FINAL

Community Involvement Plan

Marine Corps Base Quantico
Quantico, Virginia

MARCH 2024

Prepared by

ch2m. SM

NAVFAC
Naval Facilities Engineering Systems Command

Community Involvement Plan Organization

Appendixes (located on the enclosed CD)

1: Introduction

This Community Involvement Plan (**CIP**) describes specific outreach methods to provide factual and timely information, obtain community feedback, and promote understanding of the Environmental Restoration Program (**ERP**) at Marine Corps Installations National Capital Region – Marine Corps Base Quantico (hereafter referred to as **MCBQ** or "the Base").

This CIP is designed to support effective two-way communication between the Department of the Navy (**Navy**)[1] and local MCBQ community members. Effective communication and timely information exchange are essential for maintaining community understanding and support for MCBQ's mission and for implementing a successful ERP.

This CIP updates and replaces the *Final Community Involvement Plan Update* completed in December 2019 (CH2M, 2019). This CIP reflects updated information for the community profile, including demographics and environmental justice, community outreach activities, environmental site status, and required and recommended community involvement activities. The outreach methods described in this CIP were developed based on community input received between May 2018 and February 2019. Therefore, new community input has not been obtained for this CIP.

1.1 Environmental Restoration Program

MCBQ is located in Quantico, Virginia, approximately 35 miles south of Washington, D.C. It has been used as a military base since 1917.

Throughout its history, MCBQ's mission has required the use, handling, storage, and disposal of hazardous materials and petroleum products. These products may have come into contact with the environment through accidental spills, leaks, and previously common waste disposal practices, resulting in conditions that do not meet today's stricter and more comprehensive environmental standards. Releases to the environment from past activities are addressed by the Navy under its ERP. The ERP follows the process and procedures set forth in two major environmental acts: the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**) and the Superfund Amendments and Reauthorization Act (**SARA**).

The Navy's ERP consists of two programs:

Installation Restoration Program (**IRP**) addresses releases of hazardous substances, pollutants, or contaminants that may pose risks to human health or the environment.

Munitions Response Program (**MRP**) addresses environmental health and safety hazards from unexploded ordnance (**UXO**), discarded military munitions, and munitions constituents (**MC**).

CERCLA requires the U.S. Environmental Protection Agency (**EPA**) to publish a list of sites selected for priority environmental investigation and response; this compilation of sites is called the National Priorities List (**NPL**). MCBQ was listed on the NPL on June 30, 1994.

Acronym Use

To make this document more readable, acronym use has been limited. Acronyms that are used repeatedly appear in bold the first time they are used. Other acronyms are provided for informational purposes but are not repeated throughout the document. The following acronyms are repeated in this document:

AFFF	Aqueous film-forming foam
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIP	Community Involvement Plan
DoD	Department of Defense
DRMO	Defense Reutilization and Marketing Office
EMD	Environmental Management Division
EPA	U.S. Environmental Protection Agency
ERP	Environmental Restoration Program
FBI	Federal Bureau of Investigation
FS	Feasibility Study
FY	Fiscal Year
Guad	Guadalcanal
IRP	Installation Restoration Program
LUC	Land Use Control
LTM	Long-Term Monitoring
MC	Munitions Constituents
MCAS	Marine Corps Air Station
MCBQ	Marine Corps Base Quantico
MEC	Munitions of Explosive Concern
MRP	Munitions Response Program
NACIP	Navy Assessment and Control of Installation Pollutants
NAVFAC	Naval Facilities Engineering Systems Command
NPL	National Priorities List
NREA	Natural Resources and Environmental Affairs
PA	Preliminary Assessment
PCB	Polychlorinated biphenyl
PFAS	Per- and polyfluoroalkyl substances
QPMT	Quantico Project Managers Team
RA	Remedial Action
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
SARA	Superfund Amendment Reauthorization Act
SI	Site Inspection
TASC	Technical Assistance Service for Communities
TAG	Technical Assistance Grant
TAPP	Technical Assistance for Public Participation
UXO	Unexploded Ordnance
VDEQ	Virginia Department of Environmental Quality

1 While the Navy and Marine Corps are separate military branches, the Marine Corps is part of the Department of the Navy.

1.2 Community Involvement

Community involvement activities are a necessary component of the ERP. Community involvement promotes communication between the public and the Navy concerning the status of remediation at installations. Specific community involvement activities are required by CERCLA at specific stages of environmental response, although the Navy's guidance may be more comprehensive than the requirements in CERCLA.

The first Community Relations Plan for the ERP at MCBQ was prepared in 1995, was updated in 2004, and again in 2019 as a CIP. The term "Community Relations Plan" was replaced with "Community Involvement Plan" after the publication of EPA's *Superfund Community Involvement Handbook* (2016). The 2019 CIP is superseded by this 2023 CIP update.

Naval Facilities Engineering Systems Command (NAVFAC) Washington will partner with the MCBQ Natural Resources and Environmental Affairs (**NREA**) branch and the MCBQ Communication Strategy and Operations (CommStrat) office (formerly Public Affairs) to implement this CIP.

MCBQ formed a CERCLA Tier I Partnering Team in the mid-1990s. The MCBQ Partnering Team is identified as the Quantico Project Managers Team (QPMT) and consists of representatives from NAVFAC Washington, MCBQ, EPA, and Virginia Department of Environmental Quality (**VDEQ**), with support from the Navy's environmental contractor. By bringing these key parties together in regular, structured meetings to discuss and resolve issues, the QPMT promotes trust and cooperation that permits the remediation process to move forward at a quicker pace than would be possible under traditional procedures.

Community involvement is the process for engaging in dialogue and collaboration with communities potentially affected by environmental activities in the area. Its purpose is to provide interested stakeholders with the opportunity to be informed about the restoration activities and provide input into restoration decisions. This CIP is intended to be a site-specific strategy for meaningful community involvement throughout the CERCLA cleanup process and has been completed in accordance with regulations and guidance for conducting community involvement activities related to environmental restoration, including the following:

- EPA's *Superfund Community Involvement Handbook* (EPA, 2020)
- EPA's Community Involvement Toolkit (EPA, 2023a)
- Department of the Navy *Environmental Restoration Program Manual* (2018)
- Department of Defense (**DoD**) *Management Guidance for the Defense Environmental Restoration Program* (2001)
- Code of Federal Regulations Title 32, Part 203, *Technical Assistance for Public Participation (TAPP) in Defense Environmental Restoration Activities* (1998)
- Code of Federal Regulations Title 32, Part 202, *Final Rule [for] Department of Defense Restoration Advisory Boards* (2006)
- DoD's *Restoration Advisory Board Rule Handbook* (DoD, 2007)


Photo By Sgt. Melissa Lee


Photo By Lance Cpl. Matthew Bragg


Photo By Eve A. Baker


Photo By Pfc. David Staten


Photo By Pfc. Samuel Ellis

2: Base Location, Description, and Community Profile

This section describes MCBQ's setting within the local community and explains the framework for environmental investigation at the Base under CERCLA and provides a brief overview of the environmental history. Details about the status of environmental sites at MCBQ are provided in **Section 5.4**.


Photo By Sgt. Terry Brady

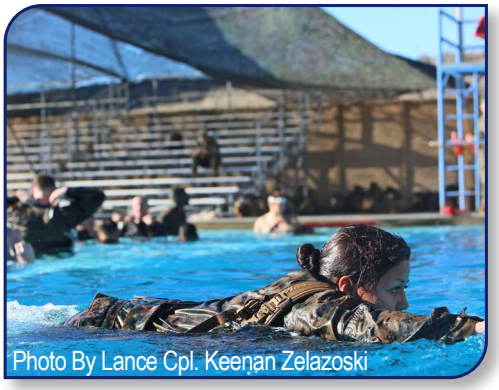


Photo By Lance Cpl. Keenan Zelazoski

2.1 Location

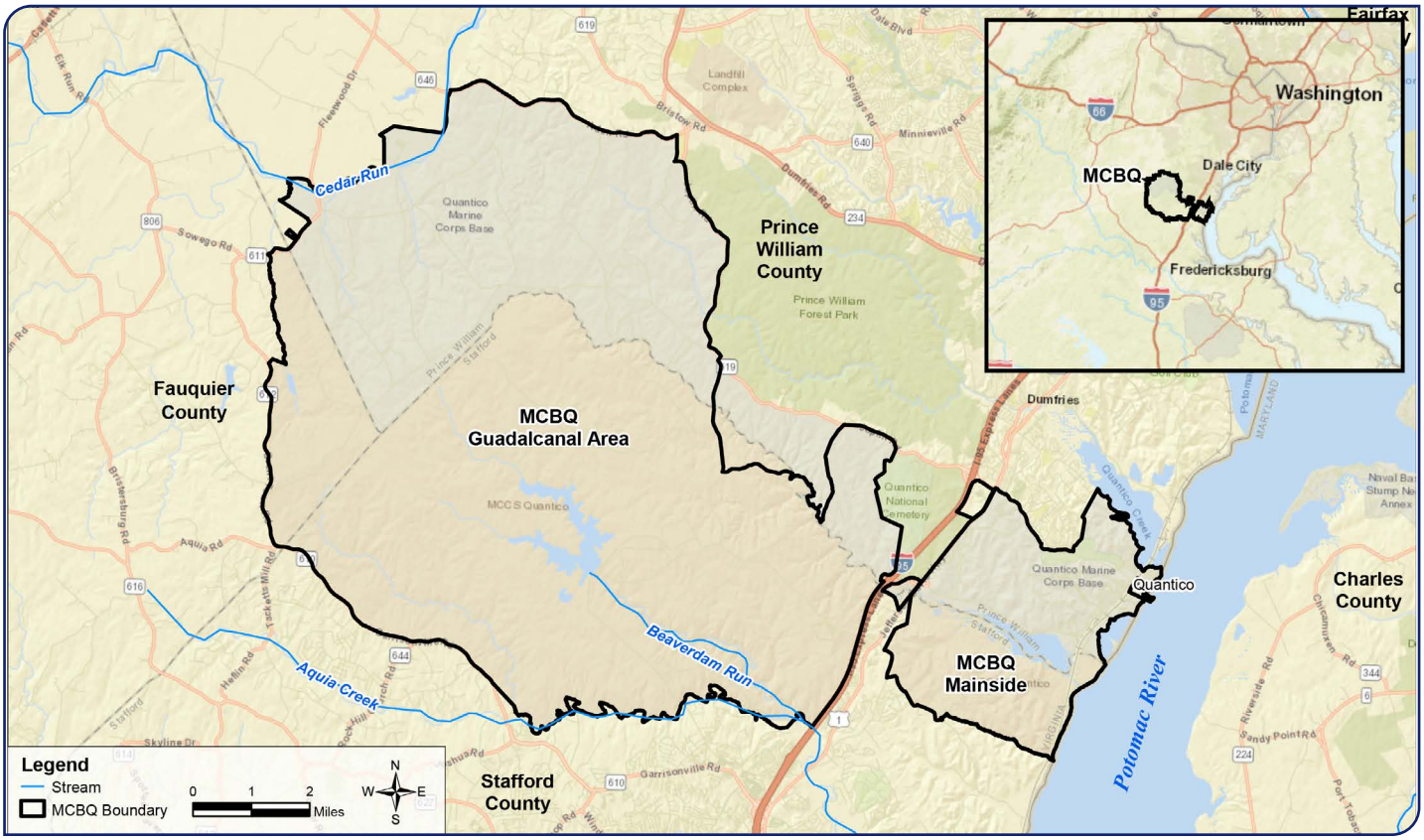
MCBQ is located approximately 35 miles south of Washington, D.C., and approximately 75 miles north of Richmond, Virginia. The Base is approximately 59,000 acres and lies within southern Prince William, northern Stafford, and eastern Fauquier counties. It is bounded to the north by Cedar Run and Virginia State Route 646; to the east by the Potomac River; to the south by Tank Creek, Aquia Creek, and Virginia State Route 610; and to the west by Dorrels Run and Virginia State Route 612. **Figure 1** illustrates the general location of MCBQ.

2.1.1 Base Land Use and Features

Most of the MCBQ property has always been devoted to outdoor training areas and live-fire ranges. The Base is divided into two sections—Mainside, located east of Interstate 95 (I-95), and the Guadalcanal (**Guad**) Area, located west of I-95 (**Figure 2**).

Mainside is the most developed portion of the Base, containing headquarters, housing, storage, supply, administrative, educational, medical, operational, maintenance, utilities, and other facilities.

