FINAL

Community Involvement Plan Update

Marine Corps Base Quantico

Quantico, Virginia

DECEMBER 2019

Prepared by

ch2m. SM

NAVFAC Naval Facilities Engineering Command

Community Involvement Plan Organization

Section 1 Introduction ..... page 2

Section 2 The Community ..... page 3

Section 3 Community Issues, Concerns, and Preferences ..... page 9

Section 4 Community Involvement Action Plan ..... page 13

Section 5 The Base ..... page 22

Section 6 References ..... page 31

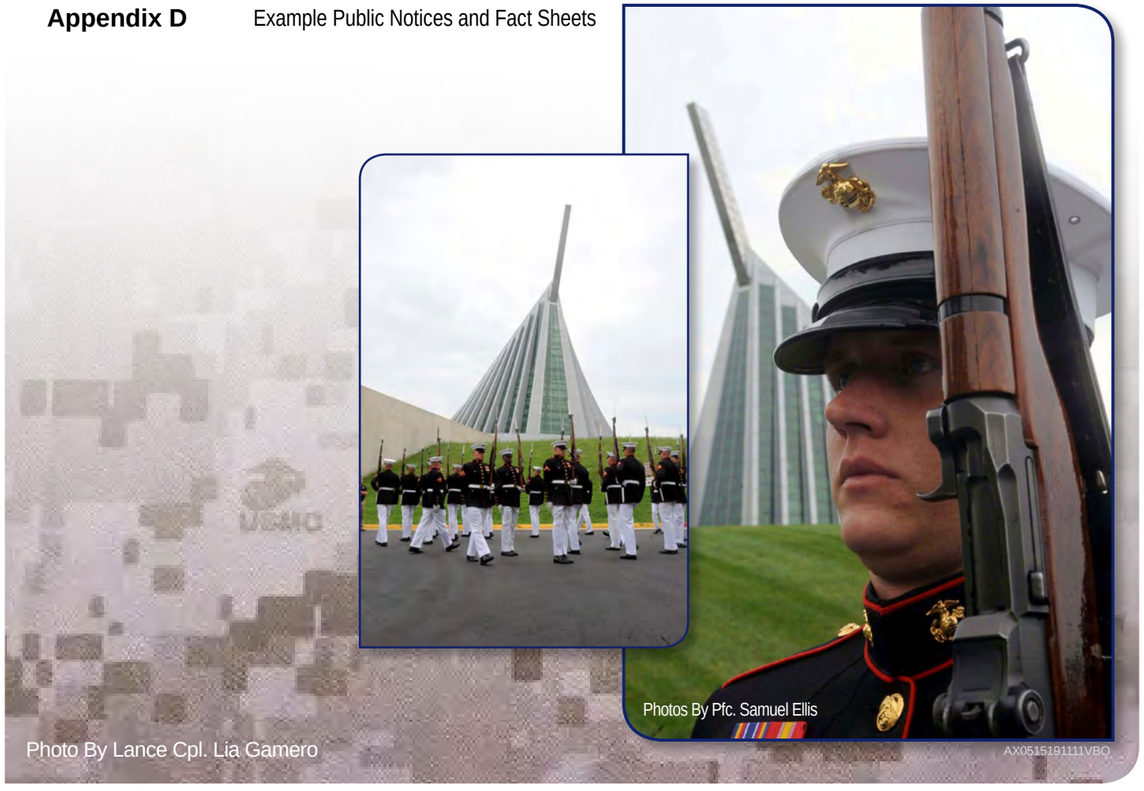
Appendixes (located on the enclosed CD)

Appendix A Outreach to Solicit Community Input

Appendix B Summary of Community Interviews and Questionnaires

Appendix C Key Community Contacts

Appendix D Example Public Notices and Fact Sheets



Photos By Pfc. Samuel Ellis

Photo By Lance Cpl. Lia Gamero

AX0515191111VBQ

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 Base Quantico (hereafter referred to as MCBQ or "the base").

This CIP is designed to support effective two-way communication between the ERP 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. The outreach methods described in this CIP were developed based on community input received between May 2018 and February 2019.

1.1 Environmental Restoration Program

MCBQ is located in Quantico, Virginia, approximately 35 miles south of Washington, District of Columbia (**D.C.**). It has been used as 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 Department of the Navy (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:

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

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

CERCLA requires the United States Environmental Protection Agency (**USEPA**) 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.

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 CIP is intended to be a site-specific strategy for meaningful community involvement throughout the CERCLA cleanup process. The Navy prepares and implements a CIP on an installation-wide basis rather than for a specific environmental restoration action (Navy, 2018).

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:

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CIP	Community Involvement Plan
D.C.	District of Columbia
DoD	Department of Defense
EMD	Environmental Management Division
ERP	Environmental Restoration Program
FBI	Federal Bureau of Investigation
Guad	Guadalcanal
I	Interstate
IRP	Installation Restoration Program
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 Command
NPL	National Priorities List
NREA	Natural Resources and Environmental Affairs
QPMT	Quantico Project Managers Team
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendment Reauthorization Act
TASC	Technical Assistance Service for Communities
TAG	Technical Assistance Grant
TAPP	Technical Assistance for Public Participation
TRC	Technical Review Committee
U.S.	United States
USEPA	United States Environmental Protection Agency
UXO	Unexploded Ordnance
VDEQ	Virginia Department of Environmental Quality

The first Community Relations Plan (CRP) for the ERP at MCBQ was prepared in 1995 and updated in 2004. This 2019 CIP supersedes the 2004 CRP Update. The term "Community Relations Plan" was replaced with "Community Involvement Plan" after the publication of USEPA's *Superfund Community Involvement Handbook* (2016).

