# SIXTH FIVE-YEAR REVIEW REPORT FOR FMC DUBLIN ROAD SUPERFUND SITE TOWNSHIPS OF RIDGEWAY AND SHELBY, ORLEANS COUNTY, NEW YORK

**Prepared by**

**U.S. Environmental Protection Agency**
**Region 2**
**New York, New York**

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**Pat Evangelista, Director**
**Superfund and Emergency Management Division**

March 20, 2025

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**Date**

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## LIST OF ABBREVIATIONS & ACRONYMS

| | |
|---|---|
| ARAR | Applicable or Relevant and Appropriate Requirement |
| BHC | Benzene hexachloride |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations |
| CIC | Community Involvement Coordinator |
| DDD | Dichlorodiphenyldichloroethane |
| DDE | Dichlorodiphenyldichloroethylene |
| DDT | Dichlorodiphenyltrichloroethane |
| EPA | Environmental Protection Agency |
| ESD | Explanation of Significant Differences |
| FYR | Five-Year Review |
| ICs | Institutional Controls |
| IRIS | Integrated Risk Information System |
| MCL | Maximum Contaminant Level |
| mg/L | Milligrams per liter |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| ng/l | Nanograms per liter |
| NPL | National Priorities List |
| NYSDEC | New York State Department of Environmental Conservation |
| OM&M | Operation, Maintenance, and Monitoring |
| OU | Operable Unit |
| PFAS | Per- and polyfluoroalkyl substances |
| PFOA | Perfluorooctanoic acid |
| PFOS | Perfluorooctanesulfonic acid |
| PRP | Potentially Responsible Party |
| RADS | Remedial Action Detection Limits |
| RAGS | Risk Assessment Guidance for Superfund |
| RAO | Remedial Action Objective |
| ROD | Record of Decision |
| RI/FS | Remedial Investigation/Feasibility Study |
| RPM | Remedial Project Manager |
| SPHEM | Superfund Public Health Evaluation Manual |
| SMP | Site Management Plan |
| TCLP | Toxicity characteristic leaching procedure |
| TI | Technical Impracticability |
| ug/L | Micrograms per liter |
| UU/UE | Unlimited Use and Unrestricted Exposure |
| VI | Vapor Intrusion |

# I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the sixth FYR for the FMC Dublin Road Superfund Site. The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared due to the fact that hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of one operable unit (OU), which will be addressed in this FYR.

The FMC Dublin Road Superfund Site FYR was led by Elizabeth McConnell, EPA Remedial Project Manager (RPM). Participants included Pete Mannino (EPA Western New York Remediation Section Supervisor), Liana Agrios (EPA Hydrogeologist), Marian Olsen and Tara Bhat (EPA Human Health Risk Assessors), Julie McPherson (EPA Ecological Risk Assessor), and Michael Basile (EPA Community Involvement Coordinator [CIC]). Mackenzie Osypian, representative for the New York State Department of Environmental Conservation (NYSDEC) also assisted in the preparation of this report. The Villages of Middleport and Medina were notified of the initiation of the FYR. The potentially responsible party (PRP) for the Site was notified of the initiation of the FYR.

The review began on 8/29/2024.

## Site Background

The Site is in northwestern New York in Orleans County and is situated partly in the Town of Ridgeway and partly in the Town of Shelby. The 30-acre property originally consisted of a rectangular portion of approximately 21 acres lying north of Dublin Road, and a triangular portion of approximately nine acres lying south of Dublin Road. The northern section is partially wooded and contains a wetland, a drainage swale, and two inactive rock quarries. Jeddo Creek runs in a northerly direction through the northeast corner of the Site. The southern portion of the Site contains a waste pile, a rectangular pond and a swampy area; it is bounded by the New York State Barge Canal to the south and west, Dublin Road to the north, and a municipal landfill to the east (see Appendix A – Site Map).

From 1933 to 1968, approximately nine acres of the southern portion of the Dublin Road Site were used for disposal of coal ash cinders, industrial debris, lime-sulfur solution residues from a filtration process, and other materials, primarily from the Niagara Sprayer/FMC manufacturing plant in Middleport, New York. These waste materials were placed in the Waste Pile, which consisted of a surface pile and a below-grade burial zone.

The Site was placed on the Superfund National Priorities List (NPL) on June 10, 1986 and was deleted from the NPL on September 21, 2020. Chronology of the Site is listed in Appendix B, Table 1 and documents reviewed for this FYR are listed in Appendix B, Table 2.

**FIVE-YEAR REVIEW SUMMARY FORM**

| SITE IDENTIFICATION | | |
|---|---|---|
| **Site Name:** FMC Dublin Road | | |
| **EPA ID:** NYD000511857 | | |
| **Region:** 2 | **State:** NY | **City/County:** Towns of Ridgeway and Shelby, Orleans County |
| **SITE STATUS** | | |
| **NPL Status:** Deleted | | |
| **Multiple OUs?** No | **Has the site achieved construction completion?** Yes | |
| **REVIEW STATUS** | | |
| **Lead agency:** EPA | | |
| **Author name (Federal or State Project Manager):** Elizabeth McConnell | | |
| **Author affiliation:** EPA | | |
| **Review period:** 8/29/2024 - 12/30/2024 | | |
| **Date of site inspection:** 10/29/2024 | | |
| **Type of review:** Statutory | | |
| **Review number:** 6 | | |
| **Triggering action date:** 3/31/2020 | | |
| **Due date *(five years after triggering action date)*:** 3/31/2025 | | |

# II. RESPONSE ACTION SUMMARY

## Basis for Taking Action

An Administrative Order on Consent was entered into between the NYSDEC and the PRP (FMC Corp.) in 1982, whereby FMC agreed to conduct a field investigation. The Site was added to the NPL on June 1, 1986. FMC and NYSDEC entered into a second Consent Order in February 1988 under which FMC agreed to further define the extent of contamination at the Site, complete the Remedial Investigation/Feasibility Study (RI/FS) and perform the remedial action. The 1988 Consent Order superseded and replaced the 1982 Order. The RI, including a supplemental field investigation, was completed in May 1989 and was approved by NYSDEC in June 1990. The FS was approved in January 1991.

