and former science teacher. In the many years he has lived alongside PBS, he has seen the deconstruction of the reactor and witnessed “back when the streams ran red from dynamite.” Mr. Galloway believes that the site is much different now and that NASA is making great strides in being transparent with the community. Like everyone interviewed, he felt NASA had addressed his concerns. Lee Yeckley, another long-time PBS neighbor who served on the USACE RAB for 20 years, most recently with John Blakeman, describes himself as elderly and unable to participate in the USACE RAB at this time. He is unable to attend RAB or public meetings or go to the library for information about the site. However, Mr. Yeckley, like three others of the nine interviewed, said he would prefer to read about the sites in the newspaper than online. He does not own a computer or cellular telephone.

Representatives—The survey team tried to interview elected officials for 5 weeks. The survey team sent emails daily and repeated telephone calls to six Ohio State officials and representatives, seven county commissioners, four mayors, and seven trustees. Messages left with aides and assistants may have been ignored, but the team surmises that the requirements of their elected communities in virtual meetings, telephone calls, and other communication made the future concerns of an environmental cleanup at PBS disproportionately low in their priorities of other pressing pandemic responsibilities at the time. However, the team obtained interviews with two elected officials: Steve Shoffner, Erie County Commissioner, and Barbara Sessler, Erie County Recorder. Neither of these officials had heard of the designation of CERCLA Sites at PBS and both were interested in learning more. Commissioner Shoffner requested both technical and summary information and Ms. Sessler stated she preferred to receive summary information. Both individuals requested to be added to the mailing lists. Ms. Sessler commented that NASA is a trusted member of the community with the reason: “NASA would take concerns seriously. They have an interest in the community and it’s to their best interest to listen to the community.”

3.5 KEY COMMUNITY CONCERNS

NASA PBS has long been a mystery and sometimes an alarm to neighbors of the site, primarily because the work during WWII was before contemporary environmental protection measures were practiced and the work itself was classified and could not be explained. Two neighbors and one Sandusky native mentioned “creeks running red” during the days of TNT burns. One interviewee said that when he was a teenager, he knew his uncle and father worked there during burns and could tell something of their work when they came home smelling of smoke. However, he stated that no mention was made at that time about what the operations were meant to achieve. He and his friends would drive around and speculate with “wild stories” that he now knows were not true.

Clarification between NASA PBS CERCLA cleanup and USACE cleanup of PBOW sites needs to be made clear in community communications. Many people lump all cleanup activities together when, in fact, each site’s requirements for remediation (cleanup) are distinctly different as are their locations. With careful community outreach, NASA’s PBS CERCLA Sites will not be confused with USACE’s cleanup of former TNT manufacturing areas or Red Water Pond areas at PBOW.

The need for remediation at the firing ranges was clear to most of the community interviewees. One interviewee, who used to coordinate range use for police departments to practice at the ECCL, remembered that when the firing range was closed in the 1970s, owners projected that a cleanup would be necessary. She had “wondered if it would ever happen.” Another interviewee himself used a firing range when he was on duty as a police officer, though not at one of these PBS CERCLA Sites. He understood, as an engineer now, the need for cleanup and saw such a cleanup as a straightforward process.

One representative from the environmental group, the Ohio Prairie Association, praised NASA’s conservation through controlled burns. John Blakeman said, “I’ve found two species of prairie plants that

were thought to be extirpated in northern Ohio, but after the burns, they came back. We have three main oak savannahs that are world class.... And it is so appropriate that NASA is managing them with environmental quality.” A few general concerns expressed by young stakeholders centered on the need for an open and meaningful process of community involvement. Issues include a need to provide input on a variety of issues in multiple ways, a desire for basic information, and the belief that outreach should include a broad range of stakeholders while still retaining the function of the USACE or NASA RAB.

The only specific concerns expressed by the community at this time were community health, the local economy, and jobs. Concerns for this cross-section of the community did not include the effects of this project and its cleanup activities on regional agriculture, the environment, road congestion, tourism, recreation, and archaeology. Two interviewees of the 2020 CIP interview effort had specific compliments to pay to Director of Plum Brook Station David Stringer regarding his open communication and the transparency he endorses onsite. During a June 2019 public meeting, the general explained why he was there, “We show people how citizens’ money is being used. Obviously, as NASA folks, we think this is very compelling, but it’s helpful for people paying the bills, as all of us do with taxes, to see what you get for it.” **Figure 3-4** shows an example of this communication in action.



Photo credit: Akron Beacon Journal

Figure 3-4 Director of Plum Brook Station David Stringer Speaks to a Local School Group

3.6 NASA’S RESPONSE TO COMMUNITY CONCERNS

NASA has been committed to CERCLA environmental remedial activities for decades and has been proactive in improving relationships with the community, conducting community outreach, and setting the course for involving this community in decision-making (GRC 2020).

NASA has already:

- Hired an impartial remediation contractor to begin site investigations and to **research, develop, and implement a community involvement plan.**
- **Invited public comments** and invited input on the recommended NTCRAs of three sites as of the publication of this CIP.

- **Pulsed the public's general interest in** a NASA RAB and other outreach roles via the interviews given to people with the USACE RAB and others who knew of it. See interview responses in **Appendix C**.
- **NASA has opened the doors of PBS in the past** for community involvement during other remediation projects. Efforts included USACE RAB participation, site tours, regular community outreach meetings, outreach materials, and an online presence for other cleanup projects. Some good groundwork has been laid for community outreach in place.

4. NASA'S COMMUNITY INVOLVEMENT PLAN

4.1 COMMUNITY INVOLVEMENT GOALS

NASA is committed to involving the public in the cleanup of the seven CERCLA Sites at PBS. NASA established the following goals for the overall community involvement program:

- Provide the public with accurate, timely, and understandable information and/or access to the information needed to understand the projects as they move forward;
- Provide the public with the opportunity to give informed and meaningful input;
- Ensure adequate time and opportunity for the public to provide input;
- Give full consideration to community input with inclusivity; and
- Assist the public in understanding the project decision-making process during project design and cleanup and the community's role in that process.

Community involvement goals and needs must be considered and balanced with the project's technical and scientific requirements. To date, NASA has focused its community involvement efforts on getting public input on the issues that are most important to community members and organizations.

4.2 COMMUNITY INVOLVEMENT TOOLS AND ACTIVITIES

NASA may use a variety of tools to reach and engage the community. Examples include public meetings, open house poster sessions, fact sheets, press releases, invitations for public comments on proposed plans for cleanup, a website, mailings, public information meetings, local information repositories, paid advertising, public access television recordings, and videos of site-related work, among others. Not all of the community involvement tools and activities identified in this section will likely be required, but they are listed here for the consideration of present and future requirements. The objectives of these tools and activities generally fall into one or more of four categories:

- **Input** – How NASA receives information from the public.
- **Output** – How NASA shares information with the public.
- **Outreach** – How NASA promotes education and awareness about the project.
- **Involvement** – How NASA encourages public participation in the project.

NASA will continue its commitment to an effective and participatory community involvement effort throughout the cleanup process.

NASA's Input Tools and Activities

Public Poster Sessions

Description—Public poster sessions are effective, informal sessions open to the general public. They feature posters, displays, and one-on-one interaction between NASA staff and individuals from the public. These sessions present detailed information in understandable terms and allow individuals to inquire about issues that most concern them. They provide each citizen a chance to speak freely to NASA personnel and contractors on a relaxed, equal basis. Public sessions do not require the use of court reporters and transcripts, although meeting summaries may be prepared.

Goal—The goal of these sessions is to educate the public on important project issues and to enable community members to ask questions in a comfortable and informal setting. Public posters sessions also provide NASA with feedback from the community and can uncover issues not fully understood by the community.

Method—Sessions are conducted as needed at convenient times and places. Whenever possible, public notice is given at least 2 weeks before scheduled public poster sessions. Sign-in sheets are available at the entrance and can serve as a sign-up for the mailing list.