FIGURE 1
MCBQ BASE LOCATION MAP



The majority of the Guad Area is used for training although developed areas are scattered throughout this portion of the Base. Within the Guad side are several training camps: Camp Barrett (home to The Basic School) is located along the southern boundary of the installation; Camp Upshur is located along the northern boundary; and Camp Goettge (abandoned) is located along the western boundary. Uses of these training areas include physical training, helicopter pilot training, squad tactics, small arms ranges, rocket ranges, grenade ranges, artillery ranges, machine gun ranges, bombardment ranges, land navigation, ordnance storage, and other training activities.

Also located within the Base boundary are several non-Marine Corps-managed properties. The Town of Quantico is located wholly within the Base, along the northeastern boundary. The Department of Justice complex consisting of the Federal Bureau of Investigation (**FBI**) laboratory, Drug Enforcement Administration/FBI Academies, and shooting ranges are located within the central portion of the Guad Area.

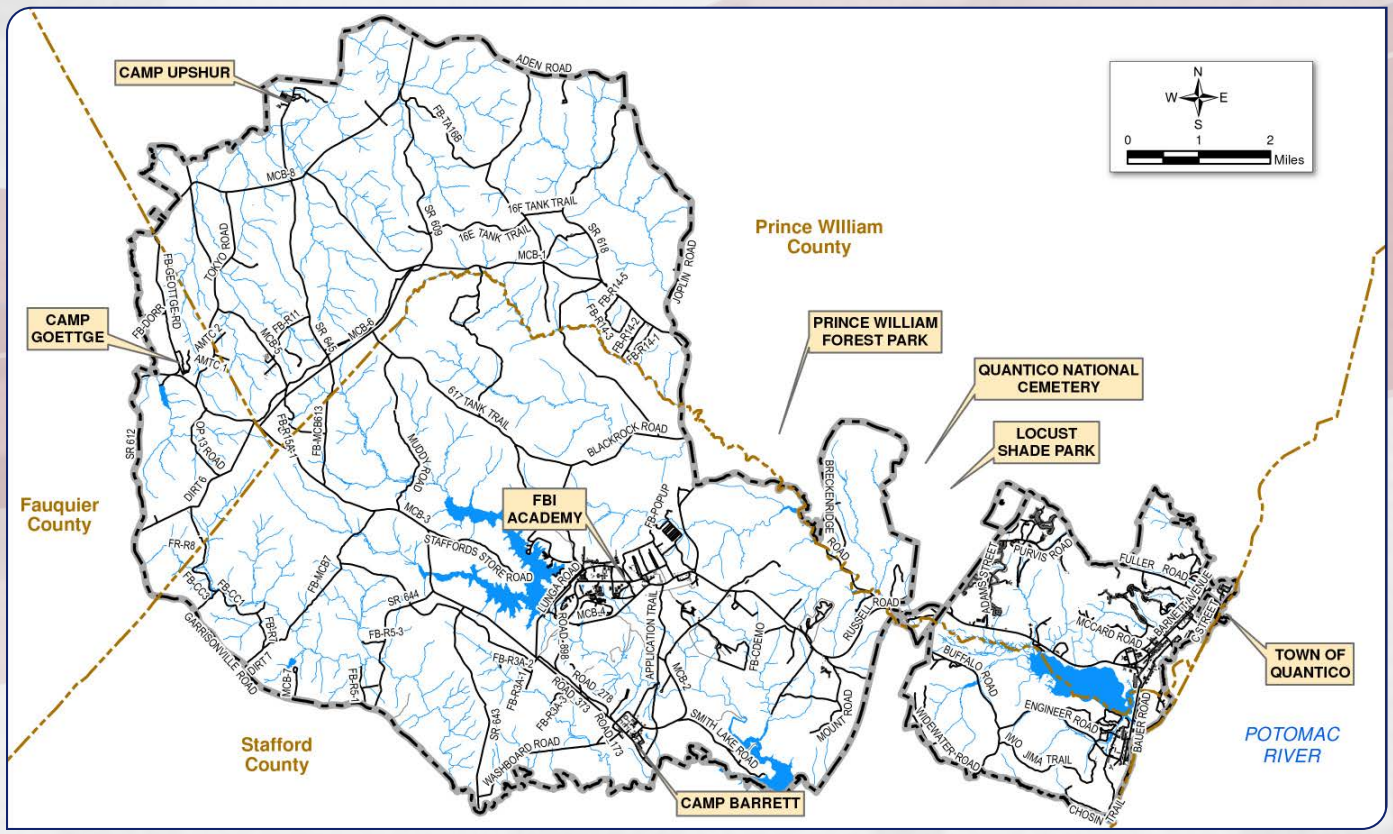
MCBQ is 88 percent forested, consisting of about 25 percent pine, 60 percent hardwoods, and 15 percent mixed pine/hardwood. These woodlands are used for training, recreation, timber management, aesthetics, wildlife management, and watershed protection.

Approximately 3,000 of the 59,000 acres at MCBQ are considered semi-improved grounds including fire-maintained grasslands, range target areas, powerline rights-of-way, landing zones, drop zones, and wildlife openings. Approximately 2,600 acres at MCBQ are considered improved grounds consisting primarily of buildings and associated lawn and landscape plantings. Approximately 3,900 acres of MCBQ consist of various types of wetlands including approximately 1,400 acres of nonforested wetlands (MCBQ, 2015).

2.1.2 Surrounding Land Use

Land surrounding MCBQ is generally rural, residential, or recreational. The Base is bounded on the east by more than 3 miles of Potomac River shoreline. Located just north of the Base is Prince William Forest Park, a national park that covers approximately 17,000 acres. Also, to the north is the Quantico National Cemetery, encompassing 726 acres near I-95 and Virginia State Route 619. Locust Shade Park is located adjacent to the Quantico National Cemetery and between I-95 and U.S. Route 1. The southern and western areas of the Base are primarily rural, although business and housing developments are growing along State Route 610. The town of Triangle borders the MCBQ main gate along U.S. Route 1 (CH2M, 2023).

FIGURE 2
BASE MAP



2.1.3 Surrounding Counties

Located in Prince William, Stafford, and Fauquier counties, MCBQ interacts with distinct communities with differing characteristics and priorities.

Prince William County is located within the Northern Virginia metropolitan area bordered by Fairfax and Loudoun counties to the north and Stafford County to the south. Prince William County has undergone tremendous growth in the past few decades. The county contains portions of the busy I-95 and I-66 corridors, with the principal population centers being the Woodbridge/Dale City area and the Manassas area. The northern and western portions of the county are rural in nature, with active agriculture and forested areas. The southern boundary of Prince William County runs through the Base (AECOM, 2014).

Stafford County is located approximately midway between Washington, D.C., and Richmond, Virginia. The northern edge of the county runs through MCBQ and the county is bordered to the south by the Rappahannock River and the City of Fredericksburg. The county's population centers are located along the I 95 and U.S. Route 1 corridors, particularly in the portions of the county south of the Base and on the northern edge of the Fredericksburg area. The county contains large rural areas and active agriculture to the west and southeast. While more rural than Prince William County, Stafford County has been growing as the Washington D.C. and northern Virginia suburbs and employment centers have expanded (AECOM, 2014).

Fauquier County is located to the west of the Northern Virginia metropolitan area within the Virginia Piedmont and is traversed by several major transportation routes, including I-66, U.S. 29, and U.S. 17. The county is primarily rural and agricultural in nature, with the Town of Warrenton representing the principal population center. The southeastern boundary of Fauquier County runs through the westernmost MCBQ training ranges (AECOM, 2014).

Photo By Sean Murphey, DoDEA

2.1.4 Parks and Recreation

MCBQ provides a variety of outdoor recreational opportunities, including hunting, fishing, mountain biking, trail running, and wildlife viewing. Other recreational facilities include an archery range, an 18-hole golf course, a bowling alley, a marina with motor and sailboat rental and slips, an outdoor 50-meter swimming pool, and a movie theater. The Barber Physical Activity Center offers a large variety of recreational opportunities with a 9,600-square-foot fitness deck, group exercise room, spin studio, functional fitness room, three racquetball courts, and one full-sized basketball court (MCCS Quantico, n.d.).

The Lunga Recreation Area is approximately 361 acres of forested land, lakeshore, and recreational areas located in the central quadrant of the Guad Area of MCBQ, between Lunga Road and Lunga Reservoir, and adjacent to the FBI Facility. Since the late 1950s, Lunga Park and Lunga Reservoir were used extensively for camping, boating, picnicking, fishing, and hiking. The area was closed in spring 2012 as a safety precaution because of potential munitions of explosive concern (**MEC**); however, Lunga Park and Lunga Reservoir were reopened in May 2023 to recreational use for authorized DoD patrons and guests.

Photo By Carrie Yacono

Prince William Forest Park, just north of MCBQ, is the largest protected property within the Washington, D.C., metropolitan area, and offers opportunities for hiking, fishing, bicycling, picnicking, orienteering, wildlife viewing, and camping. Locust Shade Park, a Prince William County park, is also located just north of the Base, and offers batting cages, a miniature golf course, a golf driving range, a marina building with boat rentals on an 8-acre lake, playgrounds, tennis and volleyball courts, pavilion rentals, fitness and nature trails, horseshoe pits, and an outdoor amphitheater. South of the Base, Stafford County also offers parks such as Smith Lake Park, with lighted baseball and soccer fields, picnic pavilions, paved trails, and a playground.

Photo By Cpl. Jackeline M. Perez

2.1.5 Medical Facilities

MCBQ offers several health clinics to the surrounding military community, including the John Henry Balch Health Clinic on Mainside, the John H. Bradley Branch Health Clinic (serving the Officer Candidate School), and the David R. Ray Branch Health Clinic (serving The Basic School). These clinics are run by appointment only. Nearby medical facilities include Stafford Hospital and Mary Washington Hospital in Fredericksburg, as well as local urgent care facilities and doctors' offices.

2.1.6 Schools

The DoD Education Activity operates two schools for students living in Base housing: Crossroads Elementary School (serves approximately 600 students, pre-K through 5th grade) and Quantico Middle/High School (serves approximately 350 students, grades 6 through 12) (DODEA, 2021a, 2021b). The Prince William County Public School District is the second-largest school division in Virginia, serving more than 90,000 students in more than 90 schools, including elementary, elementary/middle, middle, and high schools, as well as two Governor's schools and several alternative and special education schools (PWCS, n.d.). Stafford County Public Schools serve more than 29,000 students in 17 elementary schools, 8 middle schools, 5 high schools, and 1 school for alternative education (SCPS, n.d.). Fauquier County Public Schools serve more than 11,000 students in 11 elementary schools, 5 middle schools, 3 high schools, and 1 alternative learning school (FCPS, n.d.).

2.1.7 Drinking Water Sources


Photo By Benjamin Earwicker

The quality of the water on-Base affects potable water supplies in communities on- and off-Base. The Base watersheds supply water to the following five reservoirs (MCBQ, 2015):

- Breckinridge Reservoir, which supplies water to the Mainside area of MCBQ. This reservoir is the principal water supply for MCBQ and encompasses 47 acres with a watershed of almost 13,000 acres. The reservoir capacity is approximately 168 million gallons.
- Gray Reservoir, which is a secondary water source for the Breckinridge Reservoir. This reservoir is a constructed impoundment located approximately 1.5 miles below the Breckinridge Reservoir and is fed directly by the Chopawamsic Creek. Gray Reservoir is approximately 1.8 acres in size.
- Smith Lake Reservoir, which supplies water to Stafford County and the west side of MCBQ. This reservoir is 220 acres and has a capacity of 2 billion gallons. Water from the Upper Aquia Creek and Beaverdam Run watersheds goes to the Smith Lake Reservoir.
- Lunga Reservoir, which is a secondary water source for both Smith Lake and Breckinridge Reservoir. The reservoir is 477 acres with a watershed of 6,880 acres and capacity of 1.75 billion gallons.
- Lake Jackson, which provides water to Manassas in Prince William County. Lake Jackson is located approximately 4 miles north of MCBQ.

