Section 594 Ohio and North Dakota Environmental Infrastructure Program

Draft Environmental Assessment and
Draft Finding of No Significant Impact
for the
Storm Sewer Improvements to the Village of Russells Point Project

Logan County, Ohio

United States Army Corps of Engineers

Louisville District

July 2022

DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Section 594 Program – Ohio and North Dakota Environmental Improvement Program

Storm Sewer Improvements to the Village of Russells Point Project
Logan County, Ohio

The U.S. Army Corps of Engineers, Louisville District (USACE) has conducted an Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969, as amended, for the Village of Russells Point Storm Sewer Improvements Project (Project) planned for the Village of Russells Point in Logan County, Ohio. The draft EA, dated July 2022, evaluated alternatives to improve the storm sewer collection system in order to reduce the infiltration of stormwater into the sanitary sewer system.

The draft EA, incorporated herein by reference, evaluated potential impacts of alternatives that would increase the conveyance of stormwater to reduce ponding that occurs after rain events and to reduce infiltration of stormwater into the sanitary sewer system that serves the residents of Russells Point. The recommended Project plan includes:

- Installation of approximately 6854 linear feet of 12" gravity storm sewer line
- Installation of approximately 1571 linear feet of 15" gravity storm sewer line
- Installation of approximately 1496 linear feet of 18" gravity storm sewer line
- Installation of approximately 1912 linear feet of 21" gravity storm sewer line
- Installation of approximately 2260 linear feet of 24" gravity storm sewer line
- Installation of approximately 791 linear feet of 27" gravity storm sewer line
- Replacement of approximately 3585 linear feet of existing storm sewer line

Two action alternatives were considered to address the currently inadequate storm sewer collection system in the project area. An additional two action alternatives were dismissed from further consideration due to various concerns as discussed in Section 2.2 of the draft EA. In addition to the two action alternatives, the "no action" alternative was evaluated in detail in the draft EA.

A summary assessment of the potential effects of the recommended Project plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Project Plan

Resource	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	☒	☐	☐
Air quality	☒	☐	☐
Aquatic resources/wetlands	☐	☒	☐
Invasive species	☐	☒	☐

Resource	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Fish and wildlife habitat	☐	☒	☐
Threatened/Endangered species/critical habitat	☐	☒	☐
Historic properties	☐	☐	☒
Other cultural resources	☐	☐	☒
Floodplains	☒	☐	☐
Hazardous, toxic & radioactive waste	☒	☐	☐
Hydrology	☐	☐	☒
Land use	☐	☐	☒
Navigation	☐	☐	☒
Noise levels	☒	☐	☐
Socio-economics	☐	☐	☒
Environmental justice	☐	☐	☒
Soils	☐	☒	☐
Tribal trust resources	☐	☐	☒
Water quality	☐	☒	☐
Climate change	☒	☐	☐
Air quality	☒	☐	☐

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended Project plan. Best management practices (BMPs) as detailed in the draft EA will be integrated into the project plans and specifications and implemented during construction activities to minimize impacts. These actions are described in greater detail in Section 3.0 of the draft EA.

No compensatory mitigation is required as part of the recommended Project plan.

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, the USACE determined that the recommended plan may affect but is not likely to adversely affect the following federally listed species or their designated critical habitat: Indiana bat (*Myotis sodalis)* and northern long-eared bat (*Myotis septentrionalis)*. The USACE determined that the recommended plan has no effect on the following federally listed species or their designated critical habitat: eastern massasauga (*Sistrurus catenatus)*, copperbelly water snake (*Nerodia erythrogaster neglecta)*, and rayed bean (*Villosa fabalis)*. The USFWS Ohio Field Office concurred with the Corps' determination on [PENDING].

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the USACE determined that the recommended Project plan has no potential to cause adverse effects on historic properties.

A 30-day public and agency review of the draft EA was completed on [*PENDING*]. All comments submitted during the public comment period will be responded to in the Final EA.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended Project plan would not significantly affect the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____ _____

Date

Eric D. Crispino
Colonel, Corps of Engineers
District Commander

SECTION 594
STORM SEWER IMPROVEMENTS
TO THE VILLAGE OF RUSSELLS POINT PROJECT
LOGAN COUNTY, OHIO
TABLE OF CONTENTS

List of Figures

List of Tables

List of Appendices

The brief and concise nature of this document is consistent with the 40 CFR requirements of the National Environmental Policy Act (NEPA) to reduce paperwork and delay by eliminating duplication with existing environmental documentation, by incorporating pertinent material by reference and by emphasizing interagency cooperation.

1.0 **Project Description**

1.1 Project Purpose and Need, Scope, and Authority

The purpose of the proposed project is to improve the storm sewer collection system of the Village of Russells Point (hereafter referred to as "the Village"), as this system is currently undersized and at the end of its useful life. The inadequacy of this storm sewer collection results in an increased sanitary sewer flow in the Logan County Water Pollution Control District (LCWPCD) during wet weather events. Cracks along the pipes are also causing the soil above the pipe to subside, creating holes on the surface and further blocking the existing system. The Village is served by sanitary sewers that are owned and maintained by the Logan County Sewer District (LCSD), while the storm sewers that serve the Village are owned by the Village itself. During rainfall events, some of the ponded runoff that is unable to enter the storm sewer system instead enters the sanitary sewer system. This can happen due to leaking sewer pipes or defects in the manholes of the sanitary sewer system. In addition, there appear to be residences in the Village that have storm water sump pumps and roof or footer drains connected to the sanitary sewers, which further increases the storm water loads on the system. This is sometimes the result of a lack of other adequate outlets for these pumps and drains. The LCWPCD is tasked by the Ohio Environmental Protection Agency (EPA) with reducing the amount of storm water entering its sanitary sewer system. LCWPCD has determined that certain areas of the Village are contributing significant amounts of storm water into the sanitary sewer system and will require sump pumps and footer drains in those areas to be disconnected by their owners from the system as required by the Ohio EPA. Therefore, adequate storm sewer outlets must be provided in these areas.

The purpose of this draft Environmental Assessment (EA) is to analyze the potential environmental impacts of the federally funded portion of the Storm Sewer Improvements to the Village of Russells Point Project (Project) as proposed by the Village and to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

The Project would carry out the terms of a partnership agreement signed on May 26th, 2021 between the Village and the U.S. Army Corps of Engineers (USACE) established under the authority of Section 594 of the Water Resources Development Act (WRDA) of 1999 (Public Law No. 106-53), as amended, which provides authority for the USACE to establish a program to provide environmental assistance to Non-Federal interests in Ohio. This law authorizes design and construction assistance for water related environmental infrastructure projects, including projects for wastewater treatment and related facilities, water supply, water storage, water treatment, water distribution facilities, and surface water resource protection and development.

This draft EA is prepared pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) Regulations (40 CFR 1500-1508), and the USACE implementing regulation, 33 CFR Part 230.

1.2 Location

1.2.1 Project Region and Area

The Village is located in northwestern Logan County, approximately 13 miles northwest of county seat, Bellefontaine, Ohio. The Village is approximately 60 miles northwest of Columbus, Ohio. It is located at the junction of U.S. Highway 33 and State Route 708 on the south shore of Indian Lake. The United States Census Bureau estimates the Village's 2021 population at 1,321 people (US Census Bureau, 2022).