Pathways evaluated in the risk assessment included: surface water for an on-Site intruder; surface water and groundwater for future residents at the Site boundary; groundwater for the nearest current potential receptor; and surface water and soil for the Dublin Road user. The risk assessment report was prepared in 1988 and used the "Superfund Public Health Evaluation Manual" (SPHEM,1986) as guidance. The risk assessment followed the process outlined in SPHEM for groundwater and surface water exposures and compared exposure concentrations to Applicable or Relevant and Appropriate Requirements (ARARs). In later guidance such as the "Risk Assessment Guidance for Superfund (RAGS) Volume 1, Human Health Evaluation Manual (Part A)" (U.S. EPA, 1989), baseline evaluations were not considered complete based on comparisons to ARARs. The contaminants of concern (COCs) at the Site were arsenic, copper, lead, mercury, zinc, benzene hexachloride (BHC) (including alpha, beta, and gamma isomers), dichlorodiphenyltrichloroethane (DDT), and two DDT metabolites; dichlorodiphenyldichloroethylene (DDE) and dichlorodiphenyldichloroethane (DDD). The cancer risk calculated using RAGS for ingestion of overburden groundwater contaminated with arsenic at the Site would have exceeded EPA's acceptable risk range of one in ten thousand ($1 \times 10^{-4}$) to one in a million ($1 \times 10^{-6}$) and a non-cancer Hazard Index (HI) = 1, based on the maximum concentration of arsenic in groundwater at the waste pile area (e.g., 0.366 mg/l).

In the ecological risk assessment, a comparison was conducted between estimated exposure point concentrations and ARAR values corresponding to protectiveness of the resident aquatic and terrestrial biological communities. Additional chemical, physical and biological data and information were obtained through Site-specific sampling and a literature search to assess bioaccumulation potential and environmental impacts. A habitat-based assessment was completed. The rectangular pond had contaminant concentrations exceeding water quality standards for all COCs. The remaining water bodies at the Site exceeded the water quality standards for several COCs. The sediments exceeded the criteria for pesticides in all of the surface water bodies.

## Response Actions

*Remedy Selection*

In March 1993, NYSDEC and EPA issued a joint Record of Decision (ROD) selecting a remedial action for the Site. The ROD listed Remedial Action Objectives (RAOs) which are specific objectives to protect human health and the environment. These objectives are based on available information and standards, such as ARARs. The following RAOs were established:

- Adequately protect against ingestion of, or contact with, contaminated soil;
- Minimize damage to and provide adequate protection of the saturated zone from contaminants migrating from soil;
- Minimize damage from and adequately protect against the spread of the contaminated groundwater;
- Adequately protect against future ingestion of, or contact with, contaminated groundwater;
- Adequately protect against contamination of surface water and sediments in the Site vicinity; and
- Adequately protect against contaminated dust emissions into ambient air.

To address these RAOs, the 1993 ROD called for a number of remedial actions to mitigate exposures and restore the environment. The major elements of the 1993 remedy are presented below.

- Excavation, screening, and stabilization of all contaminated materials (soil and sediments) from the Waste Pile, Rectangular Pond, Swamp, Drainage Swale, the Quarries, and other areas contaminated above cleanup levels;
- Stabilization of materials that failed the toxicity characteristic leaching procedure (TCLP);
- Construction of a customized on-Site containment cell complete with a leachate collection system and permanent cap designed to meet the New York States Landfill Regulations at 6NYCRR Part 360;
- Deposition of stabilized material and other soil/sediment contaminated above cleanup levels in the on-Site containment cell;
- Collection of contaminated groundwater via a series of extraction wells;
- Treatment of contaminated runoff water, construction water, and groundwater in an on-Site groundwater treatment system;
- Restoration of the wetlands that existed on-Site;
- Installation of permanent fencing around the Site;
- Placement of deed restrictions on the property at the completion of remediation; and
- Performance of a long-term operation, maintenance, and monitoring (OM&M) plan at the Site.

To address risks posed by the Site, the ROD identified soil/groundwater cleanup levels for arsenic, copper, zinc, lead, total BHC alpha-BHC, beta-BHC, and gamma-BHC, and DDT (and 2 metabolites)). Refer to Appendix C for cleanup levels for COCs. Although the concentration of mercury was not significant in the 1988 data, a cleanup level for mercury was specified in the ROD.

An Explanation of Significant Differences (ESD) was issued in July 1995, which amended the ROD to address the significant increase in the quantity of contaminated soils that needed to be placed into the containment cell than contemplated in the 1993 ROD.

**Status of Implementation**

The remedial design for this Site was completed and approved in May 1994. The remedial action began in May 1994 and construction was completed in September 1996. The entire Site was cleared of trees and vegetation except for a small area north of Dublin Road. The wood was chipped, stockpiled, and later used as roadbed material on-Site. In 1994, excavation work began in the Waste Pile area and proceeded to the Rectangular Pond, Swamp, Quarries and exclusion zones. Contaminated soils passing the TCLP analysis were directly deposited into the containment cell. Excavated material that failed TCLP was temporarily stockpiled, treated through stabilization and then placed in the containment cell. The total volume of contaminated material excavated in 1994 was 44,931 cubic yards. In 1995, materials were excavated from the entire area south of Dublin Road. The depth of excavation varied, but most areas were excavated down to bedrock. The roadbed of Dublin Road was also excavated. A NYSDEC Part 360 cap was placed over the containment cell. The total volume of contaminated soil excavated in 1995 was 25,947 cubic yards. In 1996, the quarries and the areas between them were sampled. Sample results showed that the material exceeded cleanup levels. The quarries were dewatered, sediments were removed, soil between them was

excavated, and the material was disposed of off-Site at the Chemical Waste Management facility in Model City, New York. The total volume of contaminated sediment disposed of off-Site was 771 cubic yards. A new wetland was constructed north of Dublin Road and the area south of Dublin Road was graded and a soil layer placed over the bedrock. The disturbed areas were then seeded, and the Site was enclosed by a fence. Surface water run-off from the controlled areas was collected, treated, and discharged to Jeddo Creek and later to the on-Site containment cell.

In 1995, the groundwater extraction system was installed, and the treatment plant was constructed. In the fall of 1996, the groundwater extraction and treatment systems were placed into operation. The groundwater extraction system is comprised of eleven extraction wells and sumps. The treated groundwater was discharged to the on-Site wetland in accordance with the established discharge limits.

In 1996, the wetlands were restored. The former drainage swale north of Dublin Road was restored as an open water impoundment between the original Swamp and the East Quarry. Isolated vegetation, peninsulas, and island habitat were incorporated in this wetland design.