Public Meetings

Description—Public meetings are structured, formal meetings open to the general public, featuring a presentation and interaction with the public. Formal public meetings may involve the use of a court reporter and the issuance of transcripts. Formal public meetings are required only for a Proposed Plan and Record of Decision amendments. A “public briefing” is required upon completion of the remedial design. For the PBS CERCLA Sites, NASA will meet the minimum requirements by holding public meetings on key project decisions or issues, such as the remedial design and engineering performance standards.

Goal—Public meetings are opportunities to update the community on site developments and address community questions, concerns, ideas, and comments.

Method—NASA schedules, prepares for, and attends all announced meetings. Whenever possible, public notice is given at least 2 weeks before scheduled public meetings. Sign-in sheets are available at the entrance and can serve as a sign-up for the mailing list.



See **Appendix F** for suggested meeting locations.

Email

Description—Anyone can use email to contact NASA representatives for information or to ask questions about these sites.

Goal—This provides another method to help citizens provide input or request information.

Method—Email the **NASA PBS CERCLA Office** at grc-restoration@mail.nasa.gov.

or NASA’s Community Involvement Coordinators for the sites at:

- John Brodt at john.p.brodt@nasa.gov or
- Antoine Moss at antoine.d.moss@nasa.gov.



For NASA contact information, see **Appendix D**.

Mailing List Expansion

Description—NASA has an existing mailing list of individuals, businesses, and organizations that was generated when security fencing was needed at the former site of the ECCL firing range. NASA will solicit additional mailing addresses from community members interested in the PBS CERCLA project.

Goal—Mailings effectively communicate project and event information to a specific, interested audience. They provide information to community members who do not purchase newspapers, use computers, or have access to the Internet.

Method—Methods for increasing the mailing list will include direct solicitation when people attend public meetings or contact community involvement coordinators. It will increase with coordination with elected officials using constituent mailing lists. Sign-up sheets at public meetings, public poster sessions and festivals, and contact with community-based organizations are all opportunities to invite the public to sign up.

Community members on the mailing list should notify the NASA PBS CERCLA Community Involvement Coordinators of any changes to their mailing address.


 For NASA contact information, see **Appendix D**.

Public Comment Period

Description—This is a formal opportunity for community members to review and contribute comments on various NASA documents or actions. Under CERCLA, 30-day comment periods are legally required for Proposed Plans and Engineering Evaluation/Cost Analyses (also called Removal Site Evaluations). For the PBS CERCLA Sites, NASA will likely go well beyond these minimum requirements by holding comment periods on key design issues. NASA may develop an online repository and provide hard copies of the documents upon public request given the pandemic restrictions on library usage in Ohio.

Goal—Comment periods provide people with the opportunity for meaningful input in the process and provide NASA with valuable information for use in making decisions.

Method—NASA announces comment periods with newspaper postings, listserv (email list software) notifications, and NASA fact sheets to ensure the public understands what is being presented. Communications will describe when comments will be accepted, how long the comment period will be open, and how to submit comments.

 See **Appendix E** for regional newspaper contact information.

Public Input

Description—Letters and informal discussions with NASA staff are among the ways the public and NASA can communicate about the project. NASA wants to understand the public's concerns so they can be addressed.

Goal—Verbal comments and letters allow continued opportunity for the public to give input and, consequently, allow NASA to recognize trends in issues of public concern and identify areas that require more information or clarification.

Method—Informal comments can be offered at any time, such as during public poster sessions, open houses, community visits, and workshops. Written comments may be submitted by mail or via email.

 See **Appendix D** for mail list and other contact information.

Surveys

Description—NASA will consider conducting print, telephone, or social media surveys to solicit feedback and may initially conduct interest surveys of existing USACE RAB members.

Goal—Surveys allow NASA to continue to identify and update community concerns and issues along the entire site.

Method—Random surveys may be used as necessary, particularly in segments of communities that have questions and concerns about the project but that have not necessarily had much access to other community involvement activities.



See **Appendix D** for NASA contact information and **Appendix E** for media contacts.

NASA's Output Tools and Activities

NASA's Websites

Description—Internet access to major technical reports and updates on the PBS CERCLA project site will be available on NASA's PBS Restoration website: <https://www1.grc.nasa.gov/PBS-Restoration>. Other sources of information are available through the USEPA homepage at www.epa.gov and through links to the website.

Goal—NASA's PBS Restoration website provides key resources for accessing general and site-specific information about the sites and CERCLA. Access to NASA's website is available through home and public computers at public libraries throughout the Erie County area.

Method—NASA will post updates and major technical reports, generally within 2 business days of their release. Notice of all public meetings, forums, and public poster sessions and announcements related to the project also will be posted. The website will continue to be updated and enhanced regularly so that users can easily search for information.

NASA also will provide links to important project-related information posted on other sites as that information occurs.

Fact Sheets

Description—Fact sheets, sometimes called site or project updates, are brief documents written in plain language, often containing user-friendly graphics and illustrations, to help residents understand highly technical reports, concepts, and information. They also update readers to the schedule of the projects' progress.

Goal—Fact sheets provide site-related information in an easy to understand format.

Method—Fact sheets will be produced throughout the project design and cleanup process to promote understanding of the individual elements of the remedy. Fact sheets will be available at public forums and may be distributed to individuals and organizations on the mailing list.

Information Repositories

Description—Information repositories are local public buildings, such as libraries, universities, or government offices, where site-related and supporting documents are available for review. Information repositories have public-use computers that provide access to additional information. As required by CERCLA, repositories also house the full Administrative Record as hard copies for people who prefer to read information in that format.

In January 2000, NASA established a Community Information Bank (CIB) at the Bowling Green State University (BGSU) Firelands Library. The CIB served as a permanent repository of information on NASA's decommissioning of the GRC Reactor Facility. The CIB remains in place and is managed by BGSU Library Director, Leo Mallias. Mr. Mallias confirmed on November 26, 2019, that the CIB can accommodate PBS CERCLA site documents. Continuing the use of this asset for the PBS CERCLA Sites information repository makes sense: the community is familiar with it and it is in place. As a CERCLA requirement, an online repository also may be required given the pandemic restrictions on library usage in Ohio.

As an example of its use, NASA will place the draft CIP in the CIB at the information repository at BGSU Firelands Library and announce that news in the *Sandusky Register* in order for the public to review and comment on this CIP.

Goal—Information repositories provide accessible public locations where residents can read and copy official documents and other pertinent information about the site, NASA activities, and the CERCLA process.

Method—NASA will initially maintain one information repository at BGSU Firelands Library. NASA will continue to add documents as they become available, beginning with this CIP. All repositories have printed copies of major documents. Contact information for adding documents to the repository:

- Leo Mallias, BGSU Firelands Library Director
Telephone: 419.372.0681. Email: lmallia@bgsu.edu



See **Appendix G** for a descriptive listing of information repositories.

Maps and Visual Aids

Description—Maps and visual aids help people understand the geography of the site and the locations of activities and resources.

Goal—The objective of using visual aids is to communicate complex issues effectively.


Method—NASA regularly uses maps, photographs, and other visual aids in documents and fact sheets, at public sessions, and on the website.

Media Distribution/Media Events

Description—NASA may provide updates and information to key local newspapers and radio and television stations and encourages them to further distribute this information on a regular basis. NASA representatives provide information and are accessible to the news media.

Goal—News releases and other types of information distributed to the media help NASA to reach a large audience quickly. This outreach reinforces and distributes information further. Media stories help explain technical information and track sequences of events for the public.

Method—Common methods of providing information to the media include the distribution of press releases on developing issues related to the project, individual interviews with project staff, or statements made by NASA representatives during public meetings. NASA may offer media briefings before public sessions to summarize the purpose and main points of the event and to enhance accuracy of media coverage.


 See **Appendix E** for a list of media contacts.

Public Notices

Description—Public notices can be advertisements published in local newspapers or mailings that announce public comment periods for CERCLA decisions, public meetings, and major project milestones.

Goal—The goal of public notices is to communicate an important announcement to as many people as possible in the community.

Method—NASA uses public notices to announce public comment periods and public meetings. In certain cases, NASA will supplement published notices with radio announcements.