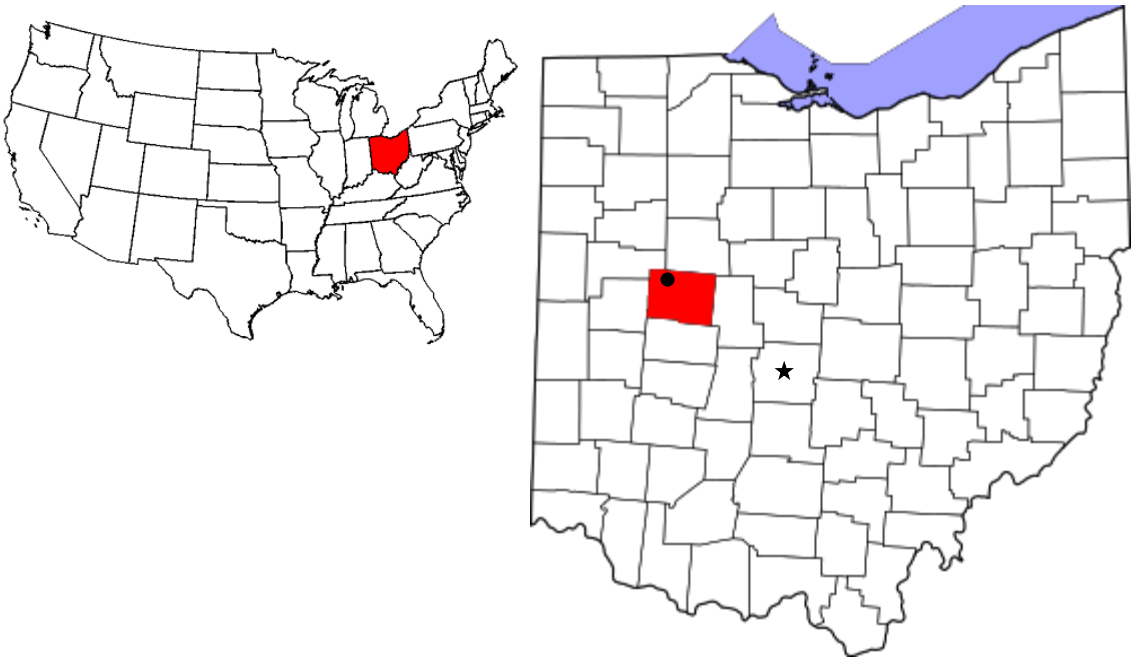


Figure 1. General location map of Logan County, Ohio. The black star indicates the location of Columbus, Ohio. The black dot indicates the location of Russells Point, Ohio.

The project area for the purpose of this draft EA encompasses the area of the Project for which the USACE is providing funding and is depicted in Figure 2. Within this area, the proposed gravity sewer line would be installed at various locations throughout the Village. Maps depicting these areas in greater detail are provided in Appendix A.

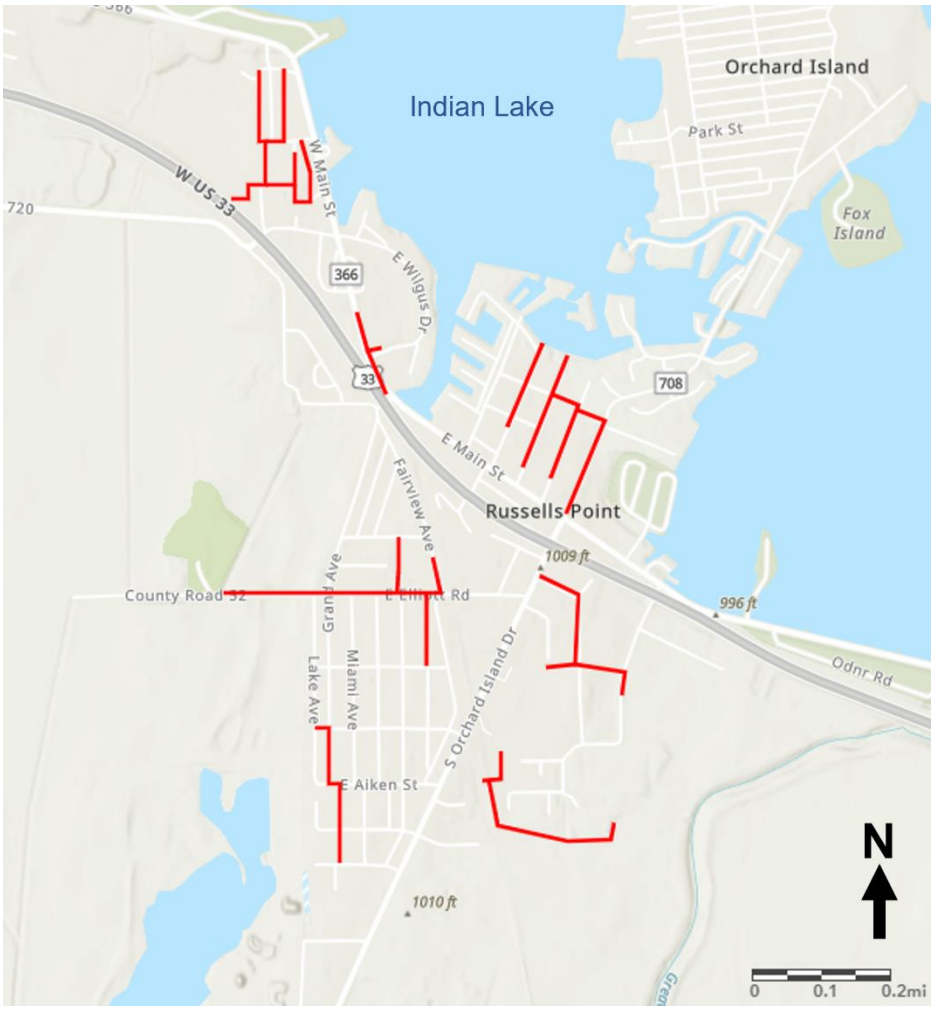


Figure 2. Proposed features of the Storm Sewer Improvements to the Village of Russells Point Project, Logan County, Ohio. Red lines indicate proposed gravity sewer line.

1.2.2 Areas of the Village

The Village was divided into 18 areas in order to assess the current state of its storm sewer collection system and determine which specific locations are most in need of improvement. Figure 3 shows a map of the Village divided into these areas, and individual maps depicting these areas in greater detail can be found in Appendix A.