Naval Facilities Engineering Command (**NAVFAC**) Washington Division 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. The Navy, USEPA, and the Virginia Department of Environmental Quality (**VDEQ**) work in partnership to implement Mission Cleanup, a program to ensure that the Navy's ERP uses sound science to (1) CLEAN up federal land, (2) PROTECT communities, and (3) RESTORE land and water to be safely and productively re-used. Mission Cleanup's success relies on ongoing public awareness and engagement in cleanup milestones such as this CIP, for public participation is critical to Clean, Protect, & Restore. Together, the Navy, USEPA, and VDEQ are committed to implementation of this CIP.

Photo By Sgt. Melissa Lee

Photo By Pfc. David Staten

Photo By Eve A. Baker

2: The Community

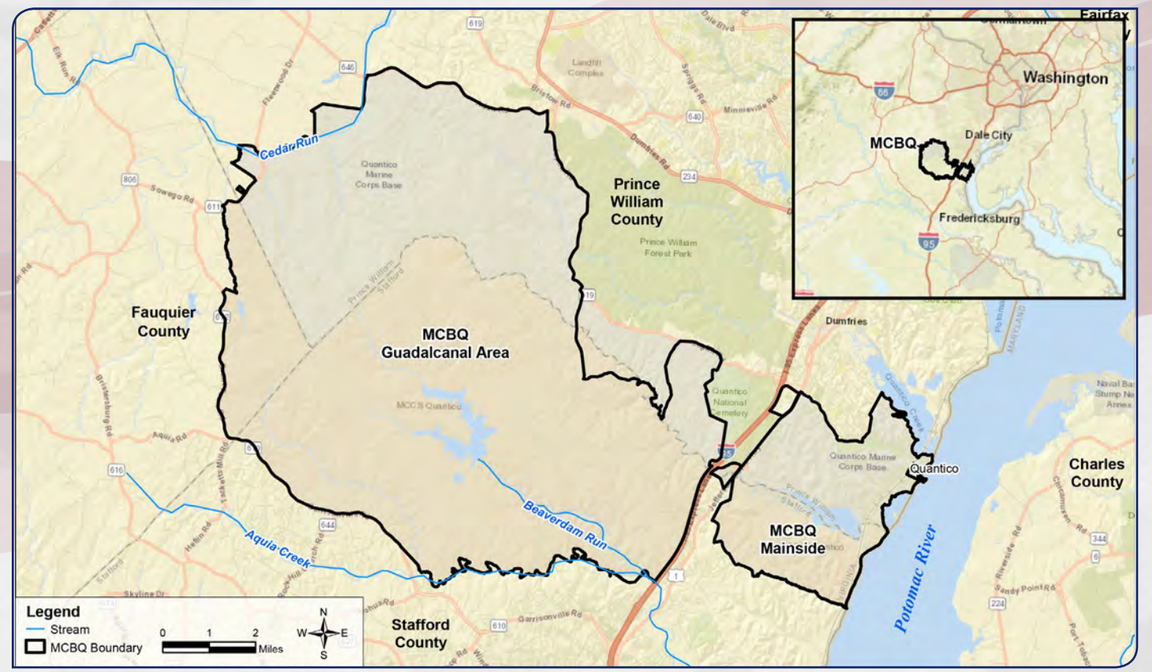
This section describes MCBQ's setting within the local community.

2.1 Community Profile

2.1.1 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.

FIGURE 1
MCBQ SITE MAP



2.1.2 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 Interstate 95 (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).


Photo By Sgt. Terry Brady

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).

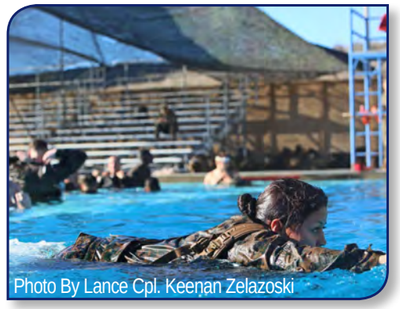
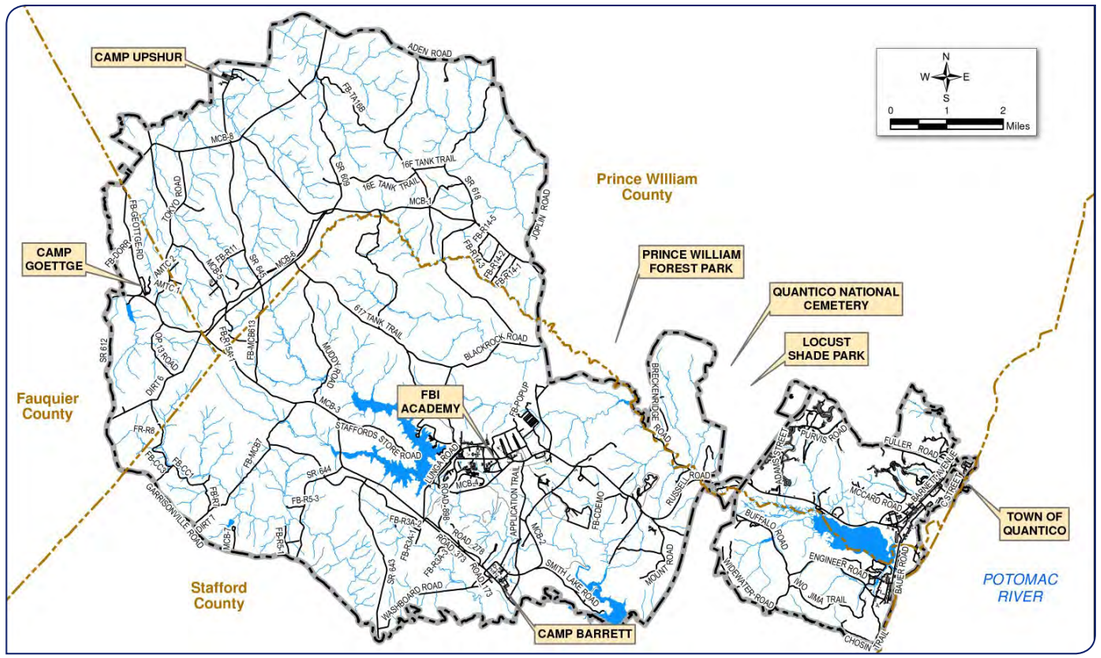


Photo By Lance Cpl. Keenan Zelazoski

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).