EPA documented completion of construction activities in the Preliminary Closeout Report dated May 29, 1997.

In August 2005, FMC submitted a proposal to EPA and NYSDEC for the shutdown of the groundwater extraction system at the Site and for modifications of the Site monitoring program based on data. By letter dated August 28, 2006, the Agencies provided comments to FMC and advised that for purposes of the evaluation by the Agencies relative to discontinuing or modifying the groundwater extraction remedy, FMC should perform a Technical Impracticability (TI) Evaluation based on EPA guidance. Ultimately, because of decreasing concentrations of groundwater in containment cell monitoring wells and perimeter monitoring wells located outside of the containment cell, the report did not provide a rationale for a TI waiver at the Site, instead it simply provided the justification that continued operation of the groundwater treatment system was no longer necessary. On May 29, 2012, NYSDEC approved the TI report and the operation of the groundwater extraction and treatment system was terminated on May 29, 2012. The treatment system was dismantled in 2023 in accordance with a Decommissioning Work Plan, approved by the NYSDEC on May 16, 2023.

## IC Summary Table

Table 1: Summary of Planned and/or Implemented ICs

| Media, engineered controls, and areas that do not support UU/UE based on current conditions | ICs Needed | ICs Called for in the Decision Documents | Impacted Parcel(s) | IC Objective | Title of IC Instrument Implemented and Date (or planned) |
|---|---|---|---|---|---|
| Groundwater, Surface Water and Soils | Yes | Yes | Entire Site | No activities to disturb or interfere with the containment cell, wetlands and the groundwater | Environmental Protective Easement and Declaration of Restrictive Covenants, June 17, 2015 |

The ROD included recommendations for limiting future use of the Site and the groundwater through deed restrictions, to ensure that the remedial measures taken on the Site will not be disturbed and that the Site

will not be used for purposes incompatible with the completed remedial action. The deed restrictions were implemented on June 17, 2015 and are the only institutional controls (ICs) for this Site.

**Systems Operations/Operation & Maintenance**

The Site Management Plan (SMP) includes operation and maintenance of the leachate collection system and maintenance of the containment cell. The fencing is inspected and leachate is collected on a monthly basis and disposed of off-site. The groundwater treatment system was not operated during this FYR period, and no treated water was discharged to either the on-Site wetlands or to Jeddo Creek. The SMP also includes periodic groundwater and surface water monitoring. Currently groundwater is sampled on a semi-annual basis and surface water is sampled annually to assess performance of the remedy and/or surface and groundwater conditions at the Site. The groundwater monitoring well network consists of monitoring wells both up-gradient and down-gradient of the Site, as well as wells inside the containment cell. A draft SMP revised to reflect the decommissioning of the groundwater collection system and treatment plant was submitted to DEC in April 2024.

**Remedy Resilience Assessment**

Potential Site impacts from severe-weather events have been assessed, and the performance of the remedy is currently not at risk due to these expected effects. Please see Appendix D for additional information.

## III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the **last** FYR as well as the recommendations from the **last** FYR and the current status of those recommendations.

**Table 2**: Protectiveness Determinations/Statements from the 2019 FYR

| OU # | Protectiveness Determination | Protectiveness Statement |
|---|---|---|
| 1 | Protective | The implemented remedy for the Site is protective of human health and the environment. |

There were no issues and recommendations identified in the last FYR.

## IV. FIVE-YEAR REVIEW PROCESS

**Community Notification, Involvement & Site Interviews**

On August 7, 2024, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, and Puerto Rico, including the FMC Dublin Road Superfund Site. The announcement can be found at the following web address: https://www.epa.gov/superfund/R2-fiveyearreviews.

In addition to this notification, the EPA CIC for the Site, Michael Basile, posted a public notice on the EPA Site webpage (https://www.epa.gov/superfund/fmc-dublin-road) and provided the notice to the villages of Middleport and Medina by email on January 21, 2025, with a request that the notice be posted in municipal offices and on the village webpages. This notice indicated that an FYR would be conducted

at the FMC Dublin Road Superfund Site to ensure that the cleanup at the Site continues to be protective of human health and the environment. Once the FYR is completed, the results will be made available at the following repository Middleport Public Library. 8 Vernon Street, Middleport, NY. In addition, the final report will be posted on the following website: https://www.epa.gov/superfund/fmc-dublin-road. Efforts will be made to reach out to local public officials to inform them of the results. No interviews were conducted for this FYR.

## Data Review

The network of monitoring wells has been installed to monitor groundwater conditions both upgradient and downgradient of the Site. The network consists of containment cell and perimeter wells.

*Containment Cell Monitoring Wells*

The containment cell monitoring wells are intended to monitor the integrity of the containment cell and the potential to impact groundwater quality at the Site. The containment cell is monitored by three overburden wells (MW-27, MW-92, and MW-93) and four wells installed in the upper bedrock (MW-40, MW-89, MW-90, and MW-91). These wells were sampled in November 1996 to establish baseline conditions. In accordance with the requirements in the SMP, the containment cell monitoring wells are currently sampled semi-annually for pesticides (four BHC isomers) and metals (arsenic, copper, lead and zinc). Samples from monitoring well MW-93 during the November 2022 sampling event and monitoring wells MW-27, MW-92, and MW-93 during the October 2023 sampling event could not be collected due to insufficient water volume within the wells. The containment cell cover is inspected semiannually to identify erosion, bare areas, puddles, sediment, dead/dying grass, weeds/brush, animal holes/burrows, sediment in surrounding ditches, or any other items that may affect the integrity of the cap.

Analytical results from groundwater collected at the containment cell monitoring wells during this FYR period were all non-detect or detected at concentrations below respective groundwater cleanup levels for all parameters analyzed. Monitoring of these wells will continue.

*Perimeter Wells*

The Site perimeter wells are intended to assess if contaminated groundwater is migrating off-Site. The Site perimeter is monitored by five wells: overburden well MW-20, upper bedrock wells MW-24, MW-42, and MW-61, and lower bedrock well MW-60. Overburden monitoring well MW-20 is located at the northeast corner of the Site hydraulically downgradient from the remedial area. Upper bedrock monitoring wells MW-24 and MW-42 are located at the downgradient perimeter of the Site near Jeddo Creek. Lower bedrock monitoring well MW-60 and upper bedrock monitoring well MW-61 are located on the northeast corner of the Site near Jeddo Creek. In accordance with the requirements in the SMP, the perimeter monitoring wells were sampled semi-annually for pesticides (four BHC isomers) and metals (arsenic, copper, lead, and zinc). Samples from monitoring well MW-24 could not be collected in any of the semi-annual samples during the FYR period due to insufficient water yield within the well, although samples from the other two upper bedrock wells were able to be collected. Samples from monitoring well MW-20 could not be collected during the October 2023 sampling event due to insufficient water volume within the well.