 See **Appendix E** for a list of regional newspapers and other media outlets.

Project Site Visits/Tours

Description—Small groups may be given guided tours to view site activities when such tours are feasible, appropriate, and safe.

Goal—Site visits give the public a better understanding of the project work.

Method—NASA staff will lead tours of the sites and explain what is occurring. Field demonstrations are based on interest and safety considerations.

Technical Assistance Services for Communities Contract

Description—Technical Assistance Services for Communities Contract (TASC) is a program that provides independent, non-advocacy educational and technical assistance to communities affected by hazardous waste sites regulated by CERCLA and the Resource Conservation and Recovery Act.

The purpose of TASC is to help communities have a better understanding of the hazardous waste issues so they can participate in the hazardous waste cleanup process more effectively.

For more information visit: www.epa.gov/superfund/community/tasc/index.htm

Goal—TASC provides eligible communities with an independent understanding of technical, scientific, and hazardous substance contamination issues so they can participate effectively in the decision-making process.

Method—Community leaders operating within the RAB or as a separate group may contact the TASC program and request TASC services. Contact should be directed to Susan Pastor at USEPA Region 5 at 312.353.1325; email: pastor.susan@epa.gov. This program provides services through a national USEPA contract. Under the contract, a contractor provides scientists, engineers, and other professionals to review and explain information to communities. TASC services are determined on a project-specific basis and provided at no cost to communities.

4.3 PBS CERCLA SITE RESTORATION ADVISORY BOARD

The purpose of a RAB is to provide a way for members of communities and stakeholders within Erie County to discuss their needs and concerns related to the site design and cleanup decision-making process. It offers NASA an opportunity to hear and consider community input on the design and impacts of the selected remedy. RABs can promote greater public participation in cleanup projects and help citizens and NASA make better-informed decisions. At a few CERCLA Sites, RABs have remained functional beyond the life of the project and now work to promote public involvement in a variety of environmental issues.

While not a required community involvement activity, the presence of an existing USACE RAB at PBS could be extended to include these CERCLA Sites and could greatly enhance the community involvement process. Not only does it serve as a forum for the community and NASA, an active RAB can help improve communication between community members. The small pool of interviewees has already shown an interest in that forum.

It is important to note that a RAB adds value to, but does not replace the broad spectrum of, community involvement activities outlined elsewhere in this CIP. Every member of the community has the opportunity to express an opinion about the project and its elements at any time and does not have to rely on the RAB to convey that message.

A RAB is intended to provide a forum through which a broad and diverse sample of community needs and interests are represented. A RAB does not serve as a decision-making body. It is not a voting entity and does not set policy or make decisions regarding project design and implementation.

The RAB for the NASA CERCLA Sites may be designed to:

- Promote broad, balanced representation of communities and stakeholders along the entire site;
- Encourage more routine and consistent communications and coordination between NASA and the community;
- Solicit ongoing recommendations about ways to enhance community involvement;
- Provide an avenue for the community to voice its needs and concerns; and
- Provide for a consistent source of feedback for NASA to gauge interests and needs.

RAB meetings also may allow members to provide comments on project-related issues, such as:

- Community health and safety plans;
- Quality of life issues (e.g., noise, odor, lights);
- Community impacts;
- Community resources and events;
- Environmental justice;
- Cultural resources;
- Habitat plans and reports;
- Project education; and
- Evaluation of community outreach and involvement.

4.3.1 General Framework

RABs are autonomous entities that rely on NASA for organizational and informational support. NASA's role in the formation of the RAB is to initiate its development and offer organizational and financial support through the hiring of an independent, neutral facilitator.

The size of a RAB depends on the needs of the affected community. A RAB should include enough members to adequately reflect the diversity of community interests but should be small enough to function effectively. RABs typically have approximately 15 to 20 members.

4.3.2 Reconvening the Restoration Advisory Board

4.3.2.1 Citizen Groups' History at PBS

A Citizens Advisory Group was established in the greater Cleveland area and its surrounding communities in 1994 when NASA's Lewis Research Center began Phase I of a Remedial Investigation and Feasibility Study at the center. This past work is not related to the CERCLA PBS sites discussed in this CIP, but the core of the Citizens Advisory Group, which continues today, had its start at that time for the Erie County community.

By 1997, the group had changed its name to form a RAB and reconvened meetings in the Perkins Township among concerned citizens and representatives of USACE, Huntington District. Since inception, the RAB was the primary basis for community involvement and provided a mechanism for communication between the regulatory agencies, USACE, and the community about the site restoration process at PBOW. The RAB held regular meetings, as announced on community bulletin boards, and were open to the public. USACE published and mailed quarterly fact sheets with information announcing the status of remediation to RAB members and other citizens who indicated an interest in being on the mailing list.

4.3.2.2 Plum Brook Ordnance Works Restoration Advisory Board

Simultaneous to the cleanup at PBOW within PBS under the direction of USACE was the decommissioning of the former nuclear test reactors, which were also at PBS. For the decommissioning public involvement, USACE formed a focus group to determine the level of interest and specific areas of concern that groups within the community held. The Decommissioning Community Workgroup sessions drew community leaders, local residences, and other non-experts who, according to the 2002 Community Relations Plan, "liked the two-way nature of the Community Workgroup as a method of getting answers to their questions and keeping them informed" (GRC 2002). Three members of the USACE RAB, including its Citizen Co-Chair, also were members of the Decommissioning Community Workgroup. They eventually changed their names to the PBOW RAB. Their membership is provided in **Appendix D**.

4.3.2.3 Future Nomination and Membership

The development of the NASA PBS CERCLA Sites RAB would likely begin with a convening of an Interim Advisory Group. This mechanism will allow for immediate interaction and flow of communication between NASA and the interests that may later be represented by the RAB.

Two of these Decommissioning RAB members participated in the survey for this PBS CERCLA Sites CIP and one member, John Blakeman, indicated an interest in continuing that role. Another interviewee, Sarah Ross, indicated her willingness to join the RAB. Their contact information is included in **Appendix D**.

Initially, NASA will contact elected officials, agencies, and community leaders from a variety of areas and interests to serve as nominating organizations for RAB membership. RAB members are ultimately chosen because they represent an interest group that would likely be affected by the remedy. RAB members also can be drawn from among residents and owners of residential, agricultural, commercial, and industrial properties near the site. Other RAB members may be directly affected by site releases, including minority and low-income groups and local environmental or community groups. The NASA PBS CERCLA RAB will likely include local government units, local labor representatives, and local businesses.

In this way, viewpoints from communities among Erie County would be represented, allowing a broad range of interests to be heard and considered. The process of nominating citizens for RAB membership is not designed to encourage any particular outcome.

NASA will use the following criteria for RAB membership selection:

- Each member should have some knowledge of the goals, objectives, and impacts of the CERCLA project;
- Each member should in some way be affected by or have a central interest in the consequences of the CERCLA cleanup; and
- Each member should be willing to assume the responsibility for attending meetings and communicating information back to the community.

Before they agreed to participate, individual members will be made aware of the following expectations:

- Willingness to work in a collaborative environment and refrain from personal challenges to other members;
- Ability to attend general and sub-committee meetings of the RAB, other related events, and to read all preparatory materials (up to 3 hours per month);
- Willingness to work with an independent facilitator in a collaborative process; and
- Willingness to convey information from the RAB to their respective constituencies in a constructive and timely fashion.

4.4 THE COMMUNITY INVOLVEMENT ACTION PLAN

The community involvement action plan is offered in the table below (see **Table 4-1**) to meet possible future community concerns as they are identified in upcoming community involvement tools and activities identified in Section 4.1. NASA recognizes the public's need for two-way communication about decisions made regarding the CERCLA Sites and their effects on the community. Opportunities for the public to be involved in that process are suggested so that ready action may be possible. NASA is currently addressing some of these issues and will continue to do so throughout the project.