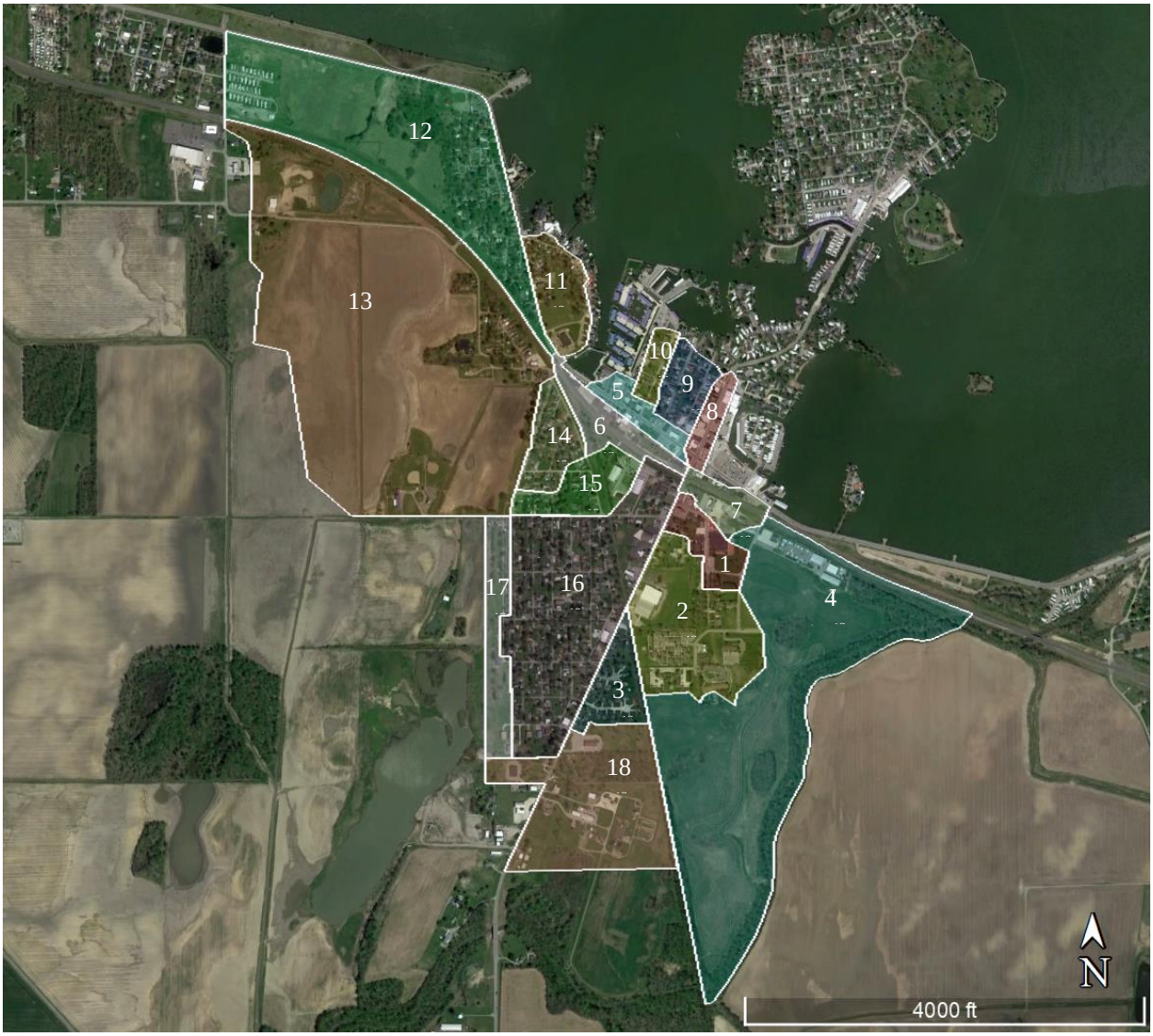


Figure 3. Eighteen designated work areas of the proposed Storm Sewer Improvements to the Village of Russells Point Project, Logan County, Ohio (areas described in Section 1.2.2).

1.2.2.1 Area 1 - Jackson-Garfield Area

This area covers about 8.5 acres and consists mostly of commercial development (Figure 1 of Appendix A). Drainage flow in this area is generally to the south and east. Some of the drainage appears to flow south along Jackson Boulevard into an existing 6-inch storm sewer that flows south across the Municipal Building property.

Existing drainage problems include runoff from the area around the gas station at the corner of State Route 708 and Madison Avenue, which flows east and south along Madison and Garfield Avenues but does not have a sufficient outlet to an open ditch or another body of water. The runoff from Jackson Street contributes to flooding of the Village Hall area.

1.2.2.2 Area 2 - Village Hall Area

The Village Hall area covers 34.7 acres and is mostly commercial, with a large open space area east of the Village Hall (Figure 2 of Appendix A). This area is drained by a 6-inch storm sewer that flows into a catch basin on the west side of a private apartment complex. The open space area frequently floods according to Village personnel, and it is apparent that the 6-inch storm sewer is too small to serve such a large area. The area will typically hold water after rain events of one inch or more. Storm drainage through the private apartment complex is from west to east, but information on the system is incomplete. The storm drainage system on the apartment property is believed to be privately owned and maintained.

1.2.2.3 Area 3 – South-central Area

The South-central Area consists primarily of a residential subdivision along White Oaks and Oakcrest Courts and covers about 10.2 acres (Figure 2 of Appendix A). The drainage from the subdivision flows into its own detention pond, which was designed to have a storage capacity for up to a 4% Annual Exceedance Probability (AEP), alternatively known as a 25-year storm event. However, the outlet structure for the detention pond, a raised catch basin, has apparently been modified by having part of one of its walls knocked out. The effect of this has been to reduce the amount of runoff that can be detained by the pond. The outfall discharges through a pipe under the old railroad bed to the east and eventually flows into the same catch basin on the private apartment complex mentioned in Section 1.2.2.2.

1.2.2.4 Area 4 - Open Space Wetland Area

This area encompasses 84 acres and is located along the eastern edge of the Village in the floodplain of the Great Miami River and is almost completely undeveloped except for some commercial development along U.S. Route 33 (Figure 3 of Appendix A). This area was developed as the Indian Lake/Great Miami River Open Space project and includes 84 acres of wetland areas and other natural features. The area was designed to accommodate some runoff from developed areas to its west. It is estimated that 75% of the area inside Area 4 drains to the wetland. The remaining area drains to the river.

1.2.2.5 Areas 5, 6, and 7 - Highway Areas

These areas collectively encompass 26 acres. There are three distinct areas along the U.S. Route 33/State Route 366 corridor that are served by a well-developed system of storm sewers and swales that were constructed along with these highways by the Ohio Department of Transportation (Figure 4 of Appendix A). Area 5 drains northwesterly into Indian Lake, Area 6 drains westerly into a tributary of a Great Miami River backwater channel (hereafter referred to as “the Slough”), and Area 7 drains into a swale flowing east into the Great Miami River. The storm sewers in these areas appear to be performing adequately.

1.2.2.6 Areas 8 and 9 - North Orchard and Burkhart-Warren Areas

Areas 8 and 9 encompass a total of 15 acres and are located on the north side of State Route 366 and drain into Indian Lake via surface flow (Figure 5 of Appendix A). No significant flooding or ponding issues have been identified in these areas; however, the LCWPCD has determined from flow monitoring efforts that the sanitary sewers in these areas have some of the highest rates of infiltration and inflow in the Village.

Because the lack of adequate storm sewers does not allow for storm water to leave the area effectively, there is an increase in ground water pressure on the existing sanitary sewer system. The increased water pressure causes infiltration into the old sanitary pipes. Downspouts do not have an outlet and dump out on the grounds, also increasing ground water pressure on the sanitary sewer. It should also be noted that the primary outlet for the North Orchard Area is an 8-inch storm sewer that runs east from North Orchard Island under a commercial building and then discharges into Indian Lake. The storm sewers in this area have not been completely field surveyed, but there are existing catch basins along most of the length of North Orchard Island Road and State Route 708.

1.2.2.7 Area 10 - Clermont Area

This area encompasses 5 acres and is also located north of State Route 366 and drains into the lake through an existing 6-inch storm sewer outfall (Figure 5 of Appendix A). This area also suffers from excessive levels of infiltration and inflow into the sanitary sewers but does not experience serious ponding problems. Ponding may occur if runoff was not tied into the sanitary sewer. Thirty homes in the Clermont Area lack adequate storm sewer connection.

1.2.2.8 Area 11 - Wilgus Area

This area encompasses 12.5 acres and is located northeast of State Route 366. The edges of the area along State Route 366 and East Wilgus Drive are the high ground, with an area of lower ground in the middle (Figure 6 of Appendix A). Only the edges of the area immediately adjacent to the lake generate surface flows into the lake. The area is primarily residential with some commercial development along State Route 366, with the central low area largely undeveloped. There are very few existing storm drainage improvements in this area, with most of the runoff flowing overland into the central low area.