Analytical data results from groundwater samples collected at the perimeter monitoring wells during this FYR period were all non-detect or detected at concentrations below the respective groundwater cleanup levels for all parameters analyzed. Monitoring of these wells will continue.

*Surface Water Quality Sampling*

In accordance with the requirements in the SMP, surface water monitoring of the on-Site wetland and East and West quarries is performed to assess potential migration of residual contaminated groundwater to surface water. Surface water monitoring was conducted annually from 2019-2023. The surface water samples were collected from three locations at the Site (the wetland [SW-1], East quarry [SW-2] and West quarry [SW-3]) and analyzed for pesticides (four BHC isomers) and metals (arsenic, copper, lead, and zinc).

Analytical data results from surface water samples analyzed during this FYR period indicated no exceedances of surface water cleanup levels for all parameters. Monitoring of these surface water locations will continue.

*Wetlands, Quarries and Drainage Culverts*

Recent semi-annual observations of the Site ditches and culverts indicated that they are all free of debris and are free flowing. Also, observations made during routine visits revealed no problem with wetland vegetation or the integrity of the dike associated with wetlands.

*Emerging Contaminants*

Emerging contaminant sampling was conducted at the Site in May 2021 at the request of NYSDEC to evaluate the presence/absence of 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS). A total of six monitoring wells were sampled: MW-27, MW-40, MW-89, MW-91, MW-92, and MW-93. 1,4-Dioxane was detected at concentrations ranging from non detect to 0.11 micrograms per liter (µg/l) (MW-40). Perfluorooctanoic acid (PFOA) was detected at concentrations ranging from non detect to 2.3 nanograms per liter (ng/l) (MW-40). Perfluorooctanesulfonic acid (PFOS) was detected at concentrations ranging from 0.34 ng/l (MW-89) to 7.4 ng/l (MW-40). All detected emerging contaminants were present at concentrations below the New York State maximum contaminant levels (MCLs) of 10 ng/l for PFOA and PFOS and 1 µg/L for 1,4-dioxane. In April 2024, EPA finalized federal MCLs for PFOA and PFOS at 4 ng/L for each compound, along with three other PFAS compounds. One groundwater sample contained PFOS at a concentration of 7.4 ng/L (MW-40), above the federal MCL. All other sample results were below federal MCLs. EPA will continue to work with the NYSDEC to determine future sampling needs.

## Site Inspection

The inspection of the Site was conducted on 10/29/2024. In attendance were Elizabeth McConnell (EPA RPM), Liana Agrios (EPA Hydrogeologist), Tara Bhat (EPA Risk Assessor), Mackenzie Osypian (NYSDEC Project Manager), Adam Morgan (NYSDEC Region 8 Staff), Olivia Dickenson (Parsons), and Jeffrey Poulsen (Parsons). The purpose of the inspection was to assess the protectiveness of the remedy.

During the site inspection, two of the sump pipes (one located in the northwest and one in the southwest) were noted to be damaged and uncapped. Several pipes were also observed that are not identified or discussed in the annual reports. Furthermore, two black HDPE pipes were observed; one was damaged by a mower and the other one was missing a cap. Monitoring wells MW-58E and MW-58W were damaged and did not have watertight plugs. Monitoring wells MW-58 and MW-59 did not have watertight plugs and were open to the environment. Two trespassing signs were noted to be faded beyond legibility. The Site fence was noted to be in good condition. However, one area had fallen branches on the fence that

Parsons indicated would be cleared during routine maintenance. Repairs to the pipes and wells are discussed below in "other findings."

## V. TECHNICAL ASSESSMENT

**QUESTION A: Is the remedy functioning as intended by the decision documents?**

The primary objectives of the ROD were to stabilize contaminated materials in a customized containment cell, hydraulically contain groundwater by extraction, and treat on-Site water. EPA's review of Site documents, results of past groundwater and surface water data, and results of past Site inspections indicate that the ROD goals continue to be met by remedial activities.

Performance data collected for the startup of the groundwater extraction and treatment system, while operational, indicated that the system functioned as intended and captured contaminated groundwater. Since 2013, groundwater analytical results from the containment cell and perimeter monitoring wells were below groundwater cleanup level concentrations. Operation of the groundwater extraction and treatment system was discontinued on May 29, 2012, following NYSDEC approval of the 2011 TI Evaluation of Groundwater Restoration at the FMC Dublin Road Site Report. Since the termination of the system, water-quality data derived from containment cell monitoring, perimeter monitoring, and surface-water monitoring do not show any groundwater migration issues resulting from the system shutdown. The treatment system was decommissioned in 2023.

The integrity of the cap has been maintained and the 12 containment cell collection sumps are operating as expected and maintain water levels at the prescribed levels beneath the cell. Several monitoring wells and sump pipes were damaged and require repair. The cap is fully vegetated with no signs of erosion. The grass cover serves as a barrier to potential exposures to contaminants below the cover. Site fencing was observed to be in good condition and repairs were made when necessary, although signs prohibiting trespassing were observed to be faded during the site inspection. All wells were clearly marked. Surface water control structures (e.g., swales, wetland, and quarries) are in place and functioning. These structures prevent or limit erosion and potential exposures to the surface water.

The remedy has eliminated exposure to ecological receptors by excavating contaminated sediments from the swamps, quarry and rectangular pond and placing these materials along with contaminated soils in an on-Site containment cell with a leachate collection system and a cap which meets 6 NYCRR Part 360 regulations. There has been no change to the wetland vegetation or the integrity of the dike associated with the wetlands. Surface water locations in the wetland area near the east and west ends of the quarry are monitored to ensure that concentrations of contaminants of concern do not exceed the Site-specific surface water cleanup levels. The surface water data collected and analyzed during this FYR period indicated no exceedances of surface water cleanup levels for all parameters.

**QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid?**

*Human Health Risk Assessment*

There have been no changes in the physical conditions and land use of the Site over the past five years that could affect the protectiveness of the remedy. Although the risk assessment process used at the time of the remedy has changed, the decision to take an action and the RAOs described under Section II remain

valid. The designation of "industrial" land use and potential exposure pathways considered in the baseline human health risk assessment have not changed. Consistent with the remedy identified in the ROD, direct exposure to soils were interrupted by the excavation, stabilization and screening of all contaminated materials in soil and sediments from the waste pile, rectangular pond, swamp, drainage swale, and the quarries. Other areas of the Site contaminated above soil cleanup levels and material that failed TCLP toxicity characteristics were stabilized and placed under the NYSDEC Part 360 cap in the on-Site containment cell. In general, the Site has limited access based on location within a low-traffic area with fencing surrounding the Site preventing on-Site access. There is no exposure to groundwater at the Site and analytical results from the containment cell and perimeter monitoring wells were all non-detect or detected at concentrations below the respective groundwater cleanup levels for all parameters analyzed.

*Cleanup Values*

As indicated in the previous FYR, the cleanup level for arsenic in groundwater is listed as 0.025 milligrams per liter (mg/L) while the MCL for arsenic is currently 0.01 mg/L. As described in the data review section, the majority of the groundwater concentrations of arsenic in monitoring wells are below the current arsenic MCL of 0.01 mg/L. The exceptions are MW-40, where arsenic was detected at 0.012 mg/L in November 2020 and May 2023; both of these results were qualified with a J-flag, which means that the values were estimated. For the sampling and analysis performed in 2020, the arsenic reporting limit was 0.015 mg/L, above the MCL. During the subsequent years a lower reporting limit (0.0056 mg/L) was used for arsenic.

*Toxicity Values*

Since the last FYR, several toxicity values were identified for updates through the Integrated Risk Information System (IRIS), EPA's database of toxicity values. The toxicity values for arsenic were updated through the IRIS process in January 2025. The findings of the toxicological review included a lower oral reference dose and a higher oral cancer slope factor, thus indicating an increased level of toxicity than previously believed. However, these findings would not change the conclusions of the risk assessment, which had already identified that arsenic exceeded EPA's risk and hazard benchmarks in groundwater, and the determination that action was needed to address this contaminant. In addition, copper is undergoing review by the Agency of Toxic Substances and Disease Registry (ATSDR) that provides toxicological profiles for chemicals that are used in assessing toxicity at Superfund sites where IRIS values are not available. Further, chronic and/or subchronic oral reference doses (RfDs) were added or revised due to ATSDR updates for the following compounds: copper, DDD, DDE, and DDT. The change in toxicity values for DDD led to revisions of some of the EPA's regional screening levels (RSLs): residential soil RSL, industrial soil RSL, tap water RSL, and risk-based soil screening level (SSL). None of the DDD RSL revisions impact the protectiveness of the ROD soil cleanup goal for DDD, since the DDD soil cleanup goal (12.4 mg/kg) is within the range of acceptable risk/hazard results for both the current residential and industrial soil RSLs. Finally, in 2024, the EPA issued new residential lead guidance; however, since the Site is industrial the changes are not applicable. Since all exposure routes have been interrupted, a change in toxicity value would not affect the protectiveness of the remedy.

*Vapor Intrusion*

Soil vapor intrusion (VI) based-groundwater concentrations were evaluated in the previous FYRs. The results from the current analysis are consistent with previous analyses that vapor intrusion is not considered to be a concern at this Site.

*Ecological Risk Assessment*

Although the exposure assumptions and toxicity assessment conducted to support the 1989 Ecological Risk Assessment may not necessarily reflect the current methodology, contaminated sediments and soil

were dredged/excavated and contained within a secure covered landfill. Thus, the actions taken at the Site have eliminated any potential risk from surface soil contaminants to terrestrial receptors. Furthermore, surface water analytical results indicated that the concentrations are below surface water cleanup levels which are protective of ecological receptors.

**QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?**

No additional information has come to light that would call into question the protectiveness of the remedy.

## VI. ISSUES/RECOMMENDATIONS

No additional issues or recommendations.

| Issues/Recommendations |
|---|
| **OU(s) without Issues/Recommendations Identified in the Five-Year Review:** |
| *OU1 – Site-wide remedy* |

**OTHER FINDINGS**

The following are recommendations that were identified during the FYR and may improve performance of the remedy and improve management of OM&M, but do not affect current and/or future protectiveness:

- **Leachate Collection System Maintenance:** During the site inspection, two of the sump pipes (one located in the northwest and one in the southwest) were noted to be damaged and uncapped. Two black HDPE pipes were observed; one was damaged by a mower and the other one was missing a cap. According to design plans, these pipes are likely cleanout pipes that connect to the leachate collection system. The pipes should be repaired and caps added to prevent infiltration to the leachate collection system at these points.
- **Monitoring Well Maintenance:** Monitoring wells MW-58E and MW-58W were damaged and did not have watertight plugs. Monitoring wells MW-58 and MW-59 did not have watertight plugs and were open to the environment. The damaged monitoring wells should be repaired, and appropriate watertight plugs should be added to each well.
- **Signage:** Replace faded trespassing signs.
- **As-built Design:** Several pipes were observed during the site inspection that are not identified or discussed in the annual reports. The design drawings show the layout of the leachate collection system with four primary and four secondary sumps, while in the annual reports a total of twelve sump pipes are identified. During the site inspection, twelve sump pipes were observed. Design drawings also show four cleanout pipes that connect to the leachate collection system, and twelve toe drains for water that flows over the cap geotextile. As built drawings should be revised to show the actual layout of the sump pipes, cleanouts, and toe drains.