FIGURE 2
BASE MAP



2.1.3 Base Land Use

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 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.

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 improved grounds consisting of turf lawns, golf courses, parade grounds, and athletic fields. Approximately 870 acres are semi-improved areas used for wildlife, aesthetics, and erosion control. Roughly 3,900 acres of MCBQ consist of various types of wetlands. Approximately 360 acres consist of buildings and associated paved areas. The balance of the acreage is unimproved lands that include woodlands, wildlife management areas, artillery ranges, demolition areas, and other military use areas.


Photo By Tiffiney Wertz

2.1.4 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.


Photo By Carrie Yacono

2.1.5 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, 2019).

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; however, the area was closed in Spring 2012 as a safety precaution because of potential munitions of explosive concern (**MEC**).

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.

2.1.6 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.


Photo By Cpl. Jackeline M. Perez

2.1.7 Schools

The Department of Defense (**DoD**) Education Activity operates two schools for students living in base housing: Crossroads Elementary School and Quantico Middle/High School (DODEA, 2019). 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, 2019). 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, 2019). 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, 2019).


Photo By Sean Murphey, DoDEA

2.1.8 Drinking Water Sources

Two reservoirs serve as the primary source of potable water at MCBQ. The primary water supply source is Breckenridge Reservoir. Breckenridge Reservoir encompasses 98 acres, with approximately 13,000 acres of watershed. Lunga Reservoir, a 577 acre supplementary water supply with approximately 6,880 acres of watershed (MCBQ, 2015), is used as a secondary water supply source for the facility. Stafford County provides water to The Basic School. Smith Lake (Aquia Reservoir) is the drinking water source for nearby portions of Stafford County.

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

In addition, three new water supply wells have been installed at Camp Upshur.


Photo By Benjamin Earwicker


Photo By John Hollis

2.1.9 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 2010	Population 2017 (estimated)	Percent Change 2010-2017
Quantico Station[1] (base residents)	4,452	n/a[2]	n/a[2]
Town of Quantico	480	n/a[2]	n/a[2]
Town of Dumfries	4,961	n/a[2]	n/a[2]
Town of Triangle	8,188	n/a[2]	n/a[2]
Prince William County	402,002	450,763	+ 12.1%
Stafford County	128,961	141,159	+ 9.5%
Fauquier County	65,203	68,406	+ 4.9%
Virginia	8,001,024	8,365,952	+ 4.5%

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

[1] Quantico Station is the name used by the Census Bureau to describe base housing on MCBQ.
[2] Annual population estimates are available only for geographic areas with a population of more than 65,000.

N/A = not applicable

2.1.10 Employment and Income

MCBQ is a major contributor to the regional economy. As of 2018, the base provided a total economic impact of $4.8 billion. MCBQ's workforce population consists of 25,862 personnel, of which 6,058 are military, and 9,298 are civilian, accounting for $1.46 billion in direct payroll (MCBQ, 2018.)

Unemployment rates for Prince William, 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 January 2010	Unemployment Rate April 2019	Percent Change 2010-2019
Prince William County	6.8%	3.0%	- 3.8%
Stafford County	7.1%	3.3%	-3.8%
Fauquier County	7.0%	2.9%	-4.1%
Virginia	7.9%	3.2%	- 4.7%

Data from U.S. Bureau of Labor Statistics, last updated: March 15, 2019

2.1.11 Environmental Justice

The Environmental Justice Act of 1992 obligates federal agencies to make environmental justice part of their overall missing by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority 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 (USEPA, 2011)

MCBQ is aware of environmental justice issues and seeks to ensure that actions and activities related to its ERP do not disproportionately affect any segment of the population. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed in 1994, directs federal agencies to develop an environmental justice strategy identifying and addressing disproportionately high adverse human health or environmental effects of program policies and activities on minority and low-income populations.

An environmental justice screening was conducted for this CIP. For the purposes of environmental justice, a "minority population" is defined as one having at least 51 percent non-white and/or greater than 50 percent of the population below the national poverty level. Table 3 presents the minority populations (non-white) in 2017 for Prince William, Stafford, and Fauquier counties compared with the Commonwealth of Virginia and national average. It also presents the percent of the population living below the national poverty level. Demographic data for the counties surrounding MCBQ does not meet the definition of "minority population".