1.2.2.9 Area 12 - Upper Slough Area

This area encompasses 77.5 acres and is located north of U.S. Route 33. It contains a residential subdivision and some commercial development along State Route 366 in the areas of higher ground, which flow south and west overland into a large undeveloped area occupying the low ground (Figure 7 of Appendix A. Note that the proposed ditch feature shown in Figure 7 is a feature of Alternatives that have been eliminated from further consideration. See Section 2.2 for

additional details). This low area is in the floodplain of a backwater of the Great Miami River known locally as “the Slough”. The low area floods fairly frequently, and much of it has been identified as a freshwater emergent wetland in the National Wetland Inventory maps produced by the U.S. Fish and Wildlife Service (USFWS). There are almost no storm sewers serving the developed areas. There is one area near the intersection of Lind Street and Westview Drive where some localized ponding problems that occurs from local runoff.

1.2.2.10 Area 13 - Middle Slough Area

This area encompasses 178 acres and is located south of U.S. Route 33 west of Grand Avenue and north of Elliot Road/County Road 52 (Figure 8 of Appendix A). The area is mostly agricultural land in the floodplain of the Slough, with some residential ponding in this area due primarily to backwater flooding from the Great Miami River. Local runoff flows overland into the undeveloped low areas.

1.2.2.11 Area 14 - Fairview Area

This area encompasses 11 acres and is a residential area located west of Fairview Avenue (Figure 9 of Appendix A). Surface runoff flows overland to the west to an 8- to 12-inch storm sewer on Cardinal Avenue, then flows south to a 12-inch storm sewer outfall on Morse Street, which apparently discharges into the lower ground in the Middle Slough Area. There is an existing sanitary sewer located west of Grand Avenue that experiences flooding over its manholes a few times per year, which is due to backwater flooding from the Great Miami River.

1.2.2.12 Area 15 - Elliot-Holly Area

This area encompasses 10 acres and is primarily a residential area with a commercial development east of Fairview Avenue (Figure 9 of Appendix A). Runoff is conveyed by overland flow to the west. Much of this runoff collects in a low area south of Holly Lane, resulting in ponding in backyards. There is an existing 15-inch storm sewer on Grand Avenue that flows south into the Elliot Road storm sewer.

1.2.2.13 Area 16 - Nichols Addition Area

This area encompasses 60 acres and is roughly bounded by Elliot Road, Orchard Island Road/State Route 708, and Grand Avenue (Figure 10 of Appendix A). It includes the largest residential area in the Village, along with some commercial development. There are numerous storm sewers in this area, but the full layout of the existing system is not known. The primary storm sewers include an 18-inch sewer on Marshall Street, an 18-inch sewer on Lake Avenue, and a 24-inch sewer on Elliot Road that discharges into the Slough and appears to serve the entire area. Drainage is generally from east to west and south to north.

There are several locations in the area where localized ponding occurs; however, Village personnel have noted that many of the pipes in this area appear to be plugged, which may be the cause of some of this problem. It also appears that the Marshall Street storm sewer is somewhat undersized for the area it is serving, especially if some of the storm sewers to the south are connected to it. The Elliot Road storm sewer is also undersized to serve the entire Nichols Addition Area. There also appears to be a lack of storm sewers in the southwest corner of the area.

1.2.2.14 Area 17 - Lower Slough Area

This area encompasses 13 acres and lies just west of Lake Avenue and south of Elliot Road (Figure 10 of Appendix A). There is some residential development along the high ground on the eastern edge of this subarea, which is predominantly low-lying agricultural land subject to backwater flooding from the Great Miami River. Some of the lower-lying homes are occasionally flooded by the Great Miami River. Note, however, that riverine flooding is beyond the scope of this study, and thus none of the alternatives discussed in Section 2.0 will address it.

1.2.2.15 Area 18 - WWTP Area

This area encompasses 53 acres and lies south of Oakcrest Court between State Route 708 and the old railroad grade, and generally drains south to the Great Miami River (Figure 11 of Appendix A). It is largely undeveloped but does include the U.S. Post Office facility and the Logan County Sewer District. The Post Office has its own detention pond, and there are storm sewers along State Route 708 that discharge into the Great Mimi River. However, most of the surface drainage is caused by overland flow to the south across the WWTP property.

2.0 Alternatives Analyzed

2.1 Alternatives Carried Forward for Evaluation in the EA

In order to address the storm sewer collection needs of the Village, a variety of alternative actions were evaluated for their efficacy and impact. Two such actions that could reasonably achieve the need of the Project are described in detail below, as well as the No Action Alternative (NAA).

2.1.1 No Action Alternative (NAA)

Under the NAA, the USACE considered the environmental effects that would result if the Project did not take place. Under this scenario, the Village would not improve its storm sewer collection system, and storm water would continue to enter the sanitary sewer system and maintain the increased load on that system.

2.1.2 Alternative 1 – Storm Sewer Improvements Based on 20% AEP (Recommended Action)

This alternative proposes improvements to the Village's storm sewer collection system based on a 20% AEP, alternatively known as a 5-year storm event. This alternative proposes the installation of new gravity storm sewer and replacing parts of the existing storm sewer collection system. Table 1 summarizes the locations, sizes, and approximate quantities of newly installed and replaced storm sewer. The useful life of the proposed storm sewer is extended by utilizing high-density polyethylene (HDPE) and polyvinyl chloride (PVC) pipe. The proposed improvements will be located in previously disturbed areas within existing right of way and easements. Because the service area is in an area of high groundwater, dewatering will be needed during construction. Figures depicting the locations of the individual actions that comprise Alternative 1 can be found in Appendix A.

Table 1. Quantitative summary of Alternative 1 by location. The locations shown may include multiple actions that are grouped together in this table by proximity for convenience and ease of understanding. Thus, these groups do not necessarily constitute individual actions within Alternative 1.

	Areas 1, 2, 3, 4	**Areas 8, 9, 10**	**Areas 6, 11, 13 (east), 14**	**Area 12**	**Areas 13 (south), 15, 16**	**Totals**
12-inch storm sewer (linear feet)	547	2299	104	2275	1629	6854
15-inch storm sewer (linear feet)	652	328	0	223	368	1571
18-inch storm sewer (linear feet)	262	226	666	342	0	1496
21-inch storm sewer (linear feet)	1370	542	0	0	0	1912
24-inch storm sewer (linear feet)	556	0	0	369	1335	2260
27-inch storm sewer (linear feet)	0	0	0	0	791	791
Replace 25% of existing storm sewer (linear feet)	748	447	402	107	1881	3585

2.1.3 Alternative 2 – Storm Sewer Improvements Based on a 4% AEP

This alternative proposes improvements to the Village's storm sewer collection system based on a 4% AEP. This alternative proposes the installation of new gravity storm sewer and replacing parts of the existing storm sewer collection system. This alternative achieves a higher capacity than

Alternative 1 by increasing the diameter of the installed sewer pipes. Table 2 summarizes the locations, sizes, and approximate quantities of newly installed and replaced storm sewer. The useful life of the proposed storm sewer is extended by utilizing HDPE and PVC pipe. The proposed improvements will be located in previously disturbed areas within existing right of way and easements. Because the service area is in an area of high groundwater, dewatering will be needed during construction. The locations of the individual actions that comprise Alternative 2 are the same as they are in Alternative 1 and are thus also depicted in Appendix A. The diameters of the sewer pipes proposed for installation depicted in Appendix A correspond to Alternative 1, though Table 3 shows the relationship of sewer pipe diameters between Alternatives 1 and 2.

Table 2. Quantitative summary of Alternative 2 by location. The locations shown may include multiple actions that are grouped together in this table by proximity for convenience and ease of understanding. Thus, these groups do not necessarily constitute individual actions within Alternative 2.