Potable water production supplies drinking water to a large percentage of the Base. Potable water from MCBQ comes from three sources, depending on the location on the Base:

- East of I-95: Potable water is provided to MCBQ buildings by the MCBQ Mainside Water System with water from the Mainside Water Treatment Plant. Source water is primarily from the Breckinridge Reservoir. The secondary water source for the Mainside Water Treatment Plant is Gray Reservoir with Lunga Reservoir set up to be a supplement, if necessary (Sullivan, 2020).
- West of I-95: Potable water is provided by the Camp Barrett Water System, which receives water from the Stafford County Utilities Department. Most Camp Barrett water is processed and delivered from the Smith Lake Water Treatment Plant, which draws water from Smith Lake Reservoir (MCBQ, 2021a; Stafford County, 2021). Camp Barrett also receives water from the Lake Mooney Water Treatment Plant, which draws water from the Lake Mooney Reservoir and Rappahannock River (Stafford County, 2021).
- Camp Upshur Water System: Potable water is provided by two deep groundwater wells. These wells are screened at depths greater than 300 feet below ground surface (bgs) (Tetra Tech, 2002; MCBQ, 2021a).

Reportedly, nine inactive groundwater supply wells exist at MCBQ (Tetra Tech, 2002). In approximately 1993, all of the wells were capped as recommended by VDEQ. All wells are inactive or on standby status for potential emergencies; none of these wells have been used for potable water for more than 20 years (Tetra Tech, 2002).

The neighboring communities of Eagle Pointe, Dale City, and Woodbridge, in Prince William County, use potable water provided by Fairfax Water. Sources of that water are the Occoquan Reservoir and the Potomac River (Fairfax Water, 2023).

The communities of Aquia Harbour, Garrisonville, Garrisonville Estates, and Tacketts Mill in Stafford County to the south of MCBQ have three surface water sources. The Smith Lake Water Treatment Plant draws water from the Smith Lake Reservoir. The Lake Mooney Water Treatment Plant draws water from the Lake Mooney reservoir as well as by pumping water from the Rappahannock River (Stafford County, 2021).

2.1.8 Population

The Town of Quantico is located wholly within the boundaries of MCBQ. Town residents must drive at least 2 miles through the Base to access U.S. Route 1 or I-95. The livelihood of the Town of Quantico relies heavily on providing services to military and civilian Base personnel. The Towns of Dumfries and Triangle are located near the Base and are also heavily influenced by MCBQ activities. **Table 1** presents the population data for MCBQ and the surrounding area compared with the Commonwealth of Virginia.

TABLE 1
U.S. CENSUS POPULATION DATA

	Population 2020	Population 2022 (estimated)	Percent Change 2020 to 2022
Quantico Base[a] (base residents)	5,221	N/A[b]	N/A
Town of Quantico	579	579	0%
Town of Dumfries	5,679	5,755	+ 1.34%
Town of Triangle	9,589	N/A[b]	N/A
Prince William County	482,204	486,943	+ 0.98%
Stafford County	156,927	163,380	+ 4.11%
Fauquier County	72,972	74,664	+ 2.32%
Virginia	8,631,393	8,683,619	+ 0.61%

Sources:
U.S. Census Bureau, 2022. https://www.census.gov/quickfacts/fact/table/US/PST045219
World Population Review, Quantico, Virginia Population, 2023. https://worldpopulationreview.com/us-cities/quantico-va-population

a Quantico Base is the name used by the Census Bureau to describe Base housing on MCBQ.
b Annual population estimates are available only for geographic areas with a population of more than 5,000.

N/A = not applicable

2.1.9 Employment and Income

MCBQ is a major contributor to the regional economy. As of 2021, the Base provided a total economic impact of $5.88 billion. MCBQ's workforce population consists of 26,927 personnel, of which 6,497 are military, and 10,549 are civilian, accounting for $1.62 billion in direct payroll (MCBQ, 2021b).

Except for Prince William County, the unemployment rates for Stafford and Fauquier counties tend to trend lower than the unemployment rate for the Commonwealth of Virginia, due primarily to the region's proximity to the Washington, D.C., and northern Virginia metropolitan area. **Table 2** presents the unemployment rates for Prince William, Stafford, and Fauquier counties compared with the Commonwealth of Virginia.

TABLE 2
UNEMPLOYMENT RATES

	Unemployment Rate June 2023[a]	Unemployment Rate June 2020[b]	Percent Change 2020 to 2023
Prince William County	2.9%	9.2%	- 6.3%
Stafford County	3.2%	7.8%	- 4.6%
Fauquier County	2.7%	6.4%	- 3.7%
Virginia	2.5%	8.9%	- 6.4%

Sources:
a Federal Reserve Bank of St. Louis, Economic Research, n.d. https://fred.stlouisfed.org/release/tables?rid=116&eid=256391#snid=256492
b U.S. Bureau of Labor Statistics, 2020. https://www.bls.gov/regions/mid-atlantic/news-release/unemployment_washingtondc.htm

2.1.10 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," signed in 1994, directs federal agencies to include environmental justice as part of their overall mission by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on people of color populations and low-income populations. Environmental justice refers to the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

In addition, Executive Order 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government," signed in January 2021, addresses the pursuit of a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality.

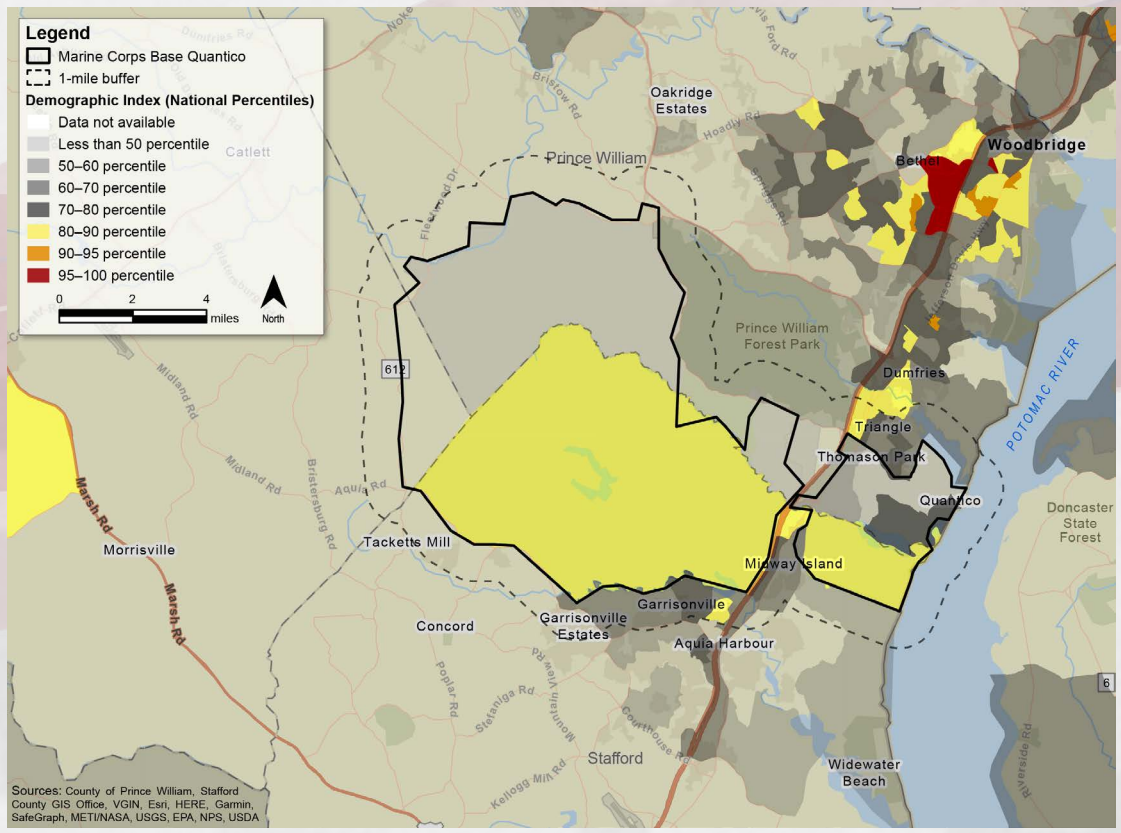
An environmental justice screening was conducted using EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN 2.0) (EPA, 2023b). EJSCREEN uses a combination of socioeconomic indicators, including data on low-income populations and people of color at the Census-block-group level to compare their locations to the rest of the state, EPA region, and the nation. The tool may help users identify areas with the following:

- People of color and low-income populations
- Potential environmental quality issues
- A combination of environmental and demographic and social indicators that is greater than usual

EJSCREEN was used to develop a demographic index for a 1-mile buffer region of influence around MCBQ. The demographic index is an average of two demographic indicators, specifically the low-income percentage of population and the people of color percentage. Results of the EJSCREEN are shown in terms of percentiles, indicating the U.S. population with a higher value for low-income and minority indicators. Percentiles at or above 95 percent indicate areas are of particular concern for environmental justice issues.

Figure 3 shows the EJSCREEN results for a 1-mile radius of MCBQ. About half the area in southern to mid-portion of Mainside and Guad areas of MCBQ fall into the 80th to 90th percentile, and one area in Guad registers in the 70th to 80th percentile. An area of Garrisonville just south of the Base within the 1-mile buffer and an area north of Thomas Park also register in the 80th to 90th percentile. The community of Woodbridge to the northeast of the Base contains areas registering in the 95th to 100th, 90th to 95th, 80th to 90th, 70th to 80th, 60th to 70th, and 50th to 60th percentiles, meaning that the population in those areas is potentially more susceptible to environmental impacts.

FIGURE 3
RESULTS OF EJSCREEN FOR 1-MILE BUFFER AROUND MCBQ



In addition, **Table 3** presents the minority populations in 2023 for MCBQ and the surrounding towns and counties compared with the Commonwealth of Virginia and national averages. It also presents the percent of the population living below the national poverty level.

The Navy is aware of the potential environmental concerns affecting the surrounding community from multiple sources, including MCBQ. The EJSCREEN helps inform Navy outreach efforts to communicate effectively, maintain transparency, and to be inclusive of all community members interested in and affected by ERP activities at MCBQ.

TABLE 3
MINORITY AND POVERTY POPULATIONS

	American Indian and Alaska Native alone	Asian alone	Black or African American alone	Hispanic or Latino	White alone	White alone, not Hispanic or Latino	Persons in poverty
Quantico Base[a] (base residents)	0.8%	2.8%	14.0%	23.1%	68.7%	55.1%	0.7%
Town of Dumfries	0.7%	2.8%	34.2%	38.9%	44.1%	21.3%	14.1%
Town of Triangle	2.1%	13.8%	38.2%	25.0%	29.6%	19.7%	9.5%
Prince William County	1.1%	10.7%	21.9%	25.8%	61.1%	39.1%	6.4%
Stafford County	0.9%	4.%	21.9%	16.3%	67.7%	54.4%	5.4%
Fauquier County	0.6%	1.9%	7.8%	11.4%	86.5%	76.5%	6.5%
Virginia	0.6%	7.3%	20.0%	10.5%	68.5%	59.8%	10.2%
United States	1.3%	6.3%	13.6%	19.1%	75.5%	58.9%	11.6%

Source:
U.S. Census Bureau, 2022. https://www.census.gov/quickfacts/fact/table/US/PST045219
a Quantico Base is the name used by the Census Bureau to describe Base housing on MCBQ.

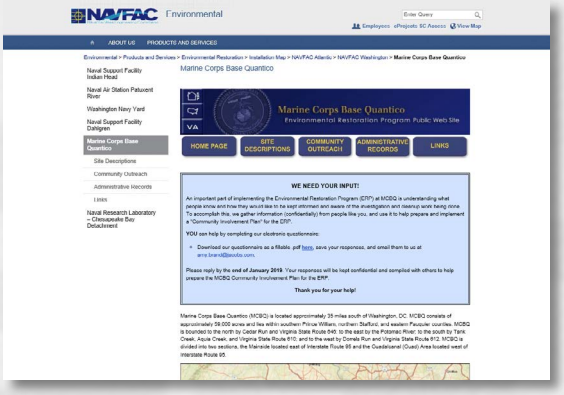

Photo By John Hollis

3: Community Issues, Concerns, and Preferences

This section describes the history of community involvement activities at MCBQ, previously known community concerns, and the process used to gather information on current concerns and communication preferences.

3.1 History of Community Involvement at MCBQ

One of the primary goals of a CIP is to provide opportunities for involvement to members of the local communities affected by environmental activities. A Technical Review Committee (TRC) for the MCBQ ERP was established in 1989. The TRC, which met every 2 years, was composed of Base personnel, members of federal and state regulatory agencies, elected and public officials, and local community members. Members reviewed technical documents and provided comments to the Navy. Initially, community members expressed an interest in environmental activities at the Base. However, after several years, returned TRC mailings increased, most likely because of the transient population in the surrounding communities. After several years of returned mailings, the Navy, in agreement with EPA and VDEQ, dissolved the TRC in the late 1990s.