4.5 UPDATES TO THE COMMUNITY INVOLVEMENT PLAN

NASA placed a draft of this CIP on NASA's PBS Restoration website and announced the news of its placement in the August 1, 2020 edition of the *Sandusky Register*. The public was invited to review and comment on this CIP and send those comments to NASA.

As additions, changes, and improvements to the CIP are identified, NASA will update as needed, notify the public of changes via the above-listed communication tools, and post the revised version of the CIP document in the information repository.

Table 4-1. Community Involvement Action Plan: Issues and Tools

Community Involvement Issues	Community Involvement Tools
<i>Concerns about the Process</i>	
The community wants a clear explanation of its role and responsibilities in NASA's decision-making process.	<ul style="list-style-type: none"> • Restoration Advisory Board • Project Tables, Flowcharts, and Checklists for a "Roadmap" (Project Roadmap)
The community wants a transparent process.	<ul style="list-style-type: none"> • Restoration Advisory Board • Fact Sheets • Newsletters • Project Roadmap • Public Availability Sessions • Public Forums • Reports/Concept Documents/Work Plans • Press Releases to Local Newspapers
The community wants a meaningful process.	<ul style="list-style-type: none"> • Restoration Advisory Board • Fact Sheets • Project Roadmap • Public Availability Sessions • Public Forums • Public comment or input on some documents
Community involvement must be adequately supported, especially with key information.	<ul style="list-style-type: none"> • NASA's Website • Fact Sheets • Information Repositories • Listserv • Maps, Visual Aids, Displays, and Events Outreach Materials • Media Distribution/Media Events • Newsletters • Project Roadmap • Project Site Visits/Tours • Public Availability Sessions • Public Forums • Public Meetings • Public Notices • Public Service Announcements • Reports/Concept Documents/Work Plans • School/Education Outreach Activities • Press Releases to Local Newspapers • Toll-free Hotline • Video Productions • Workshops/Seminars
The community involvement process must be responsive to the needs of stakeholders.	<ul style="list-style-type: none"> • Restoration Advisory Board • Progress Reports/Newsletters

Table 4-1. Community Involvement Action Plan: Issues and Tools (Continued)

Community Involvement Issues	Community Involvement Tools
The community wants a flexible process.	<ul style="list-style-type: none"> • Many community involvement activities and tools are identified in this CIP. • Together, they serve as a flexible toolkit for NASA's public participation program and provide the public with myriad opportunities for involvement with the project.
Community involvement must be broad-based and representative.	<ul style="list-style-type: none"> • Restoration Advisory Board • Community Events • Community Poster • Environmental Justice Activities (examples available at www.epa.gov/environmentaljustice/environmental-justice-your-community) • Mailing List Expansion • Public Availability Sessions • Public Forums • School/Education Outreach Activities
Concerns about the Remedy	
Effects on Human Health	<ul style="list-style-type: none"> • Restoration Advisory Board • Fact Sheets • Information Repositories • Public Availability Sessions • Public Input • Public Forums • Technical Assistance Grant • Technical Assistance Services for Communities
Effects on Quality of Life	<ul style="list-style-type: none"> • Restoration Advisory Board • Fact Sheets • Information Repositories • Public Availability Sessions • Public Input • Public Forums • Technical Assistance Grant • Technical Assistance Services for Communities
Economic Effects	<ul style="list-style-type: none"> • Coordination with Local Government and Agencies • Information Repositories • Public Input • Stakeholder Group Meetings
Effects on Agricultural Operations	<ul style="list-style-type: none"> • Coordination with Local Government and Agencies • Fact Sheets • Information Repositories • Public Input • Stakeholder Group Meetings

Table 4-1. Community Involvement Action Plan: Issues and Tools (Continued)

Community Involvement Issues	Community Involvement Tools
Effects on Fish and Wildlife	<ul style="list-style-type: none"> • Coordination with Local Government and Agencies • Fact Sheets • Information Repositories • Public Availability Sessions • Public Input • Public Forums • Technical Assistance Grant • Technical Assistance Services for Communities
Effects on Cultural and Archaeological Resources	<ul style="list-style-type: none"> • North American Tribes: the Nottawaseppi Huron Band of Potawatomi, Forest County Potawatomi Community of Wisconsin, and Miami Tribe of Oklahoma • Fact Sheets • Information Repositories • Public Availability Sessions • Public Input • Public Forums
Effects on Prairie Burns	<ul style="list-style-type: none"> • Coordination with Local Government and Agencies • NASA Notification • Information Repositories • Restoration Advisory Board and Public Input • Public Service Announcements
Record of Decision Community Involvement Commitments	
Quality of Life Performance Standards	<ul style="list-style-type: none"> • Restoration Advisory Board • Coordination with Local Government and Agencies • Fact Sheets • Public Availability Sessions • Public Input • Public Forums • Technical Assistance Grant • Technical Assistance Services for Communities • Workshops/Seminars
Engineering Performance Standards	<ul style="list-style-type: none"> • Restoration Advisory Board • Coordination with Local Government and Agencies • Fact Sheets • Public Availability Sessions • Public Input • Public Forums • Public Meetings • Technical Assistance Grant • Technical Assistance Services for Communities • Workshops/Seminars

Table 4-1. Community Involvement Action Plan: Issues and Tools (Continued)

Community Involvement Issues	Community Involvement Tools
Waste Processing/Waste Management and Transfer	<ul style="list-style-type: none"> • Restoration Advisory Board • Coordination with Local Government and Agencies • Fact Sheets • Public Availability Sessions • Public Comment Period • Public Input • Public Forums • Press Releases to Local Newspapers • Public Meeting • Reports/Concept Documents/Work Plans • Technical Assistance Grant • Workshops/Seminars
Habitat Replacement/Areas Backfilling	<ul style="list-style-type: none"> • Restoration Advisory Board • Coordination with Local Government and Agencies • Fact Sheets • Public Availability Sessions • Public Input • Public Forums
Community Health and Safety Plans	<ul style="list-style-type: none"> • Restoration Advisory Board • Coordination with Local Government and Agencies • Fact Sheets • Public Availability Sessions • Technical Assistance Services for Communities • Public Input • Public Forums • Technical Assistance Grant • Workshops/Seminars
Cultural and Archaeological Resources	<ul style="list-style-type: none"> • North American Tribes: the Nottawaseppi Huron Band of Potawatomi, Forest County Potawatomi Community of Wisconsin, and Miami Tribe of Oklahoma • Restoration Advisory Board • Coordination with Local Government and Agencies • Fact Sheets • Public Availability Sessions • Public Input • Public Forums • Technical Assistance Grant • Technical Assistance Services for Communities • Workshops/Seminars

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APPENDIX A

FEDERALLY RECOGNIZED INDIAN NATIONS

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**FEDERALLY RECOGNIZED INDIAN NATIONS
LOCATED NEAR PLUM BROOK STATION**

TRIBES

Forest County Potawatomi Community of Wisconsin

Mr. Ned Daniels
Forest County Potawatomi Chairman
Forest County Potawatomi Community of Wisconsin
P.O. Box 340
Crandon, WI 54520
715.478.7275

Nottawaseppi Huron Band of Potawatomi

Mr. Fred Jacko, Jr.
NHBP Culture Department Manager
Tribal Historic Preservation Officer
Nottawaseppi Huron Band of Potawatomi
1485 Mno-Bmadzewen Way
Fulton, MI 49052
269.704.8307

Miami Tribe of Oklahoma

Ms. Diane Hunter
Tribal Historic Preservation Officer
Miami Tribe of Oklahoma
P.O. Box 1326
Miami, OK 74355
918-541-8966

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APPENDIX B

INTERVIEW FORM

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Community Interview Questions about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or No (Circle one)
If you saw something but didn't read it, is there a particular reason why you didn't read it?
2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?
 - Did you find the information easy to understand? Yes or No (Circle one)
 - What do you not understand? How could we make this information easier to understand?
 - Is there additional information you are interested in receiving? Would you like to be on the mailing list?

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or No (Circle one)
Do you know others who would like to read such documents?