	Areas 1, 2, 3, 4	**Areas 8, 9, 10**	**Areas 6, 11, 13 (east), 14**	**Area 12**	**Areas 13 (south), 15, 16**	**Totals**
15-inch storm sewer (linear feet)	547	2299	104	2275	1629	6854
18-inch storm sewer (linear feet)	652	328	0	223	368	1571
24-inch storm sewer (linear feet)	262	226	666	342	0	1496
27-inch storm sewer (linear feet)	1370	542	0	0	0	1912
30-inch storm sewer (linear feet)	556	0	0	369	1335	2260
36-inch storm sewer (linear feet)	0	0	0	0	791	791
Replace 25% of existing storm sewer (linear feet)	748	447	402	107	1881	3585

Table 3. Quantitative summary and comparison of alternatives.

	No Action Alternative	Alternative 1 – Recommended Action	Alternative 2
12-inch storm sewer (linear feet)	0	6854	0
15-inch storm sewer (linear feet)	0	1571	6854
18-inch storm sewer (linear feet)	0	1496	1571
21-inch storm sewer (linear feet)	0	1912	0
24-inch storm sewer (linear feet)	0	2260	1496
27-inch storm sewer (linear feet)	0	791	1912
30-inch storm sewer (linear feet)	0	0	2260
36-inch storm sewer (linear feet)	0	0	791
Replace 25% of existing storm sewer (linear feet)	0	3585	3585

2.2 Alternatives Eliminated from Further Consideration

2.2.1 Storm Sewer Improvements Based on a 20% AEP and Regrading a Ditch along U.S. Highway 33

This alternative is nearly identical to Alternative 1 and proposed to install gravity sewer lines of the same size and in the same locations. However, this alternative also includes regrading approximately 800 feet of a ditch that runs along the north side of U.S. Highway 33 between the new gravity sewer line in Area 12 and a culvert that runs underneath U.S. Highway 33. The regrading was intended to better convey the flow of stormwater from new gravity sewer lines in Area 12. However, further analysis of the site determined that, because the currently existing ditch slope is nearly flat, further regrading may actually promote ponding in Area 12 rather than alleviating it. In addition, regrading this ditch would assuredly impact the adjacent wetland, causing unnecessary environmental disturbance. This alternative would fail to meet the Project's purpose and need to improve the Village's storm sewer system.

2.2.2 Storm Sewer Improvements Based on a 4% AEP and Regrading a Ditch along U.S. Highway 33

This alternative is nearly identical to Alternative 2 and proposes the installation of gravity sewer lines of the same size and in the same locations. However, this alternative also includes regrading

approximately 800 feet of a ditch that runs along the north side of U.S. Highway 33 between the new gravity sewer line in Area 12 and a culvert that runs underneath U.S. Highway 33. The regrading was intended to better convey the flow of stormwater from new gravity sewer lines in Area 12. However, further analysis of the site determined that, because the currently existing ditch slope is nearly flat, further regrading may actually promote ponding in Area 12 rather than alleviating it. In addition, regrading this ditch would assuredly impact the adjacent wetland, causing unnecessary environmental disturbance. This alternative would fail to meet the Project's purpose and need to improve the Village's storm sewer system.

3.0 Affected Environment & Environmental Consequences

The National Environmental Policy Act and the Council on Environmental Quality's NEPA Implementing Regulations require that an EA identify the likely environmental effects of a proposed project and that the agency determine whether those impacts may be significant. Effects (or impacts) are changes to the human environment from the Proposed Action or alternatives that are reasonably foreseeable and include direct effect, indirect effects, and/or cumulative effects, as defined by 40 C.F.R. § 1508.1(g). Effects may include ecological, aesthetic, historic, cultural, economic, social, or health effects, and can be either beneficial or adverse.

In considering whether the effects of the proposed action are significant, agencies shall analyze the potentially affected environment and degree of the effects of the action. (40 C.F.R. § 1501.3(b)). In considering the potentially affected environment, agencies should consider the affected area and its resources, understanding that significance varies with the setting of the proposed action. Agencies should consider connected actions including actions that automatically trigger other actions, that cannot or will not proceed unless other actions are taken previously or simultaneously, or are independent parts of a larger action and depend on the larger action for their justification. (40 C.F.R. § 1501.9(e)). In considering the degree of the effects of the action, agencies should consider both short-term and long-term effects, both beneficial and adverse effects, effects on public health and safety, and effects that would violate laws protecting the environment. The term "degree" is not defined in the governing regulations, but generally refers to the magnitude of change that would result from the alternatives evaluated herein.

All potentially relevant resource areas were initially considered for analysis in this EA. Some resource topics are not discussed, or the discussion is limited in scope, due to the lack of anticipated effect from the alternatives on the resource or because that resource is not located within the affected environment.

This section presents the adverse and beneficial environmental effects of the action alternatives and the NAA. The section is organized by resource topic, with the effects of alternatives discussed under each resource topic. Impacts are quantified whenever possible. Qualitative descriptions of impacts are explained by accompanying text where used.

Qualitative definitions/descriptions of impacts as used in this section of the EA include:

Degree:

- No Effect, or Negligible – a resource would not be affected, or the effects would be at or below the level of detection, and changes would not be of any measurable or perceptible consequence.

- Minor – effects on a resource would be detectable, although the effects would be localized, small, and of little consequence to the sustainability of the resource. Mitigation measures, if needed to offset adverse effects, would be simple and achievable.

- Moderate – effects on a resource would be readily detectable, localized, and measurable. Mitigation measures, if needed to offset adverse effects, would be extensive and likely achievable.

- Significant – effects on a resource would be obvious and would have substantial consequences. The resource would be severely impaired so that it is no longer functional in the project area. Mitigation measures to offset the adverse effects would be extensive, and success of the mitigation measures would not be guaranteed.

Duration:

- Short term – temporary effects caused by the construction and/or implementation of a selected alternative.

- Long term – effects caused by an alternative that remain after the action has been completed and/or after it is in full and complete operation.

3.1 Climate

3.1.1 Existing Condition

Given its position in the North American interior away from the coasts, Ohio experiences a wide range of temperatures (Frankson et al., 2017). Summers in Ohio are generally warm and humid, while winters can be quite cold. A contributing factor to this condition is the lack of large mountain barriers to the north and the south, which allows for incursions of very cold air masses from the arctic during winter months and incursions of warm, humid air masses from the Gulf of Mexico in the summer. The mean annual temperature in the area around Russells Point, Ohio is approximately 50 degrees Fahrenheit. The monthly means vary from 25.2 degrees Fahrenheit in January to 73 degrees Fahrenheit in July. Precipitation in the project area is fairly evenly distributed throughout the year, with greater amounts generally occurring in spring and summer. The average annual precipitation is approximately 40 inches. Figure 4 depicts monthly averages for temperature and precipitation using data from the closest National Oceanic and Atmospheric Administration (NOAA) weather station (Network:ID GHCND:USC00330563) to the project area in Bellefontaine, Ohio (NOAA, 2021).