3.2 Community Issues, Concerns, and Preferences

In an effort to identify community concerns and preferences for community involvement with environmental activities at MCBQ, the Navy conducted community interviews between December 1992 and January 1993, in September 1996, March 1998, and most recently between December 2018 and February 2019.

3.2.1 Process for Gathering Updated Community Input (2019)

To gather community input for updating the 2019 CIP, the ERP completed the following:

- A public notice was placed in the *Prince William Times* and *Free Lance-Star* newspapers in November 2016 to solicit interest in establishing a RAB. No response to this public notice was received.
- A written questionnaire was developed and emailed as a fillable .pdf to 1,137 residents of base housing at MCBQ in May 2018. Two responses were received.
- Hardcopies of the questionnaire were distributed on-base in May 2018. Six responses were received.
- A public notice was placed in the *Prince William Times* and *Free Lance-Star* newspapers in December 2018, soliciting interest in providing input for the CIP and providing the address of the MCBQ ERP website (https://go.usa.gov/xSpNF), where an announcement and copy of the fillable .pdf could be found. No responses were received through the MCBQ ERP website.
- Letters were mailed in November 2018 to 12 federal- and state-elected officials to inform them of the CIP update and that constituents would be contacted for interviews. The letter offered interviews to these elected officials upon request. No interviews were requested by federal- and state-elected officials.

Letters were mailed in November 2018 to 50 potential interviewees in the community. Potential interviewees were identified by Internet research and represented a broad cross-section of local elected officials, municipal employees, business representatives, environmental organization representatives, and other community representatives. Follow-up phone calls were made to arrange personal interviews. Personal interviews were conducted between December 2018 and February 2019 with 17 individuals. The written questionnaire was used to guide the personal interviews.

Copies of the written questionnaire, email to housing, public notices, and letters are found in **Appendix A**.

3.2.2 2019 CIP Community Feedback Summary

Most respondents indicated that MCBQ has a very good relationship with the community. Respondents cited specific examples of partnerships with the Base for environmental restoration and volunteer cleanups, bicycle races, festivals, and other community events. In general, respondents indicated that the Marine Corps has been very supportive and an excellent partner when working together on community events. In addition, local community officials appreciated that the Public Affairs Office notifies them when training activities will generate noise or vibration in the community.

On-Base respondents' concerns about the ERP tended to focus primarily on drinking water quality, with some interest in the MRP. Off-Base respondents tended to not express concern about the ERP unless contamination affected groundwater or surface waters off-Base. Most respondents indicated general interest in the ERP and several suggested that "good news" and success stories be publicized more.

The 2019 CIP indicated that community members got their local news from social media (primarily Facebook), websites (especially the main MCBQ website and county or town websites), television, and newspapers (both print and online.) The newspapers most commonly cited were the *Prince William Times*, *Fauquier Now*, *Fauquier.com*, and the *Free Lance-Star*. On Base respondents identified sources of local news as primarily the main MCBQ website, emails from military housing, and the MCBQ Facebook page.

Respondents indicated they would like information about the ERP through the MCBQ website or by direct email notification. Respondents also suggested many ways the MCBQ could communicate about the ERP to the community, including the following (generally in order of most commonly suggested):

- Social media (especially Facebook)
- Websites (updates to the main MCBQ website, links on local county and town websites)
- Email notifications to interested parties (especially county and town officials and environmental representatives, who could then pass notifications along to their networks)
- Updates to county supervisors (who tend to issue monthly newsletters or updates to their constituents)
- Announcements through existing Marine Corps channels (mass notifications about events, emails to Base housing)
- Presentations to existing groups (for example, boards of supervisors, town councils, regional environmental organizations)

Other suggestions included issuing an annual "good news" update or fact sheet, placing a display at the Marine Corps Museum, involving faculty and students at George Mason University's Potomac Research Laboratory, and placing notices (potentially in Spanish as well as English) at two locations (Dunkin Donuts and Harold and Cathy's Dumfries Café) along U.S. Route 1 in Dumfries, where respondents reported that a smaller percentage of the population has home computers than average.

Appendix B contains a compilation of responses to the written questionnaire and personal interviews, transcribed onto the written questionnaire form.

4: Community Involvement Action Plan

Based on the community's issues, concerns, and preferences described in the previous section, this section describes the specific techniques and activities that will be implemented to support the ERP community involvement goals and objectives.

4.1 Goals and Objectives

As part of the ERP, the Navy has implemented a community involvement program to address issues of community concern regarding environmental investigation and restoration activities at the Base. The main goal of the MCBQ community involvement program is to achieve effective, open communication between the Navy, the base, and community members throughout the life of the ERP.

The primary objectives of the ERP community involvement program at MCBQ are to:

- Encourage and promote two-way communication between the Navy, the base, and concerned individuals in the community.
- Inform the public of planned and ongoing cleanup actions, major findings, and decisions, including opportunities for involvement in decision-making.

The community involvement program for MCBQ is designed to encourage involvement in the ERP by providing information to the public and media on a timely basis. The program is also designed to be flexible so that it can be revised as community information needs evolve and change.

This CIP provides the framework for MCBQ's ERP community involvement program. Community outreach activities are based on CERCLA requirements as outlined in EPA's Superfund Community Involvement Handbook (EPA, 2020), as well as on community suggestions and feedback as described in **Section 3**. The activities outlined here will be implemented at the discretion of the Navy.

4.2 CERCLA-Required Community Involvement Activities

CERCLA requires specific community involvement activities to be implemented at various steps in the environmental investigation and remediation process so that the public is kept informed and has an opportunity to be involved in the decision-making process. The following is a description of how those activities are implemented at MCBQ.

4.2.1 Determine the Need for a Restoration Advisory Board

Restoration Advisory Boards (RABs) fulfill a statutory requirement for the DoD to establish, whenever possible and practical, a committee to review and comment on DoD actions and proposed actions regarding environmental restoration. DoD strongly encourages RABs at bases where environmental restoration activities occur and where there is community interest in establishing a RAB. TRCs satisfy the same statutory requirements as a RAB, but RABs are the preferred forum.

According to the DoD's RAB Rule Handbook (DoD, 2007), the installation will establish a RAB when there is sufficient and sustained community interest and one of the following criteria is met:

- The installation is closing and transferring property to the community.
- At least 50 local citizens have petitioned for a RAB.
- Federal, tribal, state, or local government representative have requested a RAB.
- The installation has determined the need for a RAB.

The Navy first solicited potential public interest in establishing a RAB in November 1996 by conducting a public open house; however, community interest was limited. In December 2016, a public notice was placed in the *Prince William Times* and *Free Lance-Star* newspapers, again to solicit interest in establishing a RAB; no response to this public notice was received. The criteria for establishing a RAB have not yet been met. However, DoD will make the opportunity to establish a RAB available if the community becomes interested and will assess community interest every 24 months while environmental restoration activities are still ongoing (DoD, 2007). The Navy plans to reassess the need for a RAB in 2024. The Base Commander will consider the input received and determine whether to establish a RAB for MCBQ. Should a RAB be established, the Navy will follow guidance in the RAB Rule Handbook for recruiting and selecting RAB members who represent a cross-section of the community, schedule initial training meetings, and work with the RAB members to develop a mission, charter, and ground rules. The Navy would appoint a co-chair, and the community members of the RAB would elect a community co-chair. The RAB would then begin meeting regularly (typically one to four times per year) to discuss issues related to the ERP, with RAB members serving a communication liaison function with the surrounding community.

4.2.2 Maintain and Update Mailing Lists

Community responses received for the 2019 CIP update indicated a preference for email updates about the ERP. The Navy will maintain and update the mailing list, which includes local officials, local media, and other interested parties. Names may be added to the list throughout the environmental restoration process. Key community contacts, who are included on the mailing list, are identified

in **Appendix C** (for privacy, individual community members' names are not included in the appendix). Individuals on the mailing list will receive general information such as fact sheets outlining the status of the investigation, notices of community meetings, and copies of news releases regarding the ERP. To be added to the mailing list, interested individuals should provide their name, title (if appropriate), address, and telephone number to the MCBQ NREA Point of Contact listed in **Section 4.2.9**.

4.2.3 Publish Public Notices

Newspapers are an important medium for providing information to communities. Public notices will be issued to provide notice of meetings, the availability of a technical document, or other pertinent information. Under CERCLA, public notices are required to announce the availability of some specific technical documents (refer to **Section 4.4**), such as Proposed Plans. The Navy issues public notices in the *Free Lance-Star* and the *Prince William Times*. The most recent public notice examples are included in **Appendix D**.

4.2.4 Hold Public Meetings

Public meetings are intended to inform the community about ongoing site activities and to discuss and receive feedback from the public on proposed courses of action. Public meetings will be held as required for certain site activities, as shown in **Section 4.4**, Timing of Activities. In addition, informal meetings may be held to keep community groups and citizens informed of site activities. Recently, the Navy has held proposed plan public meetings online, while also offering an opportunity to hold a public meeting in person upon request.

The Navy will continue to hold (or offer to hold) public meetings as required by CERCLA. Additional public meetings will be held as needed or requested.

4.2.5 Provide Comment Periods

Public comment periods are held at milestones in the environmental cleanup process and are often accompanied by a public meeting. These milestones include the completion of a Proposed Plan, and an Engineering Evaluation and Cost Analysis and Action Memorandum. Public comment periods typically last a minimum of 30 days, allowing time for interested parties to review and comment on the proposed action.

4.2.6 Prepare Responsiveness Summaries

As required by CERCLA, a Responsiveness Summary is prepared following a public comment period to document the comments received and the Navy's responses to major comments. The summary provides decision makers information about the community concerns and preferences. It also provides the public with a record of the concerns raised and how the Navy considered the questions and concerns during decision-making.

Information obtained from public meetings and written comments are used to develop a Responsiveness Summary, which is included in the Record of Decision (**ROD**) (or Action Memorandum) and placed in the information repositories and Administrative Record file.

The Navy will continue to prepare a Responsiveness Summary or minutes that summarize and respond to the comments received during a public comment period, including comments provided at a public meeting, if one is held. The Responsiveness Summary will be issued as part of the document under comment and made available in the information repositories and Administrative Record file.

Fact Sheet
Marine Corps Base Quantico
Munitions Response Program
Lunga Park Recreation Area (UXO-034) &
Lunga Reservoir (UXO 035)

What's going On?

Site History

Previous Investigations and Actions

Lunga Playground 2.36" rocket found near playground

4.2.7 Prepare and Distribute Fact Sheets

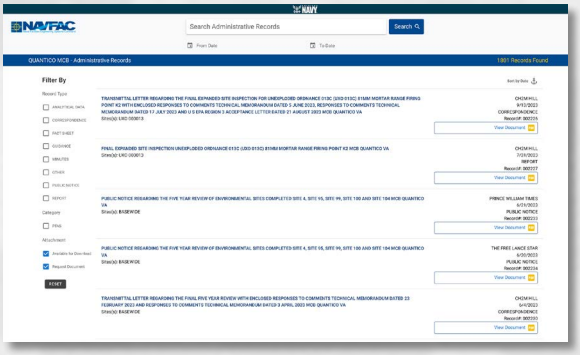
Fact sheets are produced to inform the public of the status and significant findings of specific cleanup activities. Fact sheets provide detailed information about site history and planned technical activities and provide updates on schedules and next steps. Fact sheets are required at some stages of the CERCLA process, but they may also be prepared as new information becomes available. Fact sheets are posted on the MCBQ ERP website and are placed in the information repositories and Administrative Record file.

Photo By Jeremy Beale

4.2.8 Maintain the Information Repository and Administrative Record File

Under CERCLA regulations, the Navy is responsible for maintaining an information repository containing current documents of potential public interest. Information repositories are placed at convenient, easily-accessible locations such as a public library. Documents in the information repository may include:

- CIP
- Site Management Plan
- Remedial Investigation (**RI**) Reports
- Feasibility Study (**FS**) Reports
- Proposed Remedial Action (**RA**) Plans
- Signed RODs
- News releases, community notices, public meeting minutes, and fact sheets



CERCLA regulations also require that an Administrative Record be established at or near the facility under investigation. The Navy has established an Administrative Record at the NREA Branch office located at the Base (**Table 4**). It includes all documents leading to the selection of any Navy's response action at MCBQ.

For public convenience, a searchable electronic file of the Administrative Record is also available on the MCBQ ERP website (https://go.usa.gov/xSpNF).