Could you recommend an organization or name individuals who we should contact? Please provide their contact information here:

Name: _____
Address: _____
Phone: _____
Email: _____



4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those below that apply to you:

- a. Easy-to-read summary documents, newsletters, and fact sheets? _____
 - b. Easy-to-understand information about remediation technologies and related topics? _____
 - c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? _____
 - d. In-person workshops or training sessions on technical topics? _____
 - e. Site information and technical documents availability: NASA webpage _____  Twitter _____
 Facebook _____  YouTube _____  Instagram: _____ Other: _____
 - f. Information translated into another language (Specify: _____)
 - g. Assistance provided by a non-NASA technical expert working with a community organization? (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) _____
 - h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? _____
at Huron Public Library, 333 Williams St, Huron, OH? _____
at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? _____
 - i. Other: (Specify: _____)
5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or No (Circle one) Would you like to be on the mailing list? Yes or No (Circle one)

If yes, please provide your contact information here:

Name: _____
Address: _____
Phone: _____
Email: _____

Are you a leader in your community (government official or key leader in an existing group)?

Yes or No (Circle one)

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name(s) of Group: _____
Address: _____
Phone: _____
Email: _____

6. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or No (Circle one)

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

Did you feel your concerns or comments were addressed to your satisfaction?

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact

John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.

APPENDIX C

INTERVIEW RESPONSES

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Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

Orange = interviewer Green = interviewee (Editor note: this option was offered to all interviewees.)

Would you rather meet me in person to talk or do this now on the phone? Now is fine with me. Your name will be kept confidential from NASA and all others. Your answers will be shared in the report on what the PBS community desires in the way of community involvement.

Is this project confidential? Because I have no clue about what it is actually about, or is that not to be known at this time? It's not confidential at all. The CERCLA cleanup is public. But you are a citizen who has privacy rights that NASA respects. So they'd like to use your words but not reveal your name, unless you are okay with that.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or No (Circle one)

If you saw something but didn't read it, is there a particular reason why you didn't read it?

Well I work in Records mgmt and it seems like a while ago I saw something about a burn pit that was out here, but I don't have any knowledge of that even though I've been here a very long time. I do know about the shooting range that was out here. It is something I used to coordinate use for police departments to come out and use it with the Eire conservation club rented land from NASA. But I don't remember written info distributed for people to read; I don't remember details from early 70s. I think I know when they left that a cleanup would be necessary. They were out there a long time, using that area.

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?

- Did you find the information easy to understand? Yes or **No** (Circle one)
- What do you not understand? How could we make this information easier to understand?

Are you talking about the red water area? Where USACE is cleaning up TNT in ground and in water. **No.** These CERCLA sites are not the same area. NASA is cleaning these CERCLA sites. From what I know, these sites have not been investigated or discussed with the public yet. **Ok.** I don't know about these 7 areas.

- Is there additional information you are interested in receiving? Would you like to be on the mailing list? **Yes. I would like to be on the mailing list.** (Address below)

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/ Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or **No** (Circle one)
Do you know others who would like to read such documents?





Definitely nontechnical info for me — probably best for most everybody. People are interested in NASA in general and if something is wrong, there should be a lot of interest. Like there was for the decommissioning of reactor. Those public meetings drew a lot of people.

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here:

No except Friends of Plum Brook. They are made up of, like the City Commissioner and others with a vested interest in the town to make sure Plum Brook thrives and stuff like that. They're a self-formed group, not solely an environmental focus but they are active when there have been political topics that go on here (like the runway). I read about them on FB and in the newspaper.

4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those that apply to you:

- a. Easy-to-read summary documents, newsletters, and **fact sheets**? **_Yes with overall summary info and bullets for where to go for more information_**
- b. Easy-to-understand information about remediation technologies and related topics? **_yes_**
- c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? **_yes that would definitely be a good thing. Someone who is doing the hands on work is more credible source.**
- d. In-person workshops or training sessions on technical topics? **_no, no time for that_**
- e. Site information and technical documents availability: NASA webpage **trust it more than social media**  Twitter  Facebook  YouTube **Auditory would help maybe having something we could listen to**  Instagram: _____ Other: **I distrust social media. Any more I have doubt about**

social media's trustworthiness. It sounds nonofficial. I don't like. Seems like NASA is doing something that is a competition or not serious in those other places.

f. Information translated into another language (Specify: no)

g. Assistance provided by a non-NASA technical expert working with a community organization?
(This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) no

h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? _____
at Huron Public Library, 333 Williams St, Huron, OH? _____
at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? _____

i. Other: (Specify: no preference)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or **No** (Circle one) Would you like to be on the mailing list? **Yes** or No (Circle one)

If yes, please provide your contact information here:

Name: _____ Information blocked for interviewee's privacy_
Address: _____
Phone: _____
Email: _____

6. Are you a leader in your community (government official or key leader in an existing group)?

Yes or **No** (Circle one)

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name of Group: _____
Address: _____
Phone: _____
Email: _____

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or **No** (Circle one)

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

NA

Did you feel your concerns or comments were addressed to your satisfaction?

NA

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact
John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.

Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

Would you rather meet me in person to talk or do this now on the phone? No. My name may be used.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or **No** (Circle one) *I don't know where they are. I think I know they are there because I've seen every square inch of the site, but I'm not familiar with that nomenclature. I understand the science of this ecosystem and the history as well as anyone.*

If you saw something but didn't read it, is there a particular reason why you didn't read it?

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?

- Did you find the information easy to understand? **Yes** or No (Circle one)
- What do you not understand? How could we make this information easier to understand?
- Is there additional information you are interested in receiving? Would you like to be on the mailing list?

I'm a local expert on ecological restoration and enviro management and have been hired to do the prairie burns four days a year on the NASA site and the opportunity has exposed to me to new information. Since I've been hired to oversee the management of the prairies there on the NASA Site, I've worked with a lot of local environmental groups and am capable of answering questions for the general public. I've discovered five spectacular pre-settlement vegetation types in that PBS ecosystem. If NASA ever left, it would be turned into a National Park. NASA did not know this until I got there. It's been so much fun working with you people... burned prairies and they have a phenomenal place

ecologically. I've found two species of prairie plants that were thought to be extirpated in northern Ohio, but after the burns, they came back. We have three main oak savannahs that are world class. I could go on and on. And it is so appropriate that NASA is managing them with environmental quality.

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? **Yes** or No (Circle one)

Do you know others who would like to read such documents? **Yes RAB Members. I will send you contact info.**

Yes, I would...down to the comma and quotations.

Could you recommend any organization or name individuals who we should contact? Please provide their contact information here:

I will email you a list. The public is concerned about this place. Ever since WWII, people in community thought the place would be exploding because they thought the government was making bombs here. There was concern run-off from Plum Brook itself would pollute Lake Eire. The public has particular, generalized concerns with environmental issues at PBS. When they learn that NASA will be doing this there will be a lot of questions asked. There will be active concern. The Corps and NASA have done a good job so far in keeping people informed but that's all background. But once the word gets out, there will be a lot of questions and not being able to see the problem is a concern. They need to keep the doors open and not try to hide anything. That's the problem people can't go in and see it. When I was teaching here in 1970s, NASA was secretive and had a bomb-making reputation. NASA is still trying to get past when farms were bought out from people hurriedly during the war. General Stringer is doing a good job in building openness. Many lost family farms; animosity to War Department; continues today—the government took our land. But better with General Stringer but people are still wary of NASA with some residual distrust. We need to let people know this is not hidden but is open and NASA is being honest about what is going on. No hiding and there will be good results.

4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?