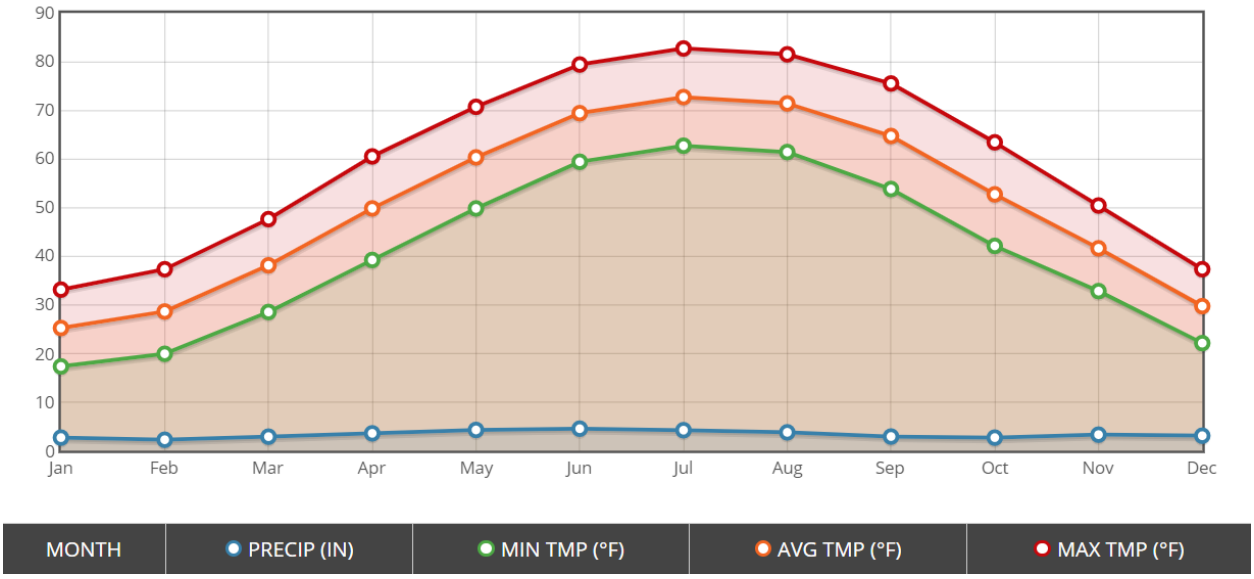


Figure 4. Monthly temperature and precipitation averages for Bellefontaine, Ohio from 1981 to 2010.

Historically unprecedented warming is projected during the 21st century (Frankson et al., 2017). Figure 5 depicts the observed and projected changes in near-surface air temperatures for Ohio, including one projection assuming that greenhouse gas emissions will continue to rise ("Higher Emissions") and another projection assuming that greenhouse gas emissions will increase at a slower rate ("Lower Emissions"). Both projections indicate that Ohio will experience higher average temperatures as the 21st century progresses, though this increase is expected to be greater with higher greenhouse gas emissions.

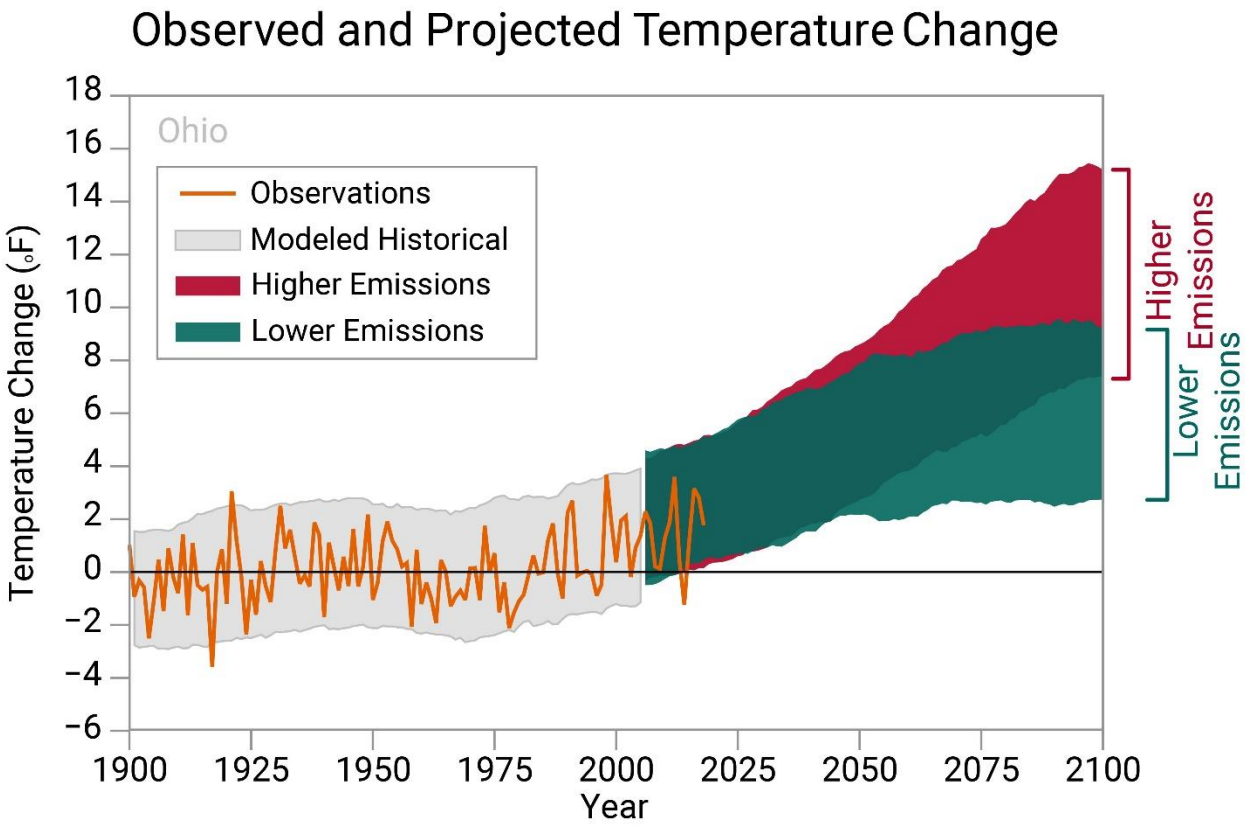


Figure 5. Observed and projected temperatures of Ohio throughout the 20th and 21st centuries. Temperature projections include a higher emissions scenario (red) and a lower emissions scenario (green). Figure adapted from Frankson et al., 2017.

According to Frankson et al. (2017), the northern and central United States are projected to experience an increase in overall precipitation during the winter and spring months (see Figure 6). Changes to precipitation during the summer and fall months are at this point uncertain. Heavy precipitation events are projected to increase in number and intensity in Ohio. However, the projected increase in temperature is anticipated to combine with naturally occurring periods of below average rainfall to increase evaporation and therefore also increase the intensity of future droughts. As a consequence, Ohio may experience both floods and droughts of greater intensity in the future (Frankson et al., 2017).