TABLE 4
LOCATION OF MCBQ PUBLIC INFORMATION REPOSITORIES AND ADMINISTRATIVE RECORD FILE

Repository	Location	Hours	Contact
Chinn Park Regional Library (Prince William County) https://gisweb.pwcva.gov/webapps/ago/librarylocator/	13065 Chinn Park Drive Woodbridge, VA 22192	Monday–Wednesday: 10:00 a.m.–8:00 p.m. Thursday–Saturday: 10:00 a.m.–5:00 p.m. Sunday: 1:00 p.m.–5:00 p.m.	Telephone: (703) 792-4800
Central Rappahannock Regional Library (Porter Branch) https://www.librarypoint.org/locations/PORTER	2001 Parkway Blvd Stafford, VA 22254	Monday–Thursday: 9:00 a.m.–8:00 p.m. Friday and Saturday: 9:00 a.m.–5:30 p.m. Sunday: Closed	Telephone: (540) 372-1144 Branch Manager (x7330): porter.manager@crrl.org
MCBQ NREA Branch	2006 Hawkins Ave Quantico, VA 22134	Call for appointment	Telephone: (703) 784-4030

4.2.9 Publicize Points of Contact

The NREA Point of Contact is responsible for distributing information about the environmental restoration work at MCBQ, including ensuring that inquiries about the progress of the investigation, remedial actions, and other decisions regarding the CERCLA cleanup activities are responded to in a timely and accurate manner. MCBQ's NREA Point of Contact's information is provided in fact sheets and public notices for more information.

MCBQ's CommStrat Office (formerly Public Affairs) is responsible for responding to inquiries about MCBQ in general; however, he or she shall refer to the NREA Point of Contact for specific questions about the ERP.

Key points of contact and their roles in the ERP are included in **Table 5**. These points of contact should be widely publicized on all ERP documents and websites.


Photo By
Ameesha Felton

TABLE 5
KEY ERP POINTS OF CONTACT

Point of Contact	Primary contact for:	Contact Information
NAVFAC Washington	Quesions and concerns about the ERP at MCBQ in general. Overall responsiblity for managing the ERP.	Naval Facilities Engineering Systems Command – Washington 1314 Harwood Street SE Building 212 Second Floor Washington Navy Yard, DC 20374-5018 Chyanne Nader (202) 975-8191 chyanne.n.nader.civ@us.navy.mil Rodney Aguirre (202) 695-9370 rodney.a.aguirre@us.navy.mil
NREA	Questions and concerns about planning and coordination of the ERP projects at MCBQ. Requests for a public document or comments on a document during a public comment period. Questions about accessing the Administrative Record file.	MCBQ ERP Coordinator NREA Branch 2006 Hawkins Ave Quantico, VA 22134 (703) 432-0521 (703) 784-4030
CommStrat	Questions about MCBQ in general.	Quantico CommStrat Office Attn: Community Relations 3250 Catlin Ave Quantico, VA 22134 (703) 784-2703/2704 QUAN_ComRel@usmc.mil

4.2.10 Update the Community Involvement Plan

As required under CERCLA, a CIP is a written plan outlining how the Navy will communicate with the public, elected officials, environmental groups, and other stakeholders throughout the environmental restoration process, including methods for obtaining their input at appropriate decision-making points. The CIP is made available to the public in the information repository and the Administrative Record.

The first CIP for the ERP at MCBQ was published in September 1995 with updated CIPs developed in 2004 and 2019.

Under CERCLA, a revision to the CIP should be considered: (1) after a ROD is signed, if significant community concerns are discovered that pertain to the remedial design (**RD**) and construction phase; or (2) as appropriate when a major change in the ERP occurs. Otherwise, Navy guidance (Navy, 2018) recommends updating the CIP every 3 to 5 years. Therefore, this CIP should be updated again by no later than 2028.

4.2.11 Publicize Technical Assistance Grant Opportunities

Three programs are available to assist communities in obtaining the technical resources needed to effectively review and evaluate environmental restoration activities.

1. Technical Assistance for Public Participation

In 1998, DoD established the Technical Assistance for Public Participation (**TAPP**) program to enable RABs to hire a qualified person to provide technical assistance.

The purpose of TAPP is to assist RAB community members in obtaining independent assistance in interpreting scientific and engineering data related to environmental hazards and restoration at DoD installations with ERPs. TAPP funds are limited to an annual limit of $25,000 or 1 percent of the cost to complete, whichever is less, and $100,000 over the life of the environmental restoration program at the installation.

Should the Navy establish a RAB, it would be eligible to apply for a TAPP program grant. The Navy would provide a presentation to the RAB on the TAPP program.

2. Technical Assistance Grant

The Technical Assistance Grant (**TAG**) program, which was established under SARA of 1986, promotes community involvement by providing qualified community groups (for example, RABs and TRCs) with funds to help the community participate in the decision-making process at NPL sites. TAGs allow community groups to obtain objective, independent scientific and engineering support by hiring a technical advisor, who can assist the community in interpreting and commenting on the cleanup process. EPA has specific guidelines for groups that apply for and administer TAG grants, and the value is limited to $50,000 per NPL site. Because MCBQ is listed on the NPL, community groups may be eligible to apply for a TAG. Eligibility requirements and more information about TAGs can be found on EPA's TAG website (EPA, 2023c).

Should the Navy establish a RAB, the RAB would be eligible to apply for a TAG and EPA would provide a presentation on the TAG program.

3. Technical Assistance Services for Communities

The Technical Assistance Services for Communities (**TASC**) program is a national EPA program that provides technical assistance services to communities. To support healthy communities and strengthen environmental protection, EPA works closely with communities to make sure they have the technical help they need. Sometimes, a community may need more help to fully understand local environmental issues and participate in decision-making. The purpose of the TASC program is to meet this need. The TASC program supplies communities with technical help so they can better understand the science, regulations and policies of environmental issues and EPA actions. TASC services support community efforts to get more involved and work productively with EPA to address environmental issues. TASC services are provided at no cost to communities. More information about the TASC program can be found on the EPA TASC website (EPA, 2023d). The TASC program replaced the similar Technical Outreach Services for Communities program in 2006.

Should the Navy establish a RAB, EPA would provide a presentation on the TASC program.

4.3 Community Involvement Program Enhancements

In response to community feedback, the following additional community involvement activities may also be implemented by the Navy, to supplement the current community involvement program, and increase awareness of ERP activities, project successes, and resulting benefits to the local community.

4.3.1 Social Media

Social media is an increasingly important source of community information that can be conveniently accessed. Social media is a preferred method of communication expressed by participants in the 2019 CIP interviews. The Navy may announce public comment periods, public meetings, distribute brief messages or link newspaper articles or other media sources via social media. Social media sites allow quick and convenient messaging of MCBQ ERP information.

The preferred social media platform expressed in the interviews for the 2019 CIP was Facebook. MCBQ has an active Facebook page with more than 116,000 followers at https://www.facebook.com/MarineCorpsBaseQuantico/.

The Navy has used the existing MCBQ's Facebook page as an additional means of distributing ERP information. Posts have included information about upcoming public comment periods or public meetings. Posts could also address how to access materials in the AR, and links to other sources of information such as fact sheets. In addition, the Navy may encourage local municipalities and environmental groups to share similar information through their social media sources. An image of the most recent Facebook post is located in **Appendix E**.

4.3.2 Website

A website enables community members to access key information about CERCLA and detailed information about ERP on their own time and at minimal expense. Internet technology allows new information to be made available quickly and enables information to be

delivered in a user-friendly manner and at the convenience of the user's schedule. Increasingly, people rely on the internet to obtain information in addition to providing convenient access to information. The Navy's website for the MCBQ ERP is https://go.usa.gov/xSpNF. The Navy uses the website to distribute information about upcoming public comment periods and has posted voice-over presentations online so that the public can access the presentation during a public comment period without attending a public meeting. Public notices direct people to the MCBQ ERP website.

4.3.3 Distribute and Publicize Updates and Fact Sheets

Updates and fact sheets will be developed at the discretion of the Navy, to better inform the public of planned technical activities, updates, significant findings, and accomplishments of the program. Respondents to the questionnaires and community interviews expressed interest in periodic (annual) updates on progress.

Improved distribution of updates and fact sheets may include:

- Printing a public notice in the newspaper with a link to the MCBQ ERP website.
- Sending a press release to newspapers to solicit interest in a story.
- Sending electronic fact sheets or updates (or a brief announcement with a link to the fact sheet or update on the MCBQ ERP website) to County Supervisors to be included in their communications to constituents.
- Sending electronic fact sheets or updates to County and Town officials, and environmental representatives for distribution through their own networks.
- Providing a brief update and a link to the MCBQ ERP website to towns and counties to place on their own websites and/or Facebook pages.
- Placing announcements and links to the MCBQ ERP website on the MCBQ Facebook page.
- Distributing announcements and links to the MCBQ ERP website through existing Marine Corps communication channels, including email notification.

4.3.4 Offer Presentations

The Navy may offer to make occasional presentations on the overall environmental restoration process, program status, and accomplishments to existing groups of community leaders. During community interviews, respondents suggested making presentations at existing meetings of groups such as County Boards of Supervisors (particularly after an election), town councils, and regional environmental organizations.

4.4 Timing of Community Involvement Activities

To achieve the objectives of informing the public and providing a means of two-way communication, many community involvement activities are performed on an ongoing basis. **Table 6** summarizes the general timing of the community involvement activities described in this CIP for MCBQ.

TABLE 6
TIMING OF COMMUNITY INVOLVEMENT ACTIVITIES

Activity	Annually	Once Every 2 Years	Once Every 5 Years	As needed or as appropriate	As required by CERCLA
Determine the Need for a RAB		■			
Maintain and Update Mailing Lists				■	■
Publish Public Notices				■	■
Hold Public Meetings				■	■
Provide Comment Periods					■
Prepare a Responsiveness Summary					■
Prepare and Distribute Fact Sheets				■	■
Maintain the Information Repository and Administrative Record				■	■
Publicize Points of Contact	■			■	■
Update the CIP			■	■	■
Publicize TAG Opportunities				■	■
Distribute and Publicize Fact Sheets and Updates				■	
Offer Presentations				■	

In addition to ongoing community involvement activities, some activities are associated with specific CERCLA program milestones. **Tables 7 and 8 show** the community involvement activities that are required or recommended for the various steps in the CERCLA process.

TABLE 7
REMEDIAL INVESTIGATION AND ACTION PROCESS – COMMUNITY INVOLVEMENT REQUIREMENTS

Community Involvement Activity	CERCLA Steps						
	PA/SI	RI/FS	Proposed Plan	ROD	RD	RA	Five-year Review
Mailing List		▬	▬	▬	▬	▬	
Public Notice			■	■	❍[a]	❍	■[b]
Public Meetings		❍	❍[c]	❍	❍[d]	❍	❍
Public Comment Period			■				❍
Responsiveness Summary				■			
Fact Sheet		❍	❍[e]	❍	■[d]	❍	❍
Information Repository	■	▬	▬	▬	▬	▬	■
Administrative Record		■	▬	▬	❍[f]	❍[f]	❍[f]
Points of Contact	❍	▬	▬	▬	▬	▬	❍
CIP[g]	■	❍	❍	❍	■	❍	❍
TAG/TAPP	■	▬	▬	▬	▬	▬	

Notes: This table is a summary of CERCLA-required activities for most steps in the CERCLA process. A complete list of required activities can be found in Appendix A of EPA's Superfund Community Involvement Handbook (EPA, 2020).

■ Actions required by CERCLA or SARA regulations, or by Navy ERP or MRP policy.

❍ Discretionary activities, determined by community interest or as needed

▬ Ongoing Activity

a A public notice is not required for an RD. However, after completion of the ROD, should the remedial action differ significantly, an "Explanation of Significant Differences" must be placed in the information repository and Administrative Record, and a public notice published in the newspaper.

b Twice, when the Five-Year Review is beginning and when that review has been completed, to provide the results of the review.

c An opportunity for a public meeting must be provided for a Proposed Plan.

d The National Contingency Plan 40 CFR 300.43I)(3) states that the lead agency shall issue a fact sheet and provide, as appropriate, a public briefing prior to initiation of the remedial action.

e Proposed Plans may be developed in a fact sheet format. If a more formal report format is used, a fact sheet may be prepared to summarize it.

f Only if relevant to later response selection decisions. RD and RA documents, reports, and plans are normally part of the Post Decision File, rather than the Administrative Record, because such documents are not "considered or relied on in the decision process."

g The CIP will be updated at strategic project milestones to reflect changing community interests and concerns, or at least every 3 to 5 years so long as the ERP is active (as per Navy guidance). The NCP states that prior to initiation of the RD, the lead agency shall review the CIP to determine whether it should be reviewed to describe further public involvement activities during RD/RA that are not already addressed or provided for in the CRP.