Check (✓) those that apply to you:

a. Easy-to-read summary documents, newsletters, and fact sheets? **_yes_**

b. Easy-to-understand information about remediation technologies and related topics? **_yes_** **Crucial that the local people want to know**

c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? **_x_** **crucial for the RAB for several years; public events are needed at education institution; field trips are successful. Having 30 to 40 people see with their own eyes what is going on. It's the very best. You may not get a whole lot of people but you get the *right* people. They go out and talk to others and that spreads quickly.**

d. In-person workshops or training sessions on technical topics? __Low priority; too technical; public will not be interested in that. People would hold this as low for their interests. All based on RAB experience.

e. Site information and technical documents availability: NASA webpage yes; people go there and good people checking it out across the country;  Twitter no; but I don't know_  Facebook no but I don't think it conveys enough info; raises more questions than answers  YouTube_ yes especially for presentations and is really good for school students (HS and college)  Instagram: __ NA Other: __

f. Information translated into another language (Specify: no; tiny Hispanic population but English is spoken)

g. Assistance provided by a non-NASA technical expert working with a community organization? (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) __not the case now like it was when the RAB started for decommissioning; burn sites are simple comparatively; not "deep" science; no need

h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? ____
at Huron Public Library, 333 Williams St, Huron, OH? ____
at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? For sure_

i. Other: (Specify: __ FUDS have used 12 ft of their library but CERCLA should be in same library. Not sure that anyone is ever going to go there to see it.__)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or No (Circle one) Ohio Prairie Association; Meadow Environment Consultancy (eco restorations); eco mgmt leader; professional photographer and speaker

If yes, please provide your contact information here:

Name: __John Blakeman, Meadow Environments LLC_____
Address: __4312 Woodridge Drive Sandusky, OH 44870_____
Phone: __cell 419.602.0789____ 419-433-5639_____
Email: __j2blakeman@gmail.com____

6. Are you a leader in your community (government official or key leader in an existing group)?

Yes or No (Circle one) Not elected but consultant as native plant landscape designer for State of Ohio and a recognized leader in eco management. Professional photographer and public speaker; founder of Audobon society and recognized leader in enviro matters.

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name of Group: ____ John Blakeman
Address: ____4312 Woodridge Drive Sandusky, Ohio, 44870_____
Phone: __419 602 0789_____
Email: __j2blakeman@gmail.com____

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or No (Circle one)

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

I have 50 slides on the history of PBOW with background but not for distribution but for historical reference: in WWII 1941 to 45 what happened behind the fence? Burning grounds were for bad batches of TNT. To get rid of it, you burned it. We need to tell the story.

Did you feel your concerns or comments were addressed to your satisfaction?

Yes; phenomenally well; both by NASA and by the Corps. The truth was not swept under the rug. There was no wizards behind the curtain. It was treated honestly and openly and not hidden. The Corps was extremely strong and Gen Stringer is forthcoming about letting people know what was going on.

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact
John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.

Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) **Yes** or No (Circle one)

If you saw something but didn't read it, is there a particular reason why you didn't read it?

Yes; I know there is a lot of environmental work going on out there. I'm not aware of every specific one. But I belonged to one of the organizations that utilized the firing range. I was with the Erie County Conservation League. (It was a hunting and fishing club. They had trap and skeet shooting and competitions and that sort of thing, and they were there for quite some time. I was a police officer for Cedar Point but we didn't use that range. I've heard casual conversation around town about the cleanup happening there. Most people don't understand what all remediation is going on out there, but most people are aware of the history of the site back from WWII. Favorable? never met anybody who expressed serious concerns; Most people are comfortable that NASA is making an effort to clean up and remediate issues from WWII day and they don't know it is through USACE because they think it's a NASA site so that cleanup is done by NASA. But I know it's more complicated.

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?

- Did you find the information easy to understand? **Yes** or No (Circle one) reactor

- What do you not understand? How could we make this information easier to understand? **Yes.**
Easy to comprehend; good involvement; good press

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/ Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or **No** (Circle one)

Do you know others who would like to read such documents? **Most people not; some would**

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here:

Abbey Bemis leads Eire County Economic Development Corporation (ECEDC): 247 Columbus Ave, Suite 126 Sandusky, OH 44870 (419) 627-7791 Mobile: (419) 366-2790 abbey@eriecountyedc.org





4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process? *Check (✓) those that apply to you:*

a. Easy-to-read summary documents, newsletters, and fact sheets? yes

b. Easy-to-understand information about remediation technologies and related topics? yes

c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? maybe as a group...

d. In-person workshops or training sessions on technical topics? no

e. Site information and technical documents availability: NASA webpage yes  Twitter no
 Facebook y  YouTube n  Instagram: no Other: Escorted site tours

f. Information translated into another language (Specify: some Spanish, possible translation needed)

g. Assistance provided by a non-NASA technical expert working with a community organization? (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) no

h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? _____
at Huron Public Library, 333 Williams St, Huron, OH? _____

at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? BGSU

i. Other: (Specify: _____)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations? **Yes** or No (Circle one)

This group would like to participate in providing analyses and recommendations.

Would you like to be on the mailing list? Yes or No (Circle one)

If yes, please provide your contact information here:

Name: Jeffery C. Huber, Friends of NASA Plum Brook, _____

Address: 36 East Seminary Str. Norwalk, OH 44857 _____

Phone: 419 744 3150 _____

Email: jchuber@civista.bank _____

6. Are you a leader in your community (government official or key leader in an existing group)? **Chairman, CoFounder of Friends of NASA Plum Brook; bank vice president**
Yes or No (Circle one)

Your Name/Name of Group: **Jeffery C. Huber, Friends of NASA Plum Brook,**

Address: **36 East Seminary Str. Norwalk, OH 44857**

Phone: **419.744.3150**

Email: **jchuber@civista.bank**

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or **No** (Circle one)

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

Did you feel your concerns or comments were addressed to your satisfaction?

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact John Brodt at 216-433-6028

or john.p.brodt@nasa.gov.



Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or No (Circle one)

If you saw something but didn't read it, is there a particular reason why you didn't read it?

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?

- Did you find the information easy to understand? Yes or No (Circle one)
- What do you not understand? How could we make this information easier to understand?
- Is there additional information you are interested in receiving? Would you like to be on the mailing list?

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or No (Circle one)

Do you know others who would like to read such documents?

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here:

Name: ERINN HOHMAN, WATERSHED COORDINATOR
Address: 2900 COLUMBUS AVE ROOM 131, SANDUSKY, OH 44870
Phone: 419 626 5211
Email: thohman@eriecounty.oh.gov



4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those below that apply to you:

- a. Easy-to-read summary documents, newsletters, and fact sheets? ☒
- b. Easy-to-understand information about remediation technologies and related topics? ☒
- c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? ☐
- d. In-person workshops or training sessions on technical topics? ☐

e. Site information and technical documents availability: NASA webpage ☒ Twitter ☐
Facebook ☒ YouTube ☐ Instagram: ☐ Other: ☐

f. Information translated into another language (Specify:)

g. Assistance provided by a non-NASA technical expert working with a community organization? (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) ☐

h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? ☒
at Huron Public Library, 333 Williams St, Huron, OH? ☒
at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? ☒

i. Other: (Specify: ERIE COUNTY COMMISSIONERS)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or No (Circle one) Would you like to be on the mailing list? Yes or No (Circle one)

If yes, please provide your contact information here:

Name: ERIE SOIL & WATER CONSERVATION DISTRICT / BREANN HOHMAN
Address: 2900 COLUMBUS AVE, ROOM 131
Phone: 419 622 5211
Email: bhohman@eriecounty.oh.gov

6. Are you a leader in your community (government official or key leader in an existing group)? (BEE WORKS CLOSELY W/ LOCAL WATERSHED GROUPS)

Yes or No (Circle one)

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name(s) of Group:
Address:
Phone:
Email:

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or No (Circle one) No Not officially, but I did attend a number of meetings of the Board several years ago.

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

Did you feel your concerns or comments were addressed to your satisfaction?

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact

John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.

Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

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This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or **No** (Circle one)

If you saw something but didn't read it, is there a particular reason why you didn't read it?

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?

- Did you find the information easy to understand? Yes or **No** (Circle one) **I haven't seen anything.**

- What do you not understand? How could we make this information easier to understand?

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.