TABLE 3
MINORITY (NON-WHITE) POPULATIONS

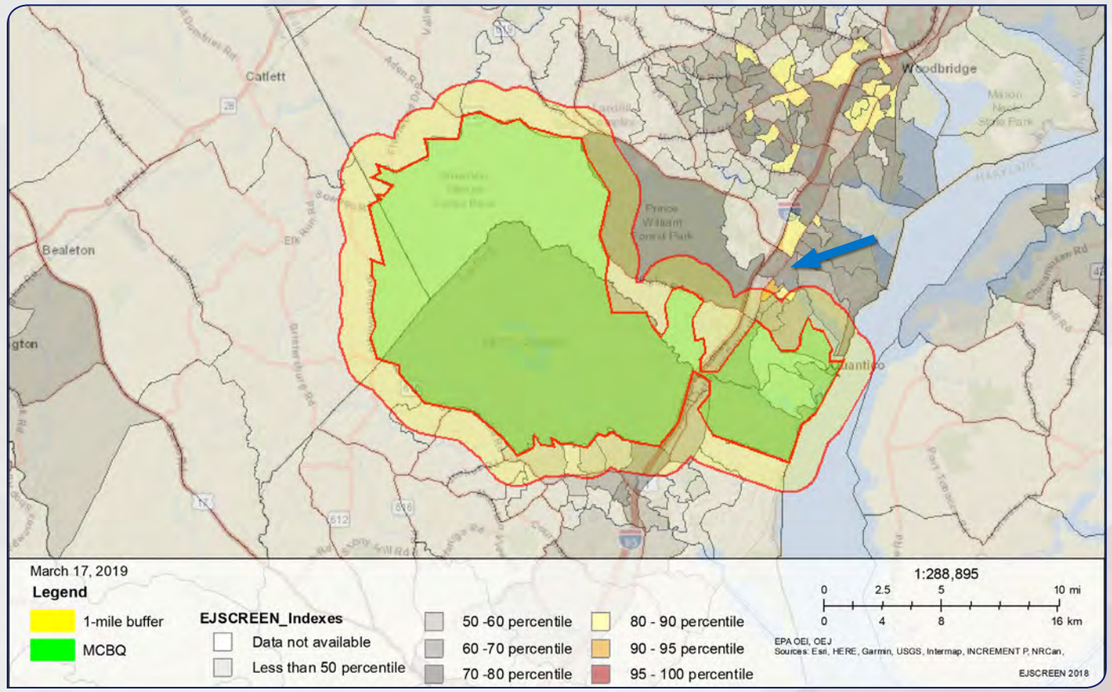
	Percent Minority Populations 2017 (estimated)	Percent of Individuals Living Below the National Poverty Level 2017 (estimated)
Prince William County	36.7%	7.0%
Stafford County	31.0%	4.7%
Fauquier County	13.1%	6.2%
Virginia	31.6%	11.2 %
United States	27.0%	12.3%

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

In accordance with Executive Order 12898, USEPA developed an environmental justice screening and mapping tool called EJSCREEN (USEPA, 2019a). EJSCREEN uses data on low-income and minority populations at the Census-block-group level (rather than county-level, as shown in Table 3) to develop a demographic index. EJSCREEN was used to develop a demographic index for a 1-mile buffer around MCBQ.

Results of the EJSCREEN are shown in terms of percentiles, indicating the percent of the U.S. population that has a higher value for low-income and minority indicators. Percentiles at or above 95 percent indicate those areas of particular concern for environmental justice issues. No areas around MCBQ are at the 95th percentile on the demographic index (Figure 3); however, small areas just north of Mainside MCBQ fall into the 80 to 90th and 90 to 95th percentiles (identified by the blue arrow on the figure), meaning that the populations in those areas are potentially more susceptible to environmental concerns.

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



3 Community Issues, Concerns, and Preferences

This section describes the history of community involvement activities at MCBQ, and 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 two 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, the TRC began receiving returned mailings, most likely because of the transient population in the surrounding communities. After several years of returned mailings, the ERP, in agreement with USEPA and VDEQ, dissolved the TRC in the late 1990s.

3.2 Previous Community Issues, Concerns, and Preferences

In an effort to identify concerns about environmental activities at MCBQ, community interviews were conducted between December 1992 and January 1993, in September 1996, and in March 1998 by the ERP. Interviewees received an overview of the IRP and were asked a series of questions, provided in a community interview questionnaire.

In the 1992 to 1993 interviews, many participants expressed interest and were somewhat concerned about MCBQ's environmental status. Most interviewees indicated they knew little about the IRP but wanted to be kept informed periodically or when a newsworthy event occurred. Specific concerns focused on the potential impact of contamination on nearby creeks and the Potomac River. Interviewees acknowledged that environmental protection was often an issue equivalent to or overshadowed by economic stability, traffic, crime, taxes, and education. Based on the information provided in the IRP overview, those interviewed indicated that the USMC was systematically and properly executing the environmental program.

During subsequent interviews (1996 and 1998), there was a lack of community response and interest in environmental activities at MCBQ. This was considered primarily attributable to the transient nature of community members who had previously expressed an interest.

3.3 Process for Gathering Updated Community Input

To gather community input for updating this 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 1137 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/xngKr*), 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 stated-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 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.

3.4 Results of Current Community Interviews and Questionnaires

Appendix B contains a compilation of responses to the written questionnaire and personal interviews, transcribed onto the written questionnaire form. In general, the questionnaire focused on obtaining information about the profile of the respondents, their awareness of and interest in environmental cleanup activities, their awareness of and interest in munitions response activities, their interest in potential community involvement opportunities, and information about their communication needs and suggestions.

3.4.1 Profile of Respondents

Profile questions focused on how long the respondent has lived and worked in the area, his or her role in the community, whether he or she has worked at MCBQ, and opinions about community interest and concerns about local environmental issues in general.

Respondents represented a wide range in terms of how long they have lived and worked on-base or in Stafford, Fauquier, or Prince William counties, from less than 1 year to more than 21 years. Respondents were composed of residents, local (base) employees, representatives of homeowner or civic organizations, representatives of environmental organizations, and public or elected officials (town or County.) They were about evenly split between whether they have lived or worked on-base or not. In general, respondents speculated that people in the local community tend to be moderately to very concerned about environmental issues in general, with issues such as water quality, traffic, growth and development, and drinking water being of most interest.

Photo By Cassandra Brown

3.4.2 Awareness and Concern about the Environmental Response Program

ERP awareness and concern questions focused on whether respondents were aware of the ERP, whether they had specific interests or concerns about environmental cleanup, and whether they felt personally affected by environmental contamination at MCBQ.