PA = Preliminary Assessment
SI = Site Inspection

TABLE 8
REMOVAL ACTION PROCESS – COMMUNITY INVOLVEMENT REQUIREMENTS

Activity	Time-critical Removal Action[a]		Non-time-critical Removal Action[b]
	Onsite Activity Lasts Less than 120 Days	Onsite Activity Lasts More than 120 Days	
Agency Spokesperson	■	■	■
Administrative Record	■	■	■
Contact State and Local Officials	■	■	
Information Repository		■	■
CIP[c]		■	■
Public Notice[d]	■	■	■
Public Comment Period[e]	■	■	■
Response to Comments[e]	■	■	■

Notes: This table is a summary of CERCLA-required activities for most steps in the CERCLA process. A complete list of required activities can be found in Appendix A of EPA's Superfund Community Involvement Handbook (EPA, 2020).

■ Actions required by CERCLA or SARA regulations, or by Navy ERP or MRP policy.

a Releases or threats of releases that require cleanup to begin within 6 months after the lead agency determines that a removal action is necessary.

b Releases or threats of releases that do not require cleanup to begin within 6 months after the lead agency determines that a removal action is necessary.

c For removal actions expected to extend beyond 120 days or with a planning period of at least six months, community interviews must be conducted, and a CIP prepared (or updated as needed if one already exists).

d For removal actions with a planning period of less than 6 months, a public notice of the availability of Administrative Record must be published in the newspaper within 60 days of the initiation of onsite removal activity. For a Non-time-critical Removal Action, a public notice of the availability and a brief description of the Engineering Evaluation/Cost Analysis must be published in the newspaper.

e If appropriate for a Time-critical Removal Action, that is, if the community might be affected and public comments on the removal action are expected to affect future action at the site, a public comment period should be held during the planning or execution of the removal action. For a Non-time-critical Removal Action, a public comment period is held for the Action Memorandum and Engineering Evaluation/Cost Analysis. When a public comment period is held, a Responsiveness Summary is prepared.


Photo By Cassandra Brown

5: The Base

This section describes MCBQ's history and mission, its environmental history, the regulatory framework and steps for environmental restoration, and summarizes the current site status.

5.1 History and Mission

5.1.1 Commissioned

May 14, 1917

5.1.2 Base History

MCBQ's modern military history began in 1917, when 5,300 acres near the Town of Quantico were leased from the Quantico Company by the United States Government to provide a place to train Marines for World War I. In July 1918, Congress authorized the purchase of the land.

The Marine Corps Air Station (MCAS) began operations at Quantico in July 1918, training thousands of Marines for World War I. A permanent facility was constructed at Brown Field in 1919 and remained operational until 1931 when the present airfield was built east of the Richmond, Fredericksburg, and Potomac railroad tracks.

In 1921, the Marine Corps Schools were formally established to provide vocational and technical training to Marines at various stages in their careers. At the time, the schools developed a particular expertise in amphibious warfare techniques that became the basis for many of the amphibious operations executed during World War II.

With the outbreak of World War II, MCBQ's chief function became that of training Marine officers. Prior to the war, there were only 2,000 active-duty Marines. By war's end, this number had increased to 37,000. To accommodate this tremendous increase in required labor, additional land and facilities were needed at Quantico. In 1943, almost 51,000 acres of land were acquired west of U.S. Route 1 to provide live fire training opportunities.

During the war, all tactical air squadrons were relocated to the West Coast, and the MCAS at Quantico became primarily a repair, test, and modification facility. In 1947, Quantico Marines developed the idea of using helicopters to carry troops from ship to shore and Marine Helicopter Squadron 1, commonly referred to as HMX-1, was established. In 1953, HMX-1 was assigned the mission of providing transportation for the President, Vice-President, Cabinet members, and foreign dignitaries as directed by the Director, White House Military Office. The MCAS was officially downgraded to the Marine Corps Air Facility Quantico in November 1976.

Further development of the Guad Area occurred during the Korean Conflict when Camps Goettge, Upshur, and Barrett were built in 1950 for training. On January 1, 1968, the Base officially became the Marine Corps Development and Education Command. On November 10, 1987, the name was changed to the Marine Corps Combat Development Command. These designations reflect the Base's dual mission of training and research and development.

Marine Corps University was established in 1989 to provide the structure and policy for professional military education across the Marine Corps. In 1995, the Base became home to the Marine Corps Warfighting Laboratory. The laboratory's mission is to conduct experimentation in 21st century warfare, using war games and experiments to produce new tactics and technologies. Additionally, the U.S. military, particularly the Marine Corps, began to play a greater role in peacekeeping and humanitarian assistance operations. The DoD established the Joint Non-Lethal Weapons Directorate in 1997, to provide the military with greater flexibility in dealing with the challenges of Military Operations Other Than War.

5.1.3 Mission

MCBQ commands and controls assigned organizations and provides facilities and services to tenant commands, military and civilian personnel, and family members in order to promote and sustain training, readiness and facilitate Inter-Agency, Joint, and Service-level missions (MCBQ, n.d.).

5.1.4 Base Tenants and Commands

Base tenants include colleges, schools, and other Marine Corps commands. **Table 9** lists the tenants at the Base.

TABLE 9
BASE TENANTS

Colleges	Schools	Other Tenants/Commands
• Marine Corps University • Marine Corps War College • Marine Corps Command & Staff College • Marine Corps College of Continuing Education	• Expeditionary Warfare School • Communications School • Enlisted Professional Military Education • Alfred M. Gray Marine Corps Research Center • The Basic School • Officers Candidate School	• Marine Corps Systems Command (MARCORSYSCOM) • Marine Security Guard • Marine Helicopter Squadron One (HMX-1) • Marine Corps Air Facility Turner Field • Marine Corps Recruiting Command • Navy-Marine Corps Relief Society • Human Resources and Organizational Management • Defense Commissary Agency • Weapons Training Battalion • Joint Non-Lethal Weapons Directorate • American Red Cross • Federal Bureau of Investigation Academy • Defense Intelligence Agency • Defense Security Service • Naval Criminal Investigative Services • Air Force Office of Special Investigations • Army Criminal Investigation Command

Source: CH2M, 2023.

Based on the August 2022 population report 26,927 people work on MCBQ with the following distribution (Military Installations, n.d):

- Military – 6,497
- Civilian – 10,549
- Contractors – 4,874
- Students (military, FBI, Drug Enforcement Administration) – 5,007

In addition, 4,039 people reside in military family housing on-Base and 520 people reside in the Town of Quantico located within the Base boundary. Family housing on-Base at MCBQ consists of 1,137 homes in 7 communities within Mainside; there is no family housing within the Guad Area (Lincoln Military Housing, n.d.).

5.2 Environmental History

MCBQ's history and mission have required the use, handling, storage, and disposal of hazardous materials and petroleum products, including paints, solvents, degreasers, waste oil, fuels, pesticides/herbicides, and household products. Typical activities at MCBQ included maintenance of aircraft, vehicles, and engines; fuel and oil storage and distribution; landfill disposal; weapons cleaning and repair; facilities maintenance; photograph processing; medical and dental clinics; munitions operations; and water and sewage treatment. In the past, few (if any) regulations guided these activities, and little was known about the long-term effects of hazardous materials on human health and the environment. Prior to the 1980s, hazardous materials came into contact with the environment through accidental spills, leaks, and conventional waste disposal practices. These occurrences may have resulted in conditions that do not meet today's stricter and more comprehensive environmental standards.

Currently, all hazardous materials and wastes generated at MCBQ are managed in accordance with federal and state regulations and are disposed of or recycled offsite at licensed waste disposal facilities. Past releases to the environment are being addressed by the Navy's comprehensive cleanup program. This focus on the cleaning up of past waste disposal practices and controlling current practices enables the Navy to reduce any adverse effects or potential threat to the public health, public welfare, or the environment.

5.3 Regulatory Framework

5.3.1 CERCLA

Federal environmental laws provide the framework for cleanup activities conducted at MCBQ. MCBQ's cleanup activities are specifically driven by CERCLA, as amended by SARA and the 1984 Hazardous and Solid Waste Amendments to the Resource Conservation and Recovery Act **(RCRA**).

In 1975, DoD developed a nationwide program to identify and address environmental problems resulting from past operations and waste disposal practices at DoD facilities. Since the early 1980s, the Navy has been addressing environmental issues from past operations under this program. Originally, the Navy's program was referred to as the Navy Assessment and Control of Installation Pollutants (**NACIP**) Program. The NACIP Program was modeled after the EPA Superfund Program authorized by CERCLA. In 1986, the Navy restructured the NACIP Program into the IRP to conform to EPA's Superfund procedures.

MCBQ was listed on the NPL on June 30, 1994. On February 4, 1999, the Federal Facilities Agreement for MCBQ was signed by the Navy and EPA Region 3. VDEQ did not consent to become a signing partner to the MCBQ Federal Facilities Agreement. However, VDEQ participates in the planning and performance of environmental response activities at MCBQ.

To address environmental activities conducted under the ERP, Navy, MCBQ, EPA, and VDEQ have participated in a formal partnering process since the mid-1990s. This process was implemented to facilitate cleanup activities with no or minimal impact to MCBQ's mission.

5.3.2 Munitions Response Program

The Military MRP was initiated by DoD in 2001, as part of the Defense Environmental Restoration Program. The MRP is designed to address MEC and MC at locations other than operational ranges and disposal sites. In 2002, Congress passed the National Defense Authorization Act, which required DoD to complete a list of all munitions-contaminated sites at other than operational ranges throughout the United States.

The Munitions Response Site Prioritization Protocol was then developed by DoD, through a collaborative process with states, tribes, federal agencies, and other stakeholders and released in 2005. It is a methodology that uses site-specific information to assign a relative priority to sites addressed under the MRP.

5.3.3 Steps in the CERCLA Process

The Navy's ERP addresses both IRP and MRP sites. For both types of sites, the ERP follows the process prescribed by CERCLA regulations and guidance for investigating and addressing environmental contamination. The steps of the CERCLA process for the environmental cleanup of MCBQ are detailed below.

Discovery and Notification – "Is that something?"

The remedial process begins with discovery and notification. For the IRP, sites were identified in the Federal Facilities Agreement through the completion of several investigations. In addition, if a new site is discovered, one member of the QPMT nominates the site for inclusion into the IRP by preparing a site nomination letter. For the MRP, the remedial process begins with notification to the Marine Corps Training and Education Command and Marine Corps Systems Command. The former manages all the military ranges for the Marine Corps and must approve the addition of a site to the MRP. The latter oversees all aspects of the Navy Explosives Safety Program.

Preliminary Assessment/Site Inspection – The First Look: "Is there something there?"

The next step is to determine whether hazardous constituents, MEC, or MC is present and whether further response is required. The Preliminary Assessment (**PA**) involves collecting and reviewing existing information to identify specific potentially contaminated sites and historical range information. If hazardous constituents, MEC, or MC is suspected to be present based on the results of the PA, a Site Inspection (**SI**) is performed. The SI may involve limited sampling of soil, groundwater, surface water, and/or sediment to confirm or deny the presence of hazardous constituents, MEC, or MC.

Remedial Investigation/Feasibility Study – A Closer Look: "What's there and where is it? What can be done about it?"

The RI determines the nature and extent of hazardous constituents, MEC, or MC, and assesses the associated risks to human health and the environment. If cleanup is determined to be warranted, the FS evaluates potential cleanup approaches against a variety of criteria, including technical feasibility, cost-effectiveness, and community acceptance.

Proposed Plan – Public Input: "What's the best way to deal with it? What do you think?"

The preferred cleanup approach, based on the evaluation of various alternatives by the FS, is documented in the Proposed Plan (also called a Proposed Remedial Action Plan), which is provided to the public for formal comment prior to selecting the remedy.

Record of Decision – Decision: "Here's what we decided and why!"

The ROD documents the selection of the remedy following consideration of public comments received on the Proposed Plan. It includes a reply to public comments on the Proposed Plan.

Remedy Implementation – Cleanup Plan and Action: "Let's deal with it!"