3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or **No** (Circle one)

Do you know others who would like to read such documents? **Some people**

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here: **John Blakeman**

4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those that apply to you:

- a. Easy-to-read summary documents, newsletters, and fact sheets? yes
- b. Easy-to-understand information about remediation technologies and related topics? yes
- c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? Not for me; I'm an elderly person who doesn't get around too much
- d. In-person workshops or training sessions on technical topics? No I could not do that
- e. Site information and technical documents availability: NASA webpage no I do not own a computer
or cell phone  Twitter no  Facebook no  YouTube no  Instagram: no Other: US mail
- f. Information translated into another language (Specify: No)
- g. Assistance provided by a non-NASA technical expert working with a community organization?
 (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) No
- h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? No
 at Huron Public Library, 333 Williams St, Huron, OH? No
 at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? Yes
- i. Other: (Specify: _____)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or No (Circle one) Would you like to be on the mailing list? Yes or No (Circle one)

If yes, please provide your contact information here:

Name: Lee Yeckley
 Address: 442 Sheffield Way Sandusky OH 44870
 Phone: (419) 621-7568
 Email: NA doesn't own computer

6. Are you a leader in your community (government official or key leader in an existing group)?

Yes or No (Circle one)

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name of Group: _____
 Address: _____
 Phone: _____
 Email: _____

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or No (Circle one) at least 20 years

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

Yes. I asked questions and got comments.

Did you feel your concerns or comments were addressed to your satisfaction?

Yes.

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact John Brodt at 216-433-6028
 or john.p.brodt@nasa.gov.

Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

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During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or No (Circle one) **lived here for many years and saw the deconstruction of the reactor and dynamite when the streams ran red**

If you saw something but didn't read it, is there a particular reason why you didn't read it? **I haven't seen anything in the last 4 or 5 years, I guess. But I read about it in the news.**

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read?- Did you find the information easy to understand? **Yes** or No (Circle one) **easy to understand**

- What do you not understand? How could we make this information easier to understand?

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/ Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.





3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or **No** (Circle one)

Do you know others who would like to read such documents? **I suppose so. Maybe someone with a background in chemistry to understand.**

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here: **No, I really don't**

4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those that apply to you:

- a. Easy-to-read summary documents, newsletters, and fact sheets? yes
- b. Easy-to-understand information about remediation technologies and related topics?
yes
- c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? no_ been on tours in the past and it was interesting but no time to do now
- d. In-person workshops or training sessions on technical topics? no
- e. Site information and technical documents availability: NASA webpage yes  Twitter no
 Facebook no  YouTube no  Instagram: no Other: _____
- f. Information translated into another language (Specify: no)
- g. Assistance provided by a non-NASA technical expert working with a community organization?
(This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) some people
- h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? yes
at Huron Public Library, 333 Williams St, Huron, OH? _____
at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? _____
- i. Other: (Specify: _____)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or **No** (Circle one) Would you like to be on the mailing list? Yes or **No** (Circle one)

If yes, please provide your contact information here:

Name: Duane Galloway
Address: 210 West Bogart Road
Phone: 419 656 2810
Email: duanelgalloway@aol.com

6. Are you a leader in your community (government official or key leader in an existing group)?

Yes or **No** (Circle one) I taught high school science; I am a lawyer, general practice

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name of Group: see above
Address: _____
Phone: _____
Email: _____

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or **No** (Circle one)

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?
No

Did you feel your concerns or comments were addressed to your satisfaction? **Yes**

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact
John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.

Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

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During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or **No** (Circle one) **Haven't seen anything**
If you saw something but didn't read it, is there a particular reason why you didn't read it?

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read? **NA**

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? **Yes** or No (Circle one) **definitely**
Do you know others who would like to read such documents? **Yes, probably on the county-level more than the general public, like regional planning office, county commissioners, Milan Township trustees, Friends of NASA Plum Brook**

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here: **Dan Fredrick (trustee of Milan Township)**

4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?
Check (✓) those that apply to you:


a. Easy-to-read summary documents, newsletters, and fact sheets? **_yes_**

b. Easy-to-understand information about remediation technologies and related topics?

probably yes

c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? yes; video conference presentation in regular meeting; all of it would be way too much; Our community has a sense or a trust that cleanup is being done right. And its hard not to when they have so much property so no one feels endangered anyway so that the future land use is secure

d. In-person workshops or training sessions on technical topics? _yes_

e. Site information and technical documents availability: NASA webpage_yes, prioritize  Twitter _yes



Facebook yes_



YouTube _yes_



Instagram: __Yes, in a perfect world but that is not the target

that is needed here.; technical info about cleanup not great for visual format _Other: _local paper, Sandusky Register and local gov't mtg and trustee mtgs. people are very interested in this sort of thing, but we are an aging area

f. Information translated into another language (Specify: __maybe Spanish_)

g. Assistance provided by a non-NASA technical expert working with a community organization? (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) _ No, I think this is not presumptively needed

h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? Most accessible and has longest hours and people are closest to it__

at Huron Public Library, 333 Williams St, Huron, OH? _____

at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? _____

i. Other: (Specify: _____)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?

Yes or No (Circle one) Would you like to be on the mailing list? Yes or No (Circle one)

If yes, please provide your contact information here:

Name: ___ Sarah Ross _____

Address: ___ 247 Columbus Ave.; Unit 126 Sandusky OH 44870 _____

Phone: ___ 419.366.6907 _____

Email: ___ sarah@eriecountyedc.org _____

6. Are you a leader in your community (government official or key leader in an existing group)?

Yes or No (Circle one) serves on boards: Huron Chamber of Commerce; Minority Business Assistance Ctr; Friends of NASA Plum Brook Station

Provide your contact information here if you would like to be on our mailing listsee above

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or

No (Circle one) I am willing to be a representative of business interest in Erie County in the RAB.

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?

No

Did you feel your concerns or comments were addressed to your satisfaction? NA

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.

Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or **No** (Circle one)

If you saw something but didn't read it, is there a particular reason why you didn't read it?

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read? **NA**

- Did you find the information easy to understand? Yes or No (Circle one)

- What do you not understand? How could we make this information easier to understand?

- Is there additional information you are interested in receiving?

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? Yes or **No** (Circle one)

Do you know others who would like to read such documents? **No**

Could you recommend an organization or name individuals who we should contact? Please provide their contact information here: **No**

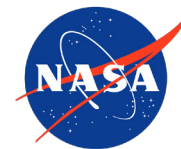
4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those that apply to you:

- a. Easy-to-read summary documents, newsletters, and fact sheets? yes, factsheets would be helpful
- b. Easy-to-understand information about remediation technologies and related topics? yes
- c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? no
- d. In-person workshops or training sessions on technical topics? no
- e. Site information and technical documents availability: NASA webpage yes  Twitter no
 Facebook no  YouTube no  Instagram: no Other: _____
- f. Information translated into another language (Specify: maybe Spanish)
- g. Assistance provided by a non-NASA technical expert working with a community organization? (This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) no
- h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? yes
 at Huron Public Library, 333 Williams St, Huron, OH? yes
 at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? yes
- i. Other: (Specify: _____)
5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations? Yes or **No** (Circle one) Would you like to be on the mailing list? Yes or **No** (Circle one)
 If yes, please provide your contact information here: **NA**
 Are you a leader in your community (government official or key leader in an existing group)? **Yes** or No (Circle one)
 Provide your contact information here if you would like to be on our mailing list(optional):
 Your Name/Name of Group: Barbara Sessler, Erie County Recorder
 Address: 247 Columbus Ave UNIT 225, Sandusky, OH 44870
 Phone: (419) 627-7686
 Email: recorder@eriecounty.oh.gov
6. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or **No** (Circle one) Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works? **No**
 Did you feel your concerns or comments were addressed to your satisfaction? **Yes; NASA would take concerns seriously. They have an interest in the community and it is to their best interest to listen to the community.**

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact John Brodt at 216-433-6028 or john.p.brodt@nasa.gov.



Community Interview Questions

about CERCLA Activities at Plum Brook Station

NASA is cleaning up the contamination at the seven sites at Plum Brook Station (PBS) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) in your community. NASA used these areas as firing ranges or burning grounds in the past, and there may be debris or contamination that requires cleanup. NASA will conduct an investigation to determine if past activities impacted the environment or have the potential to impact human health. Assessment activities are not expected to impact neighbors or the general public.