## VII. PROTECTIVENESS STATEMENT

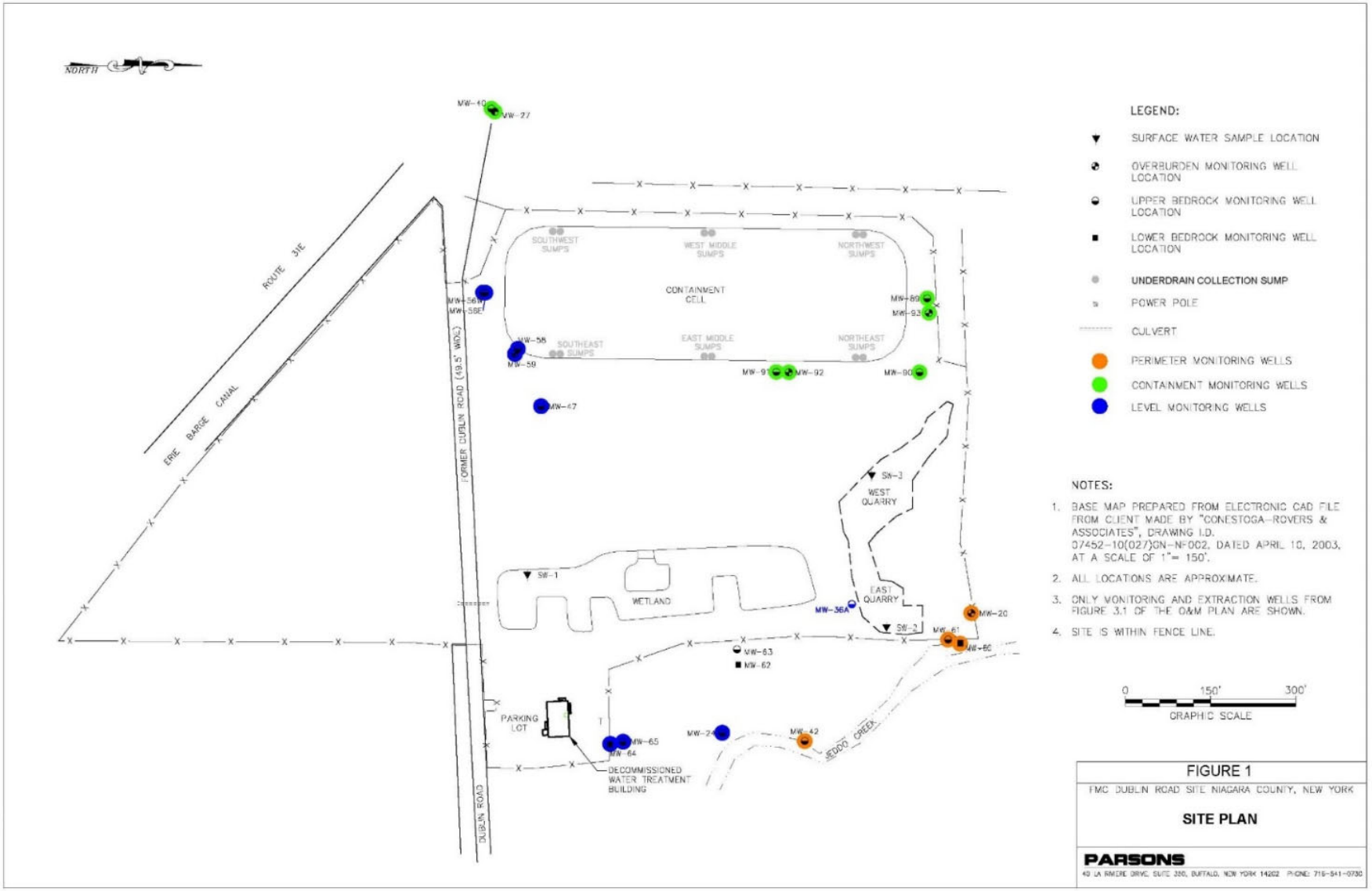
| Protectiveness Statement(s) | |
|---|---|
| *Operable Unit:*<br>OU1 | *Protectiveness Determination:*<br>Protective |
| *Protectiveness Statement:*<br>The remedy at the FMC Dublin Road Landfill Site is protective of human health and the environment. | |

| Sitewide Protectiveness Statement |
|---|
| *Protectiveness Determination:*<br>Protective |
| *Protectiveness Statement:*<br>The remedy at the FMC Dublin Road Landfill Site is protective of human health and the environment. |

## VIII. NEXT REVIEW

The next FYR report for the FMC Dublin Road Superfund Site is required five years from the completion date of this review.

# APPENDIX A – SITE MAP



# APPENDIX B – REFERENCE LIST

| **Appendix B, Table 1: Chronology of Site Events** | |
|---|---|
| **Event** | **Date(s)** |
| Administrative Order on Consent | 1982 |
| Remedial Investigation | 1982 |
| Proposal to NPL | 1984 |
| Final Listing on NPL | 1986 |
| Remedial Investigation/Feasibility Study completed by PRP | 1989 |
| Record of Decision | 1993 |
| Remedial Design performed by PRP | 1994 |
| Explanation of Significant Differences | 1995 |
| Remedial Action performed by PRP | 1994-1996 |
| Preliminary Close-out Report | 1997 |
| First Five-Year Review conducted by EPA | 2000 |
| Second Five-Year Review conducted by EPA | 2004 |
| Third Five-Year Review conducted by EPA | 2010 |
| Fourth Five-Year Review conducted by EPA | 2015 |
| Fifth Five-Year Review conducted by EPA | 2020 |
| Site Delisted from NPL | 2020 |

*https://www.epa.gov/superfund/fmc-dublin-road*

**Appendix B, Table 2: Documents, Data and Information Reviewed in Completing the Five-Year Review**

| Document Title, Author | Date |
|---|---|
| Record of Decision | 1993 |
| First Five-year Review | 2000 |
| Second Five-Year Review | 2005 |
| Third Five-Year Review | 2010 |
| Site Management Plan | 2014 |
| Fourth Five-Year Review | 2015 |
| Periodic Review Report | 2019-2023 |
| Fifth Five-Year Review | 2020 |
| Dublin Road Decommissioning Report | 2024 |
| EPA guidance for conducting five-year reviews and other guidance and regulations to determine if any new Applicable or Relevant and Appropriate Requirements relating to the protectiveness of the remedy have been developed since EPA issued the ROD. | |

# APPENDIX C – CLEANUP GOALS

Remedial goals were based on State ARARs or State RAOs for soil, sediment, groundwater, and surface water. Cleanup goals by media are listed below.

**Soil cleanup goals** included: arsenic (35 mg/kg), copper (25 mg/kg); mercury (0.1 mg/kg); zinc (30 mg/kg; DDT and DDE 8.8 mg/kg; DDD (12.4 mg/kg); lead 93 mg/kg); alpha-BHC (0.46 mg/kg); beta-BHC (1.6 mg/kg); and gamma BHC (2.3 mg/kg).

**Sediment cleanup goals** included: arsenic (5 mg/kg); copper (19 mg/kg); lead (27 mg/kg); mercury (0.11 mg/kg); and zinc (85 mg/kg).