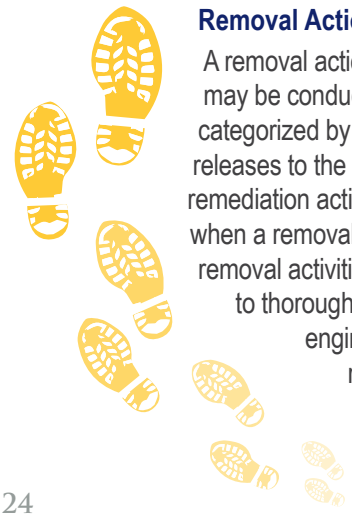
If a remedial action is required, a Remedial Design and Remedial Action Work Plan are prepared to document the remedy to be taken. The selected remedy and design are implemented during remedial action construction and operation phases.

Five-Year Review – Monitoring and Reporting: "How is it working?"

Five-Year Reviews are generally required when hazardous substances remain on a site at levels that restrict use or exposure. A Five-Year Review is an opportunity to evaluate the implementation and performance of a remedy to assess whether it continues to protect human health and the environment.

Site Closeout – "Check on it later?"

The last phase of the CERCLA process is site closure, which may consist of long-term management techniques, such as land use controls and long-term monitoring.



Removal Actions – Cleanup Action: "Hold on, let's deal with this now"

A removal action is a response to a release that threatens public health, welfare, or the environment. Removal actions may be conducted at any point in the CERCLA process previously described. These actions vary in duration and are categorized by their urgency and duration. Emergency removals require an immediate response to releases or threatened releases to the environment and are typically initiated within hours or days. Time-critical removal actions are situations where remediation activities must begin within 6 months to protect public health and safety. Non-time-critical removal actions occur when a removal action is appropriate, but the situation allows for a planning period of 6 months or more before beginning removal activities. Because these sites do not present an immediate threat to public health or safety, more time is available to thoroughly assess potential threats and evaluate cleanup alternatives. For a non-time-critical removal action, an engineering evaluation and cost analysis describing the remedial approach is prepared before beginning the removal action (EPA, 2016).

For more detail on the various CERCLA steps presented above, see https://www.epa.gov/superfund/superfund-cercla-overview.

5.4 Site Status

5.4.1 Installation Restoration Program Sites

The MCBQ IRP includes 262 sites. 246 of these sites originated from the Federal Facilities Agreement completed in 1998 (EPA, 1998).

Of the 262 sites, 255 sites are closed or deferred to other regulatory programs (for example, the Common-wealth of Virginia Petroleum Underground Storage Tank Program) resulting in 7 sites that are currently open and their current status is presented in **Table 10**. The locations of the open sites are also presented on **Figure 4**. More detail about each of these sites, as well as a comprehensive summary of the work that has been completed to date, can be found in the Fiscal Year (**FY**) 2024 Site Management Plan (CH2M, 2023).

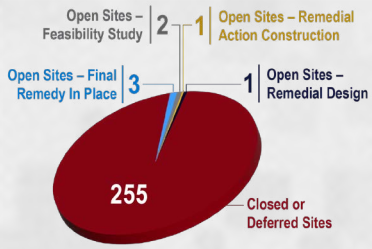


TABLE 10
OPEN INSTALLATION RESTORATION SITES AND STATUS

Site Identification and Designation	Site Name	Operable Unit	Abbreviated Site History	Status
Site 04	Old Landfill	04	24-acre old landfill operating from early 1920s through 1971. Landfill operations extended the shoreline of the Potomac River approximately 250 feet past original location.	Selected remedy consists of land use controls (**LUCs**), long-term monitoring (**LTM**), and Five-Year Review reports related to the installation of an engineered cap installed in 1997. LTM efforts are ongoing.
	Defense Reutilization and Marketing Office (**DRMO**) Scrapyard		2.5-acre scrapyard located on top of the Old Landfill constructed in the 1950s. Used for storage of polychlorinated biphenyl (**PCB**)-containing transformers that reportedly leaked onto ground surface.	
	Building 669		Former building located on top of the northeast portion of the Old Landfill next to DRMO Scrapyard. Several PCB and mineral oil transformers were stored in this building until 1979.	
Site 95	Building 2101 Paint Booth Sump	19	Paint booth sump constructed in 1984 in the former paint shop of Building 2101. Wash water from the paint booth was drained from a spigot to the sanitary sewer system.	Selected remedy is treatment of groundwater, LUCs, and site reviews. Although a ROD was previously completed for this site in 2008, an additional source area was identified in 2011. A Vapor Intrusion Investigation is currently ongoing with a Focused **FS** planned for FY 2025. An Explanation of Significant Differences and/or ROD Amendment and an RD will be prepared after the results of the Focused FS are available.
Site 99	Quantico Embayment	12	The embayment is approximately 190 acres along the eastern shoreline of MCBQ within a semicircular inlet of the Potomac River. PCB and pesticide contamination in soil and sediment is present within the embayment area.	Selected remedy consists of placement of a habitat enhancement cap, dredging and offsite disposal of contaminated sediment, and monitored natural recovery in addition to LUCs. LTM efforts are ongoing.
Site 100	Chopawamsic Creek	13	Lead contaminated sediment within a portion of the Chopawamsic Creek; all other areas of the creek agreed as no action.	Selected remedy for Area No. 3 consists of monitored natural recovery, LUCs, LTM, and Five-Year Review reports. An updated LTM Report was completed in FY 2023 and LTM sampling has resumed.
Site 102	Abrahams Creek	23	Representing the Abrahams Creek portion of the Quantico Watershed Study. Pesticides have been detected at concentrations within the creek sediment.	The ROD was finalized in 2022. The selected remedy consists of treatment with activated carbon, LTM, and LUCs. The Pre-RD sampling is anticipated for completion in FY 2024.

Site Identification and Designation	Site Name	Operable Unit	Abbreviated Site History	Status
Site 104	Building 2113 Underground Tank Loading/ Unloading Area	21	Former Building 2113 was the heating plant for MCBQ; the underground tank loading/unloading area was located next to the former building. Runoff and spills from this area were designed to drain into a sump. The heating plant operated from 1941 to 1986; the building was demolished in early 2018. All tanks have been removed or closed in-place.	The selected remedy is enhanced bioremediation, monitoring, LUCs, and Five-Year Review reports. The Pre-RD groundwater sampling was completed in 2021 and the RD was completed in FY 2023. The RA fieldwork is anticipated to be completed in FY 2025.
Site 105	Soil Areas	38	Site adjacent to former location of Building 689, a pesticide control building, which was constructed in 1937 and destroyed in a fire in 1985. Approximately 500 pounds of pesticides and herbicides were stored in the building prior to the fire; runoff water from firefighting entered a nearby drainage channel.	An RI was completed in FY 2022. The FS is planned for completion in FY 2024, followed by a Proposed Plan and a ROD.

5.4.2 MRP Sites

The MCBQ MRP includes 42 sites. 24 sites are closed or deferred to other regulatory programs (for example, the site is located within the operational range area of MCBQ and still used for active training) resulting in 18 sites that are currently open as presented in **Table 11**. The locations of the open sites are also presented on **Figure 4**. More detail about each of these sites, as well as a comprehensive summary of the work that has been completed to date, can be found in the FY 2024 Site Management Plan (CH2M, 2023).

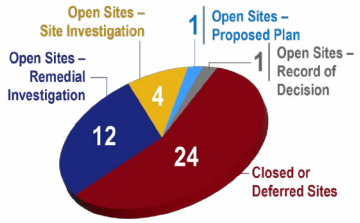


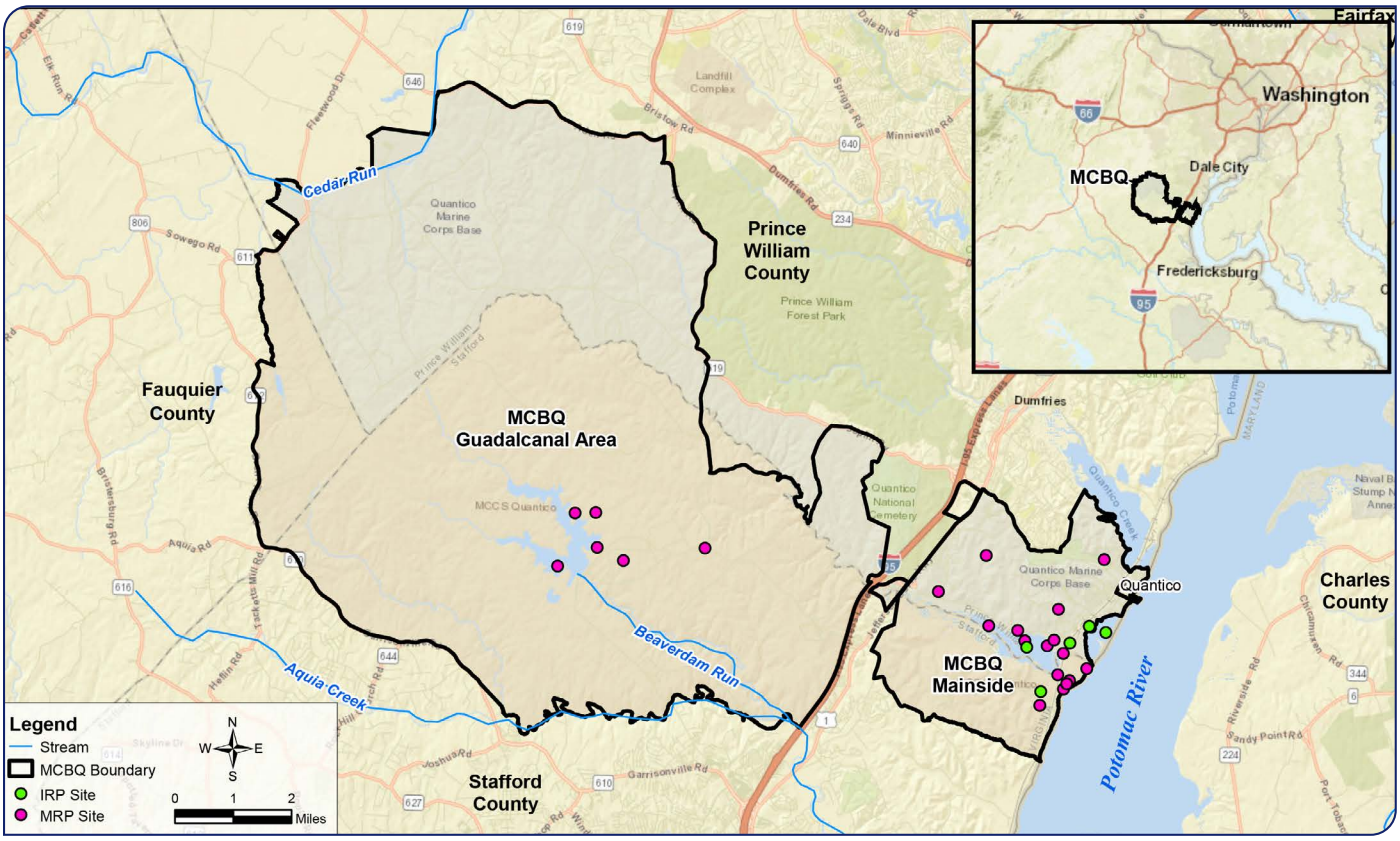
TABLE 11
OPEN MUNITIONS RESPONSE PROGRAM SITES AND CURRENT ERP PHASE

Site Identification and Designation	Site Name	Operable Unit	Abbreviated Site History	Status
UXO 001	Little Creek Skeet Range	None	Former shotgun shooting range at launched targets from 1937 through mid-1940s.	A removal action was completed in FY 2023. A Removal Action Construction Completion Report is being prepared and a No Further Action Decision Document is planned for FY 2024.
UXO 013A	81 mm Mortar Range (Impact Area)	24	Impact area for former 81 mm mortar and artillery ranges used between 1919 and 1943. Site area is 28 acres.	RI munitions constituent sampling activities were completed in April 2020 and additional sampling is planned for completion in FY 2024.
UXO 013B	81 mm Mortar Range (Firing Fans)	30	Firing fans for former 81 mm mortar and artillery ranges used between 1919 and 1943. Firing fans extend across the Chopawamsic Creek. Site area is 260 acres total, 40 acres terrestrial.	RI munitions constituent sampling activities were completed in April 2020 and additional sampling is planned for completion in FY 2024.
UXO 013D	81 mm Mortar Range (Firing Point K3)	None	Firing point (K3) for former 81 mm mortar and artillery ranges used between 1919 and 1943.	A Supplemental Site Investigation was completed to address outstanding issues; however, additional investigation of subsurface anomalies and debris is needed. Additional fieldwork was completed in FY 2023.
UXO 018	Marine Corps Flying Field Bombing Target No. 5	37	Former Marine Corps Flying Field Bombing Target Area; use ended in early 1940s.	RI activities (Munitions and Explosives of Concern Investigation) are anticipated for completion in FY 2024.