Respondents were almost evenly split between whether they were aware that the Navy is conducting an environmental cleanup program at MCBQ. Most of those who were aware could not name specific activities. Several indicated that they have general trust in the Marine Corps to do "what they should be doing." Specific interest and concern about environmental cleanup activities ranged from not at all interested or concerned, to extremely interested or concerned. Several respondents mentioned concern about potential contamination to groundwater and surface water, particularly anything that might leave the base. In general, respondents were less concerned as long as contamination is contained on-base and is being addressed. Several on-base respondents expressed concern about MCBQ's drinking water quality and potential health impacts. Several off-base respondents indicated that the surrounding community is not likely to be concerned unless contaminants were to affect off-base groundwater or surface water, including the Potomac River.

3.4.3 Awareness and Concern about the Munitions Response Program

MRP awareness and concern questions focused on whether respondents were aware of the MRP, whether they had specific interests or concerns about munitions response, and whether they felt personally affected by munitions response issues at MCBQ.

Results were similar to ERP awareness and concern results. Respondents were split between whether they were aware that the Navy is conducting munitions work at MCBQ, although more on-base respondents were aware and have seen flagged areas on-base. Two respondents specifically asked about munitions work at Lunga Reservoir and when it would re-open for recreational use. Respondents varied in how interested or concerned they were about the MRP, with on-base respondents tending to be more interested or concerned. Off-base respondents tended to be more concerned with noise and vibration from current training activities. Two off-base respondents indicated that their only concern about munitions response would be whether any lead had leached into the groundwater.

3.4.4 Interest in Community Involvement Opportunities

This section of the questionnaire described the purpose and role of a RAB and asked whether respondents thought a RAB was needed at MCBQ, and if so, whether they would be interested in serving on it.

The majority of respondents indicated that they did not think MCBQ needed a RAB (9) or they were not sure (7). Three respondents thought a RAB should be formed. Several respondents (5) indicated they would be willing to serve on the RAB, while the majority declined or said they would need more information. Several off-base respondents felt that the Joint Land Use Committee, while not focused specifically on environmental remediation, already fulfilled the role of the RAB by involving regional organizations, County representatives, environmental representatives, and base officials.

3.4.5 Information and Communications

Information and communications questions focused on how respondents got their local news, whether they were aware of or have used the information repositories or the MCBQ ERP website, how they would like to get information about the ERP or recommended the MCBQ communicate about the ERP, and who they would call if they had questions about the ERP.

Most respondents indicated they 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.) Several indicated that people do not tend to pay attention to local news. The newspapers most commonly cited were the Prince William Times, Fauquier Now, Fauquier.com, and the Free-Lance Star. On-base respondents identified primarily the main MCBQ website, emails from housing, and the MCBQ Facebook page.

Only one respondent was aware of and had ever used the information repositories at the Chinn Park Regional Library or the Porter Branch Library. Similarly, only two respondents were aware that the Navy maintained a website on the ERP at MCBQ. Upon learning about it, several respondents asked whether it was linked to the MCBQ main website (it is, through the NREA 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 (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/town officials and environmental representatives, who could then pass it 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.

In general, respondents were not sure who they would call if they had questions about the ERP, although most indicated they would call the base switchboard, the Public Affairs Office, the base Commander's Office, or the NREA office.

3.4.6 Summary of Results

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.


Photo By Jeremy Beale

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.


Photo By Pfc. Samuel Ellis

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 the ERP's community involvement program. Community outreach activities are based on CERCLA requirements as outlined in USEPA's Superfund Community Involvement Handbook (USEPA, 2016), 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 ERP.

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

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 ERP solicited potential public interest in establishing a RAB by issuing a public notice in the *Free Lance Star* in November 1996. In December 2016, a public notice was placed in the *Prince William Times* and *Free Lance Star* newspapers to solicit interest in establishing a RAB. No response to this public notice was received. Interest in a RAB was again solicited through the questionnaires and community interviews between May 2018 and February 2019; the majority of respondents did not think a RAB was needed.

The criteria for establishing a RAB have not been met. However, DoD must make the opportunity to establish a RAB available if the community becomes interested and must assess community interest every 24 months while environmental restoration activities are still ongoing (DoD, 2007). Therefore, the ERP will re-assess the need to establish a RAB in early 2021.

4.2.2 Maintain and Update Mailing Lists

The ERP 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 (see "Timing of Community Involvement Activities" on page 22), such as Proposed Plans. The ERP issues public notices in the *Free Lance-Star* and the *Prince William Times*.

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 the Timing of Activities section on page 22. In addition, informal meetings may be held to keep community groups and citizens informed of site activities.

The ERP 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 Feasibility Study, 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 ERP 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 ERP 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 (or Action Memorandum) and placed in the information repositories and Administrative Record file.

The ERP 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.

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.


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

What's going On?

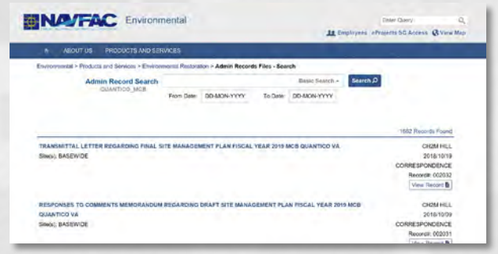
Site History

Previous Investigations and Actions

4.2.8 Maintain the Information Repository and Administrative Record File

Under CERCLA regulations, the ERP 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 Reports
- Feasibility Study Reports
- Proposed Remedial Action Plans
- Signed Records of Decision
- 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 ERP 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 ERP 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/xngKr*).