**Groundwater cleanup goals** included: arsenic (0.025 mg/l); copper (0.2 mg/l); lead (0.015 mg/l); and zinc (0.3 mg/l).

**Surface water cleanup goals** included: arsenic (0.19 mg/l); copper (0.027 mg/l); lead (0.011 mg/l); BHC (total) (0.0005 mg/l); and DDT, DDE, and DDD (0.0001 mg/l).

# APPENDIX D – REMEDY RESILIENCE ASSESSMENT

In accordance with Regional practice, three tools were utilized to assess the FMC Dublin Road Landfill Site in the Village of Middleport, Shelby County, New York (NY). Screenshots from each of the tools assessed are included below.

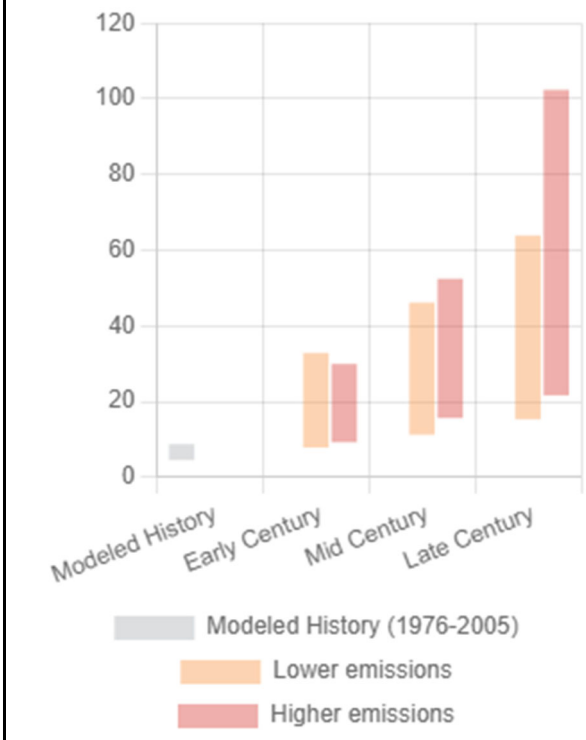
The first tool used to assess the Site is the CMRA tool, version 1.3.1. According to this tool, average daily temperatures are projected to increase. Appendix D, Figure 1 shows the projected increases in temperature under lower emissions and higher emissions scenarios. Temperatures are expected to rise. The projected number of days with a maximum temperature over 90°F are 17.6 under the lower emissions scenario (+11.3 days since 1976-2005) and 19.3 under the higher emissions scenario (+13.0 since 1976-2005). Average annual total precipitation is projected to increase slightly while the number of days with precipitation is expected to decrease (Appendix D, Figure 2). According to this tool, the National Risk Index Rating for extreme heat is "Relatively Low". Three of the four other hazards evaluated by the tool – drought, flooding, and wildfire – each have a National Risk Index Rating of "Very Low". The hazard of coastal inundation has no rating, due to the inland location of the Site.

The second tool utilized is called the National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise Viewer. Appendix D, Figure 3 shows the current mean higher high water elevation while Appendix D, Figure 4 shows the impacts of sea level rise of 10 feet. This tool shows the Site location will not be impacted by sea level rise.

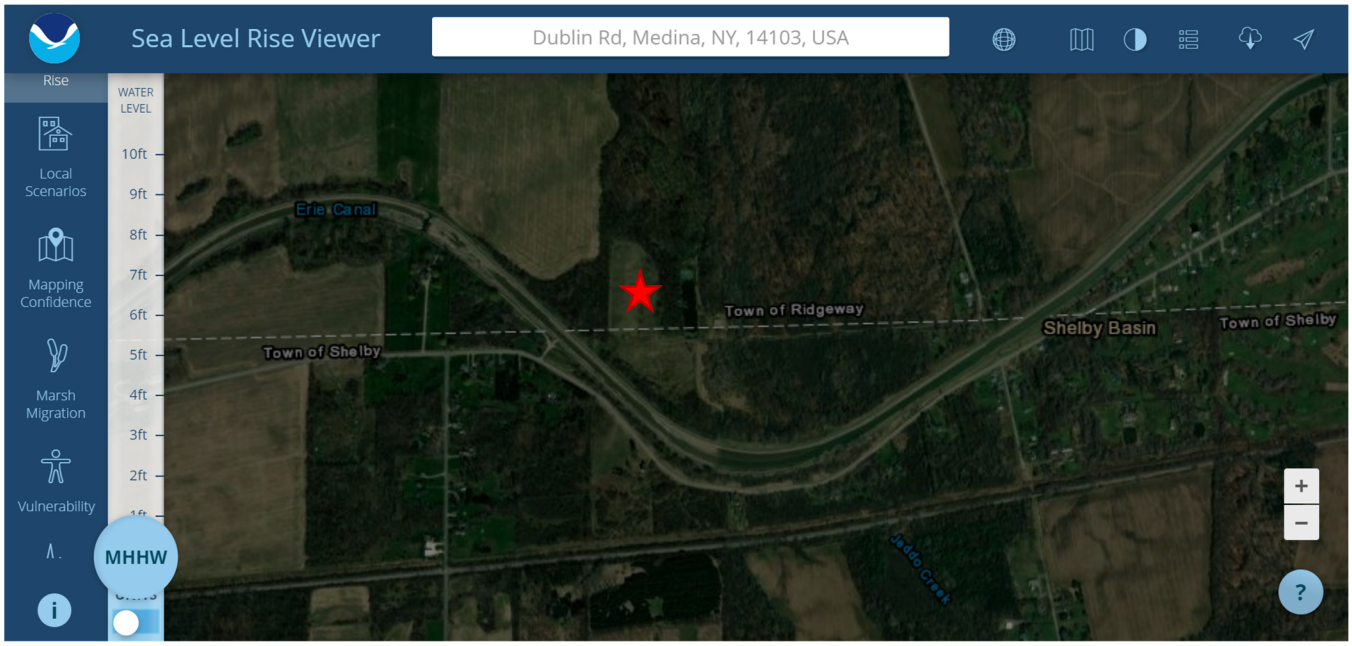
The final tool utilized is called the United States Geological Society (USGS) National Landslide Inventory. Appendix D, Figure 5 shows landslide activity in the area of the Site. The Site has not experienced landslide activity in the past and is likely not susceptible to future landslide activity.