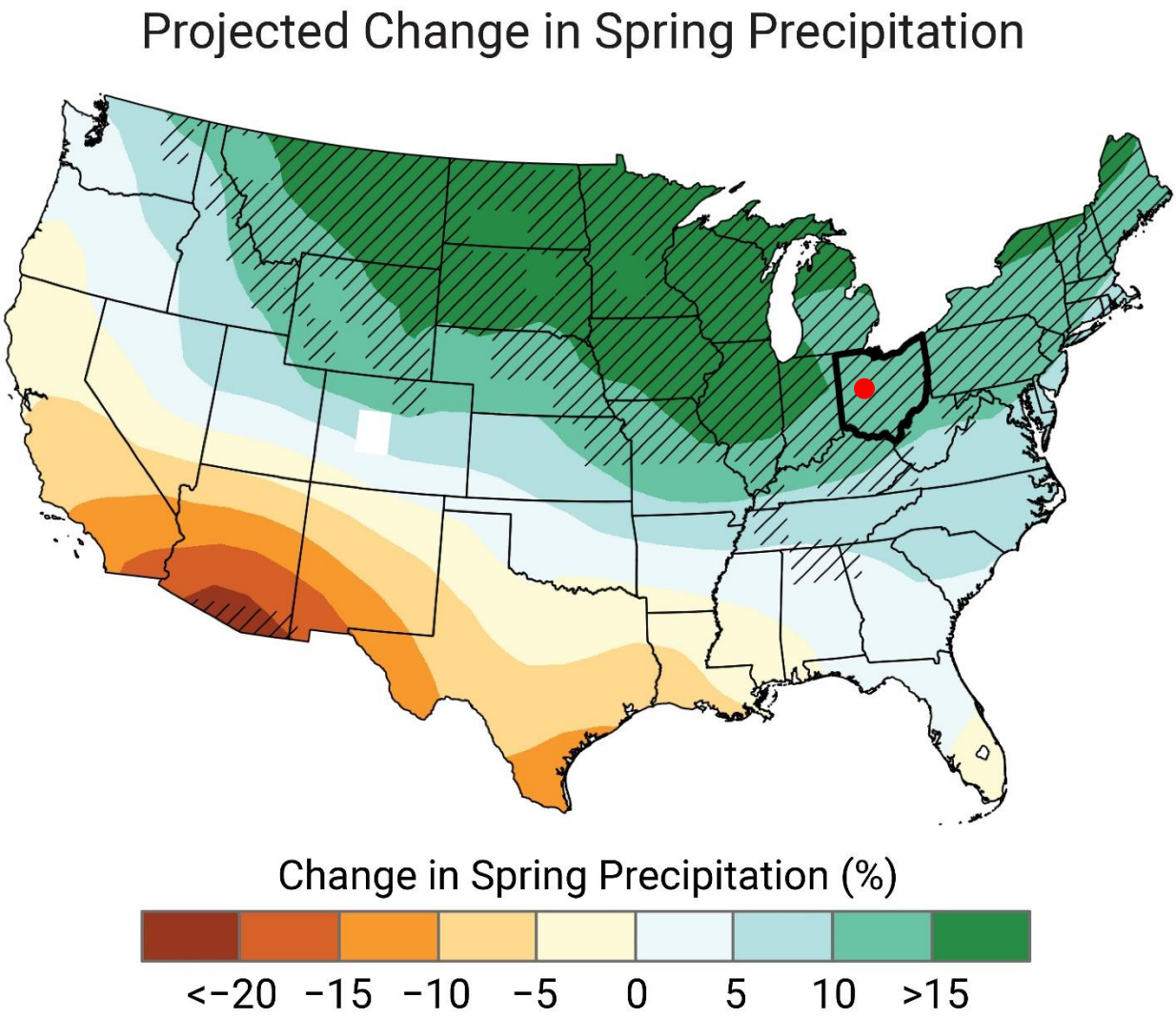


Figure 6. Projected changes (as percentage) in spring precipitation by the mid-21st century relative to the late 20th century under a future with higher emissions. Hatching indicates areas where the majority of climate models indicate a statistically significant change. The approximate location of Russells Point, Ohio is represented by the red dot. Figure adapted from Frankson et al., 2017.

In 2015, USACE published the Climate Change and Hydrology Literature Synthesis for the U.S. Army Corps of Engineers Missions in the United States – Ohio Region (USACE, 2015). This is part of a series of 21 regional climate syntheses prepared by USACE under the leadership of the Institute for Water Resources (IWR) Global and Climate Change team at the scale of two (2)-digit I.S. Geological Survey (USGS) Hydrologic Unite Codes (HUC) across the continental United States, Alaska, Hawaii, and Puerto Rico. The trends and literary consensus of observed and projected primary variables noted in the Ohio Region are summarized for reference and comparison in Figure 7. A map showing the extent of the Ohio Region HUC is located in Appendix B.

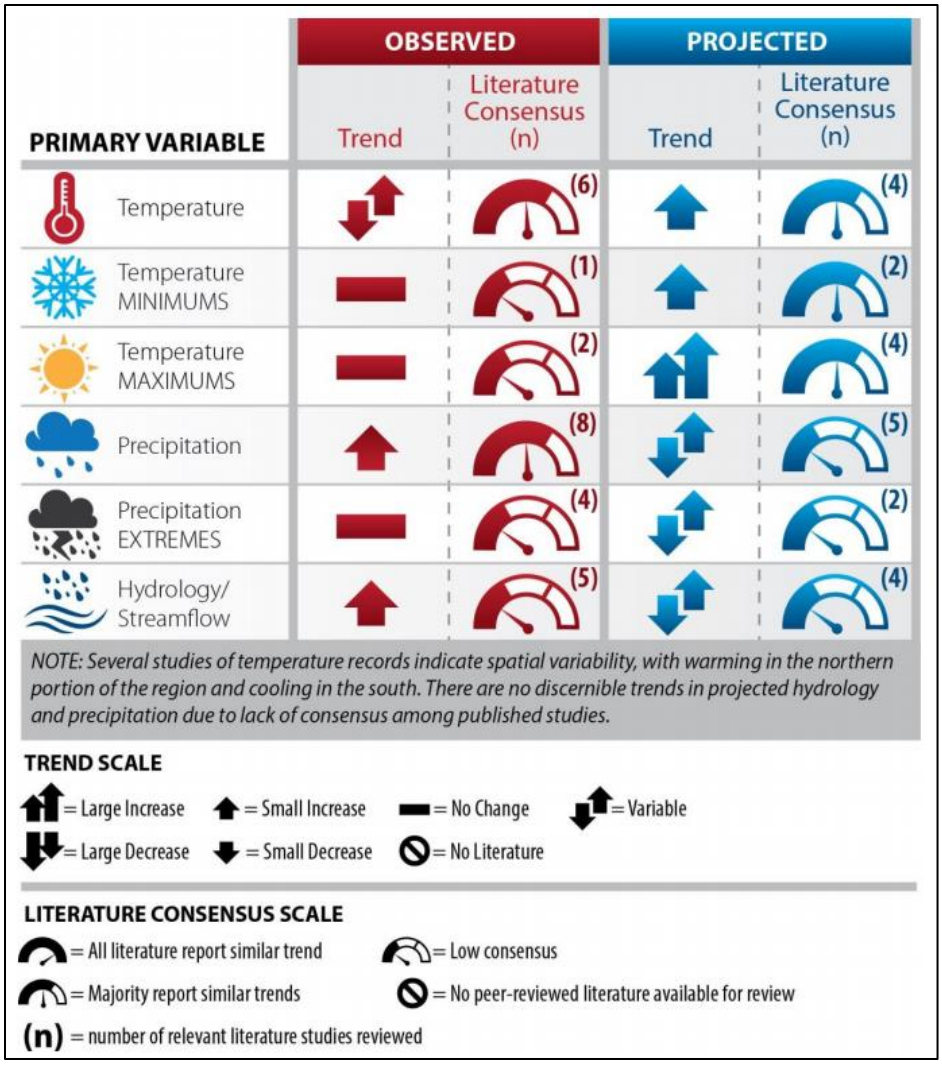


Figure 7. Summary matrix of observed and projected climate trends and literary consensus (USACE, 2015).

The USACE Climate Hydrology Assessment Tool was used to identify historic trends in instantaneous peak flows at the gages closest to the project area as a proxy for understanding how flows in the watershed have changes over the period of record. The hydrologic time series of annual peak instantaneous streamflow at the gage on Bokengehalas Creek at De Graff, Ohio (3260706) is shown in Figure 8.