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

Repository	Location	Hours	Contact
Chinn Park Regional Library (Prince William County)	13065 Chinn Park Drive Woodbridge, VA 22192	Monday–Thursday: 1000–2100 Friday: 1000–1700 Saturday: 1000–1300 Sunday: Closed (call to verify hours)	Telephone: (703) 792-4800
John Musante Porter Memorial Library (Stafford County)	2001 Parkway Blvd Stafford, VA 22254	Monday–Thursday: 0900–2100 Friday and Saturday: 0900–1730 Sunday: 1300–1730 (call to verify hours)	Telephone: (540) 659-4909
MCBQ NREA Branch	3049 Bordelon Street Quantico, VA 22134-5001	Call for appointment	Telephone: (703) 432-0521 (703) 784-4030

4.2.9 Publicize Point of Contacts

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 Command – Washington Building 212, Second Floor 1314 Harwood Street SE Washington Navy Yard, DC 20374-5018 Victoria Waranoski (202) 685-8056 victoria.waranoski@navy.mil Lyndsay Kelsey (202) 685-3266 lyndsay.kelsey@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 3049 Bordelon St. Quantico, VA 22134-5001 (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) 784-3699 QUAN_ComRel@usmc.mil


Photo By Lance Cpl. Lia Gamero

4.2.10 Update the Community Involvement Plan

As required under CERCLA, a CIP is a written plan outlining how the ERP 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 first published in September 1995 and was last updated in 2004.

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 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 by 2024.

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

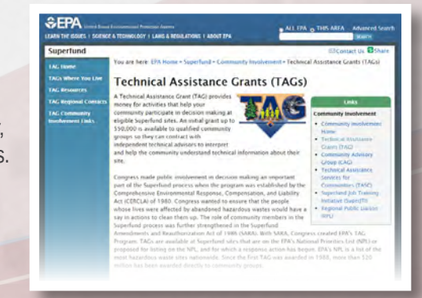
In 1998, DoD established the Technical Assistance for Public Participation (**TAPP**) program to enable RABs to hire a qualified person to provide technical assistance.

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 environmental restoration programs. 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 ERP establish a RAB, it would be eligible to apply for a TAPP program grant. The ERP 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. USEPA 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 USEPA's TAG website (USEPA, 2019b).



Should the ERP establish a RAB, the RAB would be eligible to apply for a TAG and USEPA 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 USEPA program that provides technical assistance services to communities. To support healthy communities and strengthen environmental protection, USEPA 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 USEPA actions. TASC services support community efforts to get more involved and work productively with USEPA to address environmental issues. TASC services are provided at no cost to communities. More information about the TASC program can be found on the USEPA TASC website (USEPA, 2019c). The TASC program replaced the similar Technical Outreach Services for Communities program in 2006.

Should the ERP establish a RAB, USEPA 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 ERP, 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 Distribute and Publicize Updates and Fact Sheets

Updates and fact sheets will be developed at the discretion of the ERP, 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 facts sheets or updates (or a brief announcement with a link to the fact sheet or updates 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.

4.3.2 Offer Presentations

The ERP 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.


Photo By Eve Baker

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 Two Years	Once Every Five 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 Technical Assistance Grant 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	PP	ROD	RD	RA	Five-year Review
Mailing List	▬	▬	▬	▬	▬	▬	▬
Public Notice			■	■	❍[ab]	❍	■[c]
Public Meetings		❍	■	❍	❍[a]	❍	❍
Public Comment Periodc		❍					
Responsiveness Summary			■				
Fact Sheet		❍	❍[d]	■	❍[a]	❍	❍
Information Repository	■	▬	▬	▬	▬	▬	▬
Administrative Record		■	▬	▬	❍[e]	❍[e]	❍[e]
Points of Contact		▬	▬	▬	▬	▬	▬
CIP[f]	■	❍	❍	❍	■	❍	❍
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, 2016)

■ 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. The National Contingency Plan 40 CFR 300.435(c)(3) requires a fact sheet and public briefing as appropriate at the Remedial Design stage. For military installations with multiple sites, this step is typically performed only if Remedial Actions are for releases outside installation boundaries or are of particular interest or concern to the surrounding community.

b. 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.

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

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

e Only if relevant to later response selection decisions. Remedial Design and Remedial Action 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."

f. 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).

TABLE 8
REMOVAL ACTION PROCESS – COMMUNITY INVOLVEMENT REQUIREMENTS

Activity	Time Critical Removal Action (TCRA)[a]		Non Time Critical Removal Action (NTCRA)[b]
	Onsite Activity Lasts Less than 120 Days	Onsite Activity Lasts More Than 120 Days	
Agency Spokesperson	■	■	■
Administrative Record[c]	■	■	■
Contact State and Local Officials	■	■	
Information Repository		■	■
CIP[d]		■	■
Public Notice[e]	■	■	■
Public Comment Period[f]	■	■	■
Response to Comments[f]	■	■	■

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, 2016)

■ 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. The existing MCBQ Administrative Record file for basewide ERP activities will be updated as necessary.

d. 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.)

e. For removal actions with a planning period of less than six months, a public notice of the availability of administrative record must be published in the newspaper within 60 days of the initiation of on-site 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.

f. 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 Lance Cpl. Matthew Bragg

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 manpower, 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's stated mission is "to provide Base Operating Support functions for execution of the overall mission of Marine Corps Combat Development Command, to include: personnel administration; facilities; logistics; safety; security; public information; legal; base operations; training management; community services support; and inspector general responsibilities for organic and tenant organizations, units and activities." (MCBQ, 2011)