Site Identification and Designation	Site Name	Operable Unit	Abbreviated Site History	Status
UXO 019	Grenade Field	31	Former grenade range used between 1917 and 1942. Site area is 9 acres. Also referred to as the Grenade Course.	The RI Report was completed in FY 2021, the FS Report was completed in FY 2022, and the Proposed Plan was completed in FY 2023. The ROD is planned for completion in FY 2024.
UXO 021	Combat Area C Field Firing Range.	32	Historical training area and likely impact area for mortar and light artillery. Site area is 285 acres. Former range use estimated from 1935 to 1943.	RI field activities were completed in April 2020 and an RI Report was completed in FY 2022. An FS Report was completed in FY 2024 and the Proposed Plan is planned for completion in FY 2024.
UXO 024	Combat Area E Field Firing Range	None	Former range training area where small arms and potentially larger munitions items may have been used. Estimated use ended in 1943.	A Site Investigation was completed in February 2014 and additional fieldwork was recommended by MARCORSYSCOM.
UXO 025	Quantico Clubs	33	Former range used multiple activities including: a rifle and pistol range; mortar and grenade firing activities; and mortar and white phosphorous disposal area. General time frame of range use from 1926 to 1952. Site area is 35 acres.	RI munitions constituent sampling activities were completed in April 2020 and additional sampling is planned for completion in FY 2024.
UXO 026	Chopawamsic Creek Skeet Range No. 1	34	Former skeet range located along the north bank of the Chopawamsic Creek.	RI activities scheduled to begin in FY 2028.
UXO 028	Marine Corps Exchange	None	Site located at intersection of Purvis Road and Russell Road; mortars reportedly recovered during construction of Marine Corps Exchange in late 1970s.	No action for site agreed based on the SI Report completed in 2011 and Closeout Document in 2012. Further investigation may be warranted; to be discussed by QPMT.
UXO 033	FBI Training Area 8	29	Site within suspected firing line and firing fan of former artillery and mortar range used from 1943 to the mid-1950s. Site area is 400 acres	RI activities are scheduled to begin in FY 2024.
UXO 034	Lunga Recreation Area South	27	Site within suspected firing fan of former artillery and mortar range used from 1943 to the mid-1950s. Site area is 96 acres.	RI fieldwork activities have been completed and the RI Report is planned for completion in FY 2024.
UXO 035	Lunga Reservoir	39	Site within suspected firing fan of former artillery and mortar range used from 1943 to the mid-1950s. Site area is 520 acres (consisting of Lunga Reservoir).	A Shoreline Time-critical Removal Action was completed in 2019. RI activities are scheduled to begin in FY 2028.
UXO 036	Grenade Pit	40	Grenades identified during recent (2015) utility trenching near Building 27002. Area appears to be munitions disposal area from previous range cleanups. Site area is approximately 12 acres.	RI fieldwork activities are ongoing and are planned for completion in FY 2025.
UXO 037	Chopawamsic Creek Range Fans	41	Firing fans for former 81 mm mortar, artillery, and training ranges used between the 1920s and 1940s. Site consists of the aquatic portions only of the former firing fans.	RI activities are scheduled to begin in FY 2028.
UXO 038	Lunga Recreation Area Central	35	Site within suspected firing fan of former artillery and mortar range used from 1943 to the mid-1950s. Site area is 109 acres.	RI fieldwork activities are ongoing and are planned for completion in FY 2025.
UXO 039	Lunga Recreation Area North	36	Site within suspected firing fan of former artillery and mortar range used from 1943 to the mid-1950s. Site area is 158 acres.	RI fieldwork activities are ongoing and are planned for completion in FY 2025.

mm = millimeter(s)

FIGURE 4
OPEN MRP/IRP SITES



5.4.3 Per- and Polyfluoroalkyl Substances

Per-and polyfluoroalkyl substances (**PFAS**) have been identified by the DoD as "emerging chemicals." PFAS are of environmental concern because of their persistence in the environment and in organisms, their migration potential in surface and groundwater, their historically widespread use in commercial products, and their possible health effects at low levels of exposure (CH2M, 2021).

The chemical properties of PFAS make them useful for many commercial products because they are heat resistant and can repel oil, grease, and water. PFAS have been manufactured for use in a wide variety of products (**Figure 5**) including firefighting foam, nonstick cookware, fiber and fabric stain protection, food packaging, and personal care products. The pervasive use of PFAS in commercial and industrial products has led to the discovery of PFAS in soil, air, and groundwater worldwide (CH2M, 2021).

Aqueous film-forming foam (**AFFF**) containing PFAS was developed in the 1960s for use on Class B fires (that is, fires with flammable liquids or vapors), and AFFF was put into routine use by the early 1970s. PFAS have been used in a variety of military applications, including as a component of AFFF which was routinely used at firefighting training areas and firefighting equipment test areas (CH2M, 2021).

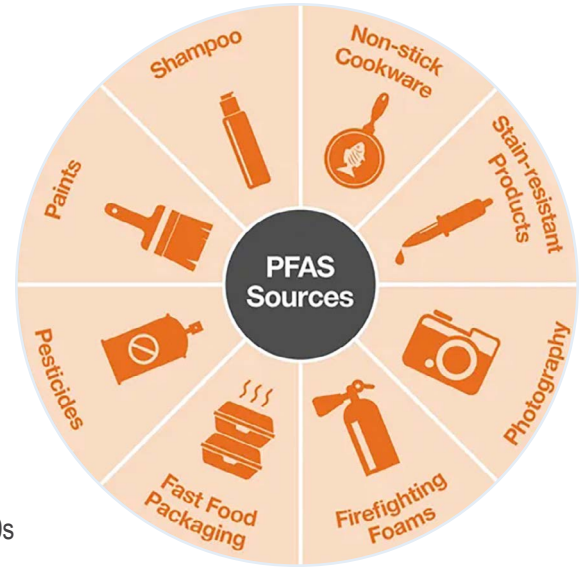


FIGURE 5
PFAS USE IN COMMERCIAL PRODUCTS
SOURCE: AUSTRALIAN GOVERNMENT DEPARTMENT OF DEFENCE

PFAS from AFFF used in firefighting, firefighting training, and fire suppression systems are considered to have the greatest potential for release to the environment at Navy installations. Other potential sources of PFAS to the environment on MCBQ include electroplating, historical onsite land disposal areas and landfills that received PFAS-containing materials, and wastewater treatment sludges and effluents (CH2M, 2021).

5.4.4 Regulatory Requirements

On March 14, 2023, the EPA proposed drinking water maximum contaminant levels (MCLs) for six PFAS. To date, no PFAS MCLs have been finalized by EPA (EPA, 2023e). Virginia has not established any state-specific PFAS action levels (VDEQ, n.d.).

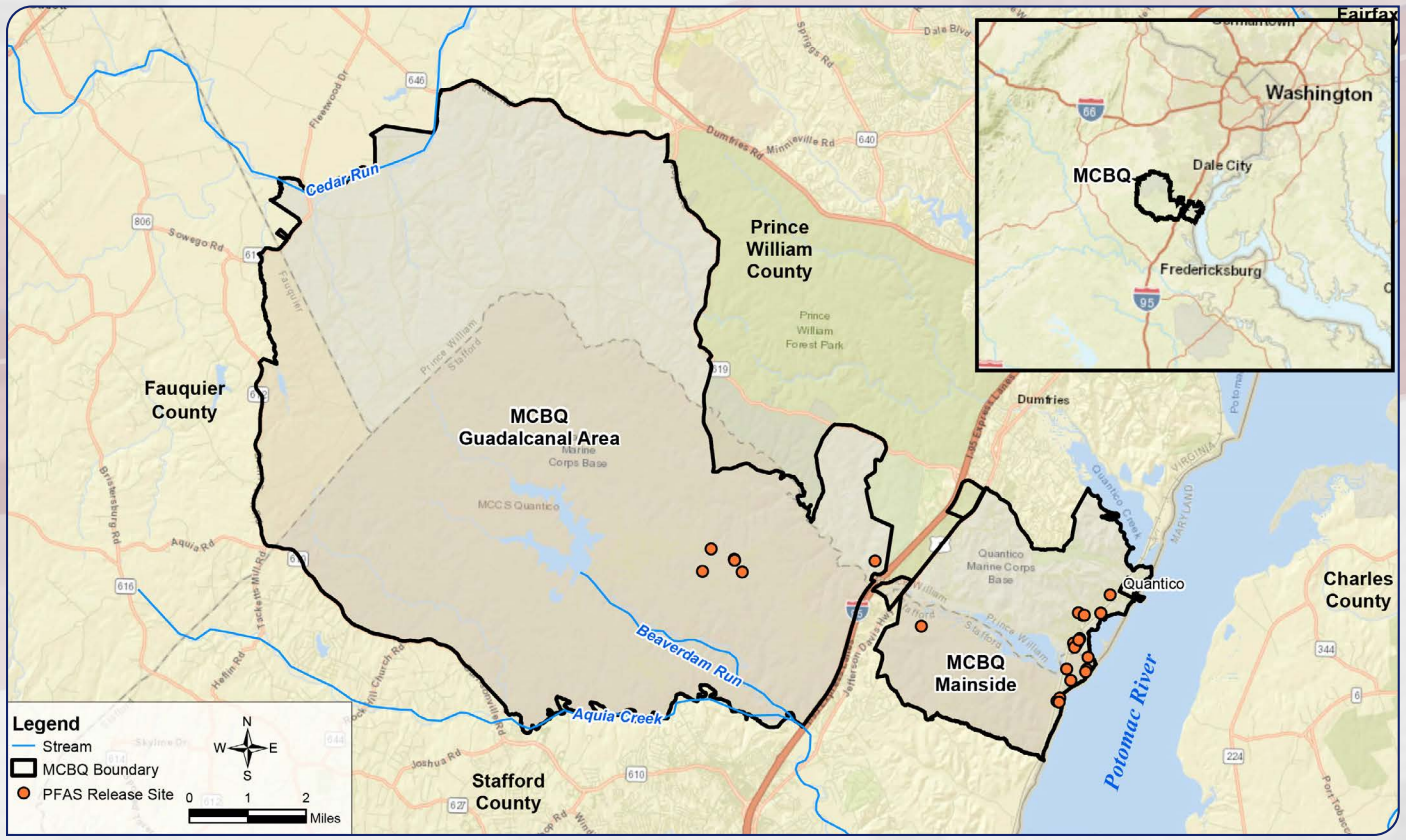
5.4.5 PFAS Potential Source Areas

A PA was conducted in 2020 at MCBQ and identified 25 areas as potential source areas at the Base. Of those 25 sites, 16 were recommended for SI. The SI report was finalized in February 2024 (CH2M, 2024). The 16 PFAS potential source areas investigated in the SI are shown on **Figure 6** and are identified as follows::

- Fire Training Area (Site 19 [L-08])
- Interim Burn Pit and Fill Area (Site 23 [APS-02C])
- Quantico Fire Department Training Area (near Former Building 27413)
- Current Aircraft Rescue Fire Fighting (ARFF) Station (Building 5172) and ARFF Storage ("Foam Shed"): Building 5158
- Former ARFF Station (Former Building 2134)
- Fire Station 531 (Building 2045)
- Fire Station 532 (Building 69) and Storage Shed
- Fire Station 533 (Building 27400) and Camp Barrett Fire Department Annex (Building 27400T)
- Fire Department General Warehouse (Building 4)
- Old Hangars (Buildings 2101 to 2105)
- Accumulation Area No. 2 (Site 46 [CA-29])
- Fuel Farm (Building 27263)
- Mainside Sewage Treatment Plant (Sites TP-1 to TP-27) and Old Sludge Drying Bed (Site M-14)
- Quantico Sanitary Landfill (Site L-16)
- Recently Closed Landfill (Site L-05)
- Base Motor Transport: Building 2013 and Washrack (Site W-11)

Based on Final SI Report, 14 PFAS potential source areas were recommended for an RI.

FIGURE 6
PFAS POTENTIAL SOURCE AREAS



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Notes

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