NASA believes the active, meaningful involvement of community members is critical to the success of a cleanup effort. This survey is an opportunity for you to tell us how well we are doing at listening to your concerns about the cleanup and making it possible for you to participate in the planning and decision making process. Please take a few minutes to answer the questions. Your views are important and will help us to be more responsive to your needs and interests.

This survey is conducted in accordance with the Federal Paperwork Reduction Act Information Collection Request # 1487.12. You will need about 15 minutes to answer the questions.

During the CERCLA process, NASA will provide information to keep you informed about and help you understand the work that is going on at the site. This information sometimes is relatively nontechnical information such as fact sheets.

1. Have you seen or read any information about the seven CERCLA sites at PBS? (Maybe you received it from NASA or it was posted on a web site?) Yes or No (Circle one) **No**

If you saw something but didn't read it, is there a particular reason why you didn't read it?

2. If you have read information from NASA about the seven CERCLA sites, can you describe what you read? **did not read anything – knew nothing about it**

- Did you find the information easy to understand? Yes or No (Circle one)

- What do you not understand? How could we make this information easier to understand?

NASA will produce technical reports and analyses that describe site contamination and how NASA plans to address the site. These reports include sampling plans and results, the Remedial Investigation/Feasibility Study (RI/FS), Proposed Plan, Record of Decision (ROD), and construction documents.

3. Are you interested in reading site technical documents to better understand NASA's assessment of site problems and recommendations to address the problems? **Yes** or No (Circle one)

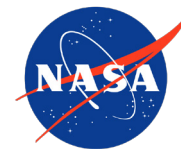
Do you know others who would like to read such documents? Could you recommend an organization or name individuals who we should contact? Please provide their contact information here:

4. What is the best way to communicate technical information about these CERCLA sites' issues, their technical documents, and the cleanup decision-making process?

Check (✓) those that apply to you:

a. Easy-to-read summary documents, newsletters, and fact sheets? **YES**

b. Easy-to-understand information about remediation technologies and related topics? **YES**



c. Availability sessions where members of the Site Cleanup Team are available to talk with you and answer questions? _____

d. In-person workshops or training sessions on technical topics? _____

e. Site information and technical documents availability: NASA webpage__  Twitter __



Facebook__



YouTube__



Instagram:____Other: _____

f. Information translated into another language (Specify: _____)

g. Assistance provided by a non-NASA technical expert working with a community organization?
(This can be provided only to qualified community groups willing to manage this assistance and share it with the broader community.) _____

h. Technical documents available at Sandusky Library, 114 W. Adams St., Sandusky, OH? **YES**
at Huron Public Library, 333 Williams St, Huron, OH? **YES**
at the Community Information Bank (on Decommissioning) at the BGSU Firelands Library? **YES**

i. Other: (Specify: _____)

5. Are you interested in reviewing and providing comments on NASA's analyses and recommendations?
Yes or No (Circle one)

Would you like to be on the mailing list? **Yes** or No (Circle one)

If yes, please provide your contact information here:

Name: **STEVE SHOFFNER, ERIE COUNTY COMMISSIONER**

Address: **2900 COLUMBUS AVENUE, SANDUSKY, OHIO 44870**

Phone: _____

Email: **SHOFFNER@ERIECOUNTY.OH.GOV**

6. Are you a leader in your community (government official or key leader in an existing group)?
Yes or No (Circle one)

Provide your contact information here if you would like to be on our mailing list(optional):

Your Name/Name of Group: **STEVE SHOFFNER – ERIE COUNTY COMMISSIONER**

Address: **2900 COLUMBUS AVENUE, SANDUSKY, OHIO 44870**

Phone: **419-627-7753**

Email: **SHOFFNER@ERIECOUNTY.OH.GOV**

7. Were you a member of the Plum Brook Ordnance Works Restoration Advisory Board (RAB)? Yes or
No (Circle one)

Did you share site concerns or comments on technical documents about Plum Brook Ordnance Works?
Did you feel your concerns or comments were addressed to your satisfaction?

Thank you for your participation. Your input can help shape this cleanup.

If you have any questions or concerns, please contact John Brodt at 216-433-6028
or john.p.brodt@nasa.gov.

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APPENDIX D

KEY POINTS OF CONTACT

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email thru www.portman.senate.gov

Sherrod Brown
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U.S. REPRESENTATIVE – 9th DISTRICT

Marcy Kaptur
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State Elected Leaders

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614-644-4357
email thru www.governor.ohio.gov

Jon A. Husted, Lt. Governor
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Duane L. Galloway & Susan Galloway
210 Bogart Road
Sandusky, OH 44870

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(should be updated after every RAB and public meeting from sign-in sheets)

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j2blakeman@gmail.com

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Ms. Sarah Ross
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recorder@eriecounty.oh.gov

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APPENDIX E
MEDIA CONTACTS

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MEDIA

Radio Stations

WNRK FM 90.7 (public radio)
1613 East Summit St.
Kent, OH 44242
330-672-3114
www.wksu.org

WEOL AM 930/100.3 FM (news/sports/talk)
530 Broad St.
Elyria, OH 44053
440-233-5106
www.weol.northcoastnow.com

WLEC 1450 AM/93.5 FM
(news/sports/favorites)
1640 Cleveland Road W
Sandusky, OH 44870
419-625-1010
www.wlec.com

Mix 102.7 WCPZ (contemporary mix)
1640 Cleveland Road W
Sandusky, OH 44870
419-625-1010
www.mix1027.com

Coast Country 100.9 FM WMJK (country)
1640 Cleveland Road W
Sandusky, OH 44870
419-625-1010
www.coast1009.com

95.3 WLKR (adult album alternative)
Elyria-Lorain Broadcasting
10327 Milan Road
Milan, OH 44846
419-609-5961
www.wlkr.northcoastnow.com

K96 Country WKFM 96.1 FM (country)
Elyria-Lorain Broadcasting
10327 Milan Road
Milan, OH 44846
419-609-5961
www.wkfm.northcoastnow.com

Newspapers

Sandusky Register
314 West Market Street
Sandusky, OH 44870
419-625-5500
www.sanduskyregister.com

The Morning Journal
2500 West Erie Avenue
Lorain, OH 44053
440-245-6901
www.Morningjournal.com

Norwalk Reflector
61 E. Monroe Street
Norwalk, OH 44857
440-522-0433
www.norwalkreflector.com

Vermilion Online News
P.O. Box 136
Vermilion, OH 44089
440-522-0433
www.vermiliononlinenews.com

Media Relations Contact at NASA

Jan Wittry
NASA Media Relations Manager
216-433-5466
jan.m.wittry-1@nasa.gov

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APPENDIX F
MEETING LOCATIONS

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MEETING LOCATIONS

Bowling Green State University Firelands

BGSU Firelands, 1 University Dr, Huron, OH 44839
(419) 433-5560

Meeting Spaces & Venues

<https://www.firelands.bgsu.edu/offices/bando/services-and-information/scheduling---reservations.html>

Contact **audiovisual services**

1012 Cedar Point Center

419.372.0693

Fax: 419.372.0708

Monday-Thursday: 8am - 8pm

Friday: 8am - 4:30pm

Sandusky Library

114 W Adams Street

Sandusky, OH 44870

419-625-3834

Monday: 10:00 a.m. - 8:00 p.m.

Tuesday: 10:00 a.m. - 8:00 p.m.

Wednesday: 10:00 a.m. - 8:00 p.m.

Thursday: 10:00 a.m. - 5:00 p.m.

Friday: 10:00 a.m. - 5:00 p.m.

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APPENDIX G

INFORMATION REPOSITORY

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INFORMATION REPOSITORY

Bowling Green State University Firelands Library

BGSU Firelands, 1 University Dr, Huron, OH 44839
(419) 433-5560

Contact information for adding documents to the repository:

Leo Mallias

BGSU Firelands Library Director
419.372.0681
email: lmallia@bgsu.edu

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