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

Military Schools and Colleges	Other Tenants/Commands
Education Command/Marine Corps University	Marine Corps Combat Development Command/Combat Development and Integration
Marine Corps War College	Marine Corps Warfighting Lab
School of Advanced Warfighting	Training and Education Command
Command and Staff College	Training Command
Expeditionary Warfare School	Education Command/Marine Corps University
Enlisted Professional Military Education	The Basic School
Training Command	Officer Candidates School
Officer Candidates School	Weapons Training Battalion
The Basic School	Manpower and Reserve Affairs
Marine Corps Embassy Security Group	Marine Corps Recruiting Command
Security Guard	Marine Corps Systems command
	Marine Corps Operational Test and Evaluation Activity
	Marine Corps Cyberspace Operations Group
	Marine Corps Intelligence Activity
	Join Non-Lethal Weapons Directorate
	Marine Corps Embassy Security Group
	Marine Helicopter Squadron One
	4th light Armored Reconnaissance Battalion
	Marine Corps Information Operations Center
	Wounded Warrior Regiment
	National Museum of the Marine Corps
	Marine Corps Non-Appropriated Fund Audit Service
	Military Department of investigative Agencies
	Federal Bureau of Investigation Academy
	Drug Enforcement Administration

Source: MCBQ Quick Facts 2018

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 effects caused by cleaning up 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**). Cleanup activities associated with past operations that ceased after November 1980 and with ongoing hazardous waste management are governed by RCRA. Cleanup activities associated with past operations that ceased before November 1980 are driven by CERCLA.

5.3.2 Installation Restoration Program

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 USEPA Superfund Program authorized by CERCLA. In 1986, the Navy restructured the NACIP Program into the IRP to conform to USEPA'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 USEPA 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, USEPA, 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. The partnering team is referred to as the Quantico Project Managers Team (**QPMT**).

5.3.3 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.

5.3.4 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 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 Preliminary Assessment, a Site Inspection is performed. The Site Inspection 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 Remedial Investigation 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 Feasibility Study 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 Feasibility Study, 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 Record of Decision 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 (USEPA, 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 Report Program Sites

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

Of the 262 sites, 255 sites are closed or deferred to other regulatory programs (for example, the Commonwealth of Virginia Petroleum Underground Storage Tank Program) resulting in 7 sites that are currently open as illustrated below and presented in Table 10. For the open sites, final remedy is in place for three sites, two sites are undergoing treatability studies for groundwater or sediment treatment options, one site is being investigated as part of an RI, and one site is in Remedial Design for the treatment of groundwater. 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 2019 Site Management Plan (CH2M, 2018).

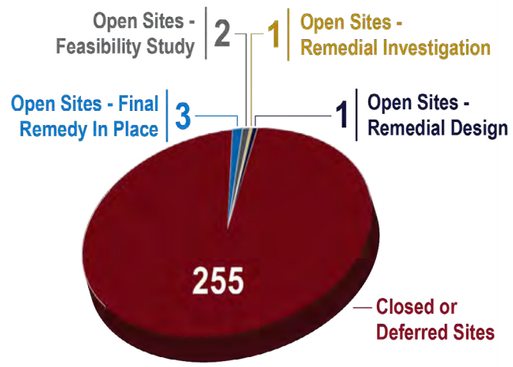


TABLE 10
OPEN INSTALLATION RESTORATION SITES AND STATUS

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 shoreline of Potomac River approximately 250 feet past original location	The final remedy [long-term monitoring (LTM), land use controls, and site reviews] is in place.
	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 which 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	A Feasibility Study Addendum is in process to identify treatment options for groundwater
Site 99	Quantico Embayment	12	The embayment is approximately 190 acres located along the eastern shoreline of MCBQ within a semi-circular inlet of the Potomac River. PCB and pesticide contamination in soil and sediment is present within the embayment area	The final remedy (habitat enhancement cap, land use controls, and site reviews) is in place for sediment.
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	The final remedy (LTM, land use controls, and site reviews) is in place.
Site 102	Abrahams Creek	23	Representing the Abrahams Creek portion of the Quantico Watershed Study. Pesticides have been detected at relatively high concentrations within the creek sediment	A Feasibility Study Addendum is in process to identify treatment options for sediment
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	Petroleum investigation in process to enhance remedial design for the treatment of groundwater
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 building prior to fire; runoff water from firefighting entered a nearby drainage channel	An RI investigation is in process

5.4.2 MRP Sites

The MCBQ MRP includes 42 sites. 23 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 19 sites that are currently open as illustrated below and presented in Table 11. For the open sites, 2 sites are undergoing an investigation to support an SI and 17 sites are undergoing an investigation as part of an RI. The locations of the open sites are also presented on Figure 4.

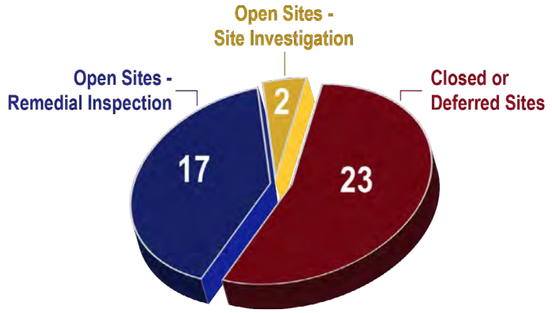
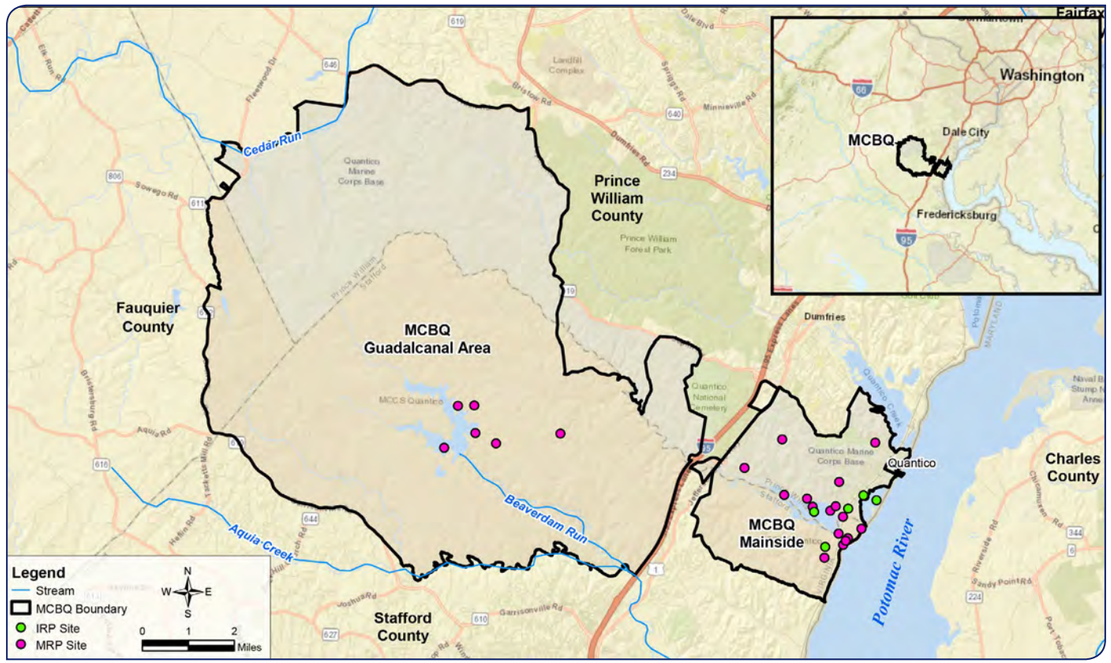