Weather-related hazards are expected to have minor impacts the Site and no sea level rise potential is indicated above. OM&M consists of periodic Site inspections, landfill maintenance and monitoring and groundwater monitoring. Additional inspections of the Site are performed after severe weather events as well and this will continue into the future. Based on this information, potential Site impacts from severe-weather effects have been assessed, and the performance of the remedy is currently not at risk due to these expected effects.

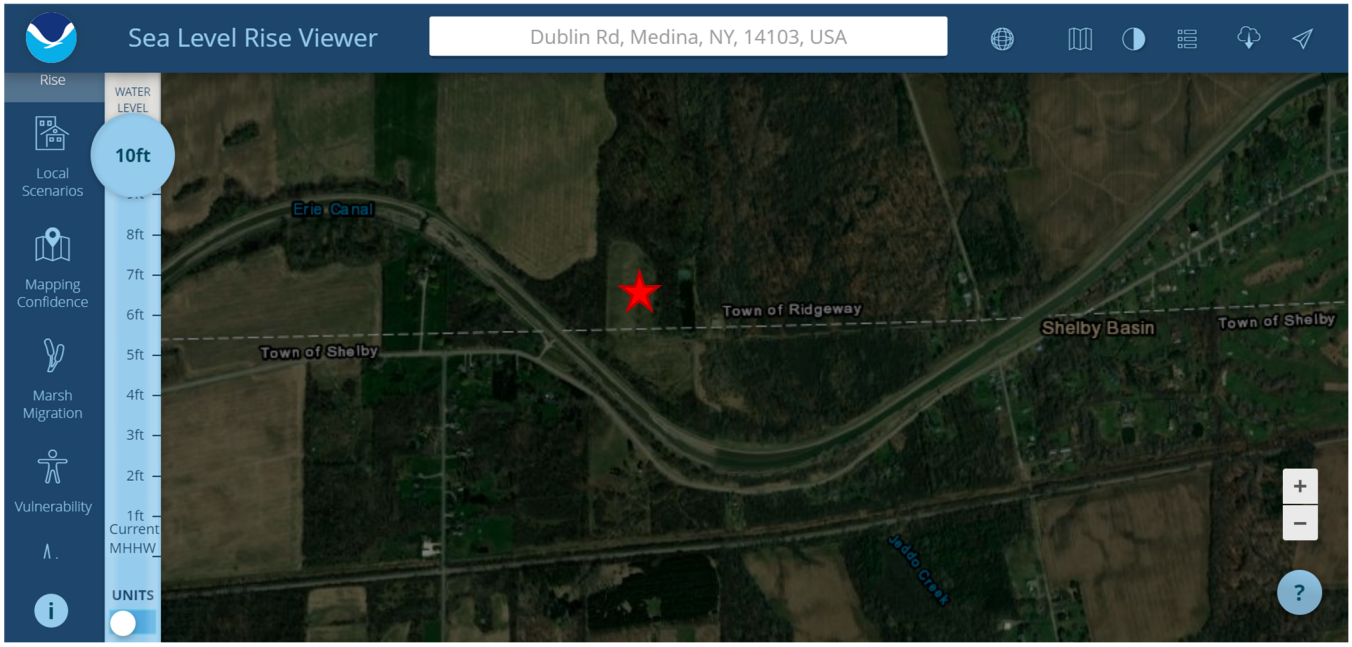

Appendix D, Figure 1 – CMRA Heat Projection



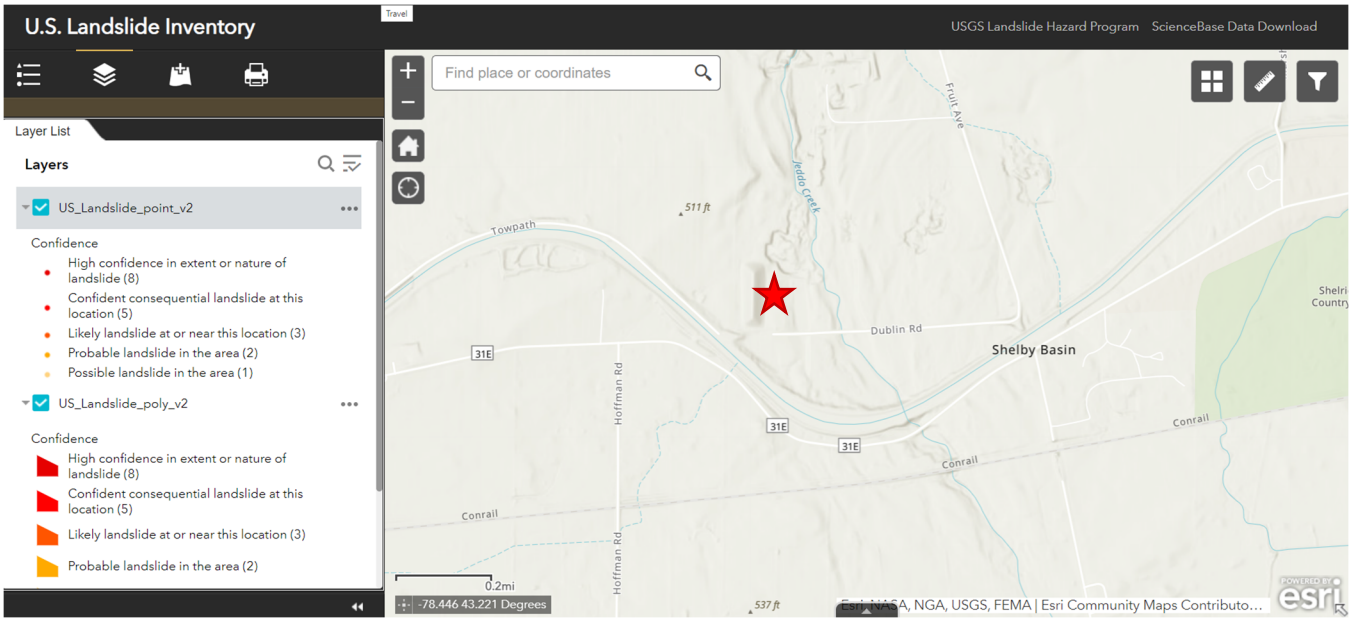

Appendix D, Figure 2 – CMRA Precipitation Projection




Appendix D, Figure 3 – NOAA Sea Level Rise Viewer: Current Sea Levels




Appendix D, Figure 4 – NOAA Sea Level Rise Viewer: 10 Feet of Sea Level Rise




Appendix D, Figure 5 – United States Geological Society (USGS) National Landslide Inventory