TABLE 11
OPEN MUNITIONS RESPONSE PROGRAM SITES AND STATUS

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	RI Work Plan development in process
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 Work Plan for the analysis of munitions constituents is in process
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 Work Plan for the analysis of munitions constituents is in process
UXO 013C	81 mm Mortar Range (Firing Point K2)	None	Firing point (K2) for former 81 mm mortar and artillery ranges used between 1919 and 1943	RI approach to be determined
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	RI approach to be determined
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 approach to be determined
UXO 019	Grenade Field	31	Former grenade range used between 1917 and and 1942. Site area is 9 acres. Also referred to as the Grenade Course	RI Fieldwork is ongoing
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 Work Plan for the analysis of munitions constituents is in process
UXO 024	Combat Area E Field Firing Range	None	Training area where small arms and potentially larger munitions items may have been used. Estimated end of use of former range in 1943	SI approach to determined based on UXO 013A and 013B RI

Site Identification and Designation	Site Name	Operable Unit	Abbreviated Site History	Status
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 timeframe of range use from 1926 to 1952. Site area is 35 acres	RI Work Plan for the analysis of munitions constituents is in process
UXO 026	Chopawamsic Creek Skeet Range No. 1	34	Former skeet range located along the north bank of the Chopawamsic Creek	RI approach to be determined
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	SI approach to be determined
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 approach to be determined
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 Work Plan for the analysis of munitions constituents to be determined
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)	RI approach to be determined
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 Work Plan in process
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 approach to be determined
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 approach to be determined
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 approach to be determined

FIGURE 4
OPEN MRP/IRP SITES



6 References

AECOM. 2014. *Marine Corps Base Quantico Joint Land Use Study*. June.

CH2M HILL, Inc. (CH2M). 2018. *Final Site Management Plan Fiscal Year 2019, Marine Corps Base Quantico, Quantico, Virginia*. October.

Department of Defense (DoD). 2007. *Restoration Advisory Board Rule Handbook*. March.

Department of Defense Education Activity (DODEA). 2019. DoDEA Americas, U.S. Department of Defense Education Activity. Accessed: March 15, 2019. https://www.dodea.edu/Americas/aboutAm/schools-by-area.cfm.

Department of the Navy (Navy). 2018. *Environmental Restoration Program Manual*.

Fauquier County Public Schools (FCPS). 2019. Fauquier County Public Schools Website. Accessed: March 15, 2019. https://www.fcps1.org/.

Marine Corps Base Quantico (MCBQ). 2015. *Integrated Natural Resources Management Plan: 2015-2019*.

MCBQ. 2018. *Fast Facts 2018*. May.Marine Corps Community Services Quantico (MCCS Quantico). 2019. Semper Fit Recreation. Accessed: March 15, 2019. http://www.quantico.usmc-mccs.org/index.cfm/recreation/.

Naval Facilities Engineering Command (NAVFAC). 1990. *Master Plan, Marine Corps Combat Development Command, Quantico, Virginia*. Chesapeake Division, Washington, D.C.

Prince William County Schools (PWCS). 2019. Prince William County Schools Website. Accessed: March 15, 2019. http://www.pwcs.edu/.

Stafford County Public Schools (SCPS). 2019. Stafford County Public Schools Website. Accessed: March 15, 2019. https://www.staffordschools.net/.

United States Environmental Protection Agency (USEPA). 1998. Federal Facility Agreement, Under CERCLA Section 120, Administrative Docket Number III-FCA-CERC-014. December 8 (Effective Date of February 4, 1999).

USEPA. 2011. *Plan EJ 2014, Office of Environmental Justice*. September.

USEPA. 2016. *Superfund Community Involvement Handbook*. January.

USEPA. 2019a. *Environmental Justice Program*. Accessed: March 15, 2019. http://www.epa.gov/environmentaljustice/.

USEPA. 2019a. *Technical Assistance Grants (TAGs)*. Accessed: March 15, 2019. http://www.epa.gov/superfund/community/tag/.

USEPA. 2019b. *Technical Assistance Services for Communities (TASC)*. Accessed: March 15, 2019. http://www.epa.gov/superfund/community/tasc/index.htm.

United States Marine Corps (USMC). *Marine Corps Base Quantico, "Crossroads of the Marine Corps"*. Accessed: March 15, 2019. http://www.quantico.marines.mil/About/MissionandVision.aspx.

Notes

Prepared by

ch2m SM

ES080410022143VBO