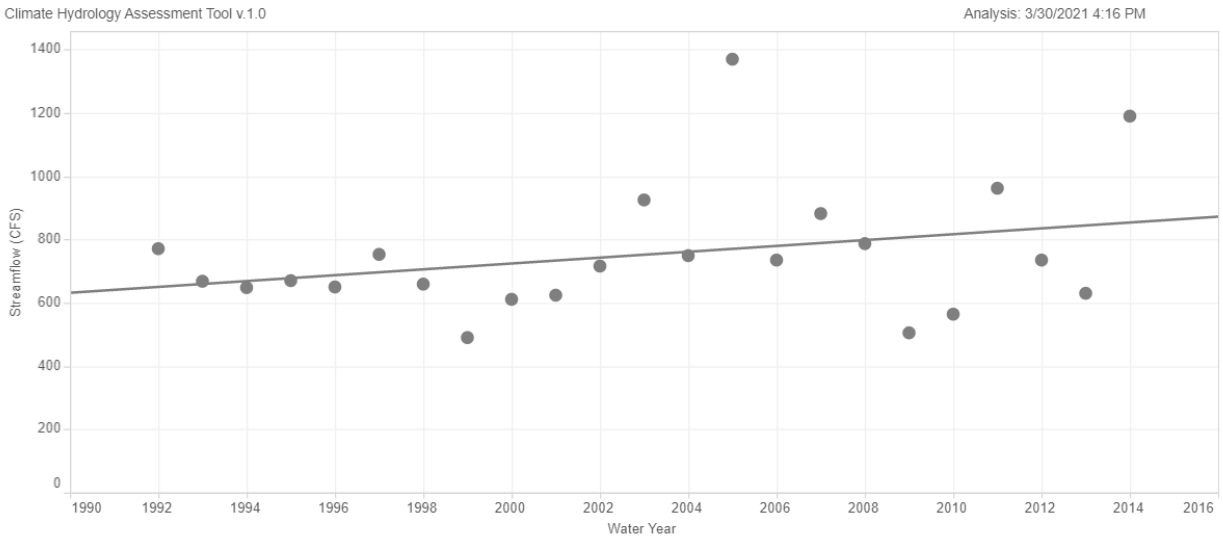


Figure 8. Annual peak instantaneous streamflow, Bokengehalas Creek at De Graff, Ohio. Trend line equation: Q = 9.25198*(Water Year) - 17779.8, p = 0.156266.

This gage was chosen for assessment because it is the nearest gage to the project area with continuous data for at least 20 years. The gage exhibits a slight increasing trend in annual peak instantaneous streamflow that is statistically insignificant (p = 0.156266). This indicates that there is no overall change in flood risk, as measured by the annual maximum flood, over the 22-year period of record (1992-2014). A p-value of 0.05 of less is typically adopted as the threshold of significance to determine whether a trend is present. Using projected hydrology introduces inherent uncertainties. Many variables contribute to the error in temporal downscaling, error in spatial downscaling, errors in hydrologic models, errors associated with emission scenarios and errors associated with global climate models.

The Nonstationarity Detection Tool was used to examine the hydrologic time series at the gage on the Great Miami River at Sidney, Ohio (3261500), as this was the closest gage to the project area that was available for this analysis. No changes to the default sensitivity parameters of the tool were applied to the analysis. The analysis identified two potential statistically significant changes in hydrology in the area near the gage (see Figure 9). Statistically changes in variance and distribution were detected between 1933 to 1934, suggesting that annual peak streamflow became more consistent from 1934 onward. A statistically significant change in distribution was also detected in 1960. However, this was the result of a single statistical test and was not otherwise replicated, suggesting that this nonstationarity may be a false positive.

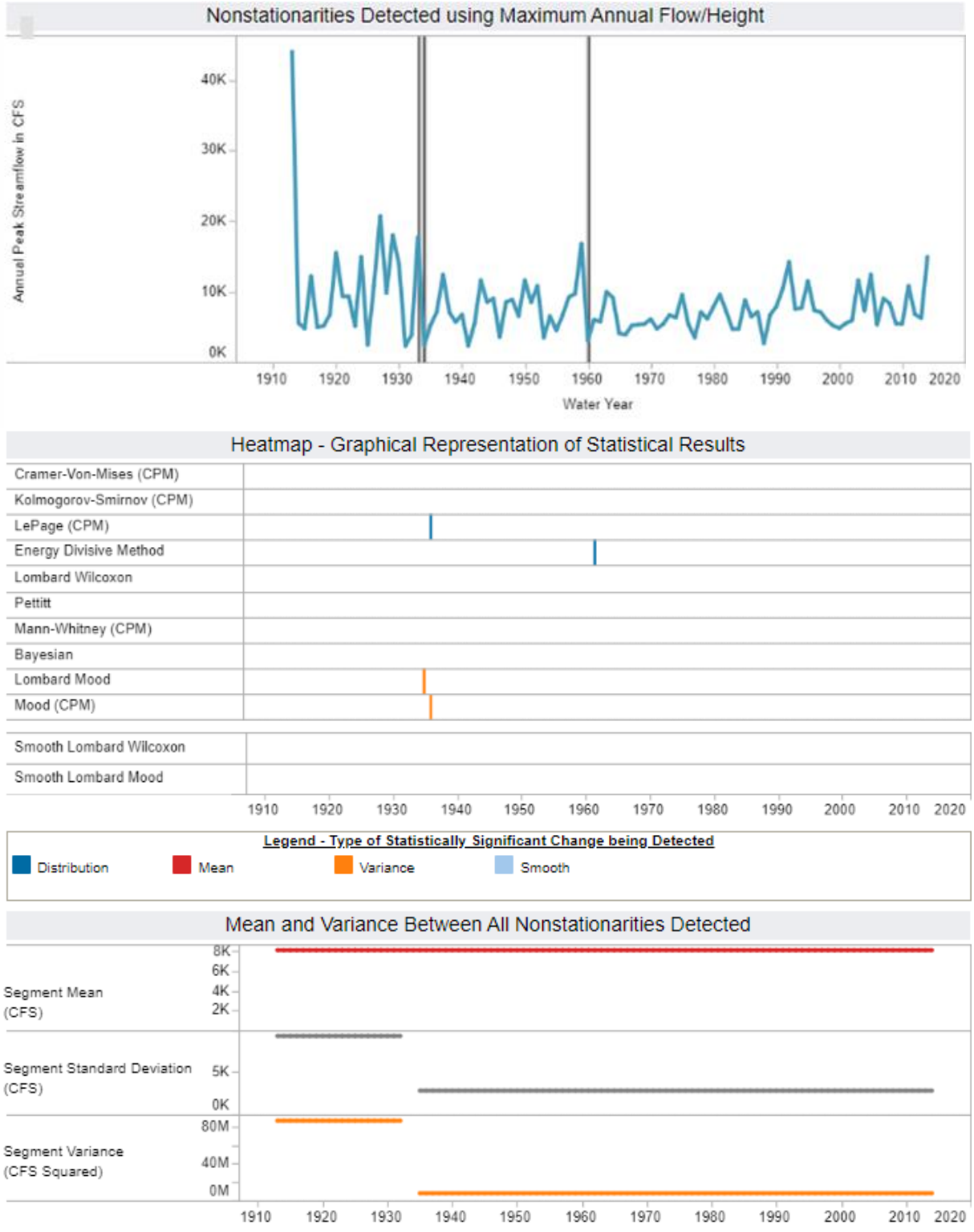


Figure 9. Nonstationarity analysis of maximum annual flow, Great Miami River at Sidney, OH. Figure adapted from the USACE Nonstationarity Detection Tool (USACE, 2021b).

Over the period of record, the same gage shows a statistically insignificant decrease in annual peak instantaneous streamflow (p = 0.0507085). The results of the nonstationarity detection analysis indicate that, overall, there has been no significant change in flood risk, as measured by the annual maximum flood, since 1913.

The USACE Climate Hydrology Assessment Tool was also used to investigate potential future changes to flood flows in the region, using observed and projected data from the Great Miami River Basin (HUC 0508). Figure 10 displays the range of forecasts for annual peak instantaneous monthly streams computed using 93 different hydrologic climate models for a period of 1950-2099 for the watershed. These forecast flows display a trend consistent with that of observed data as well as available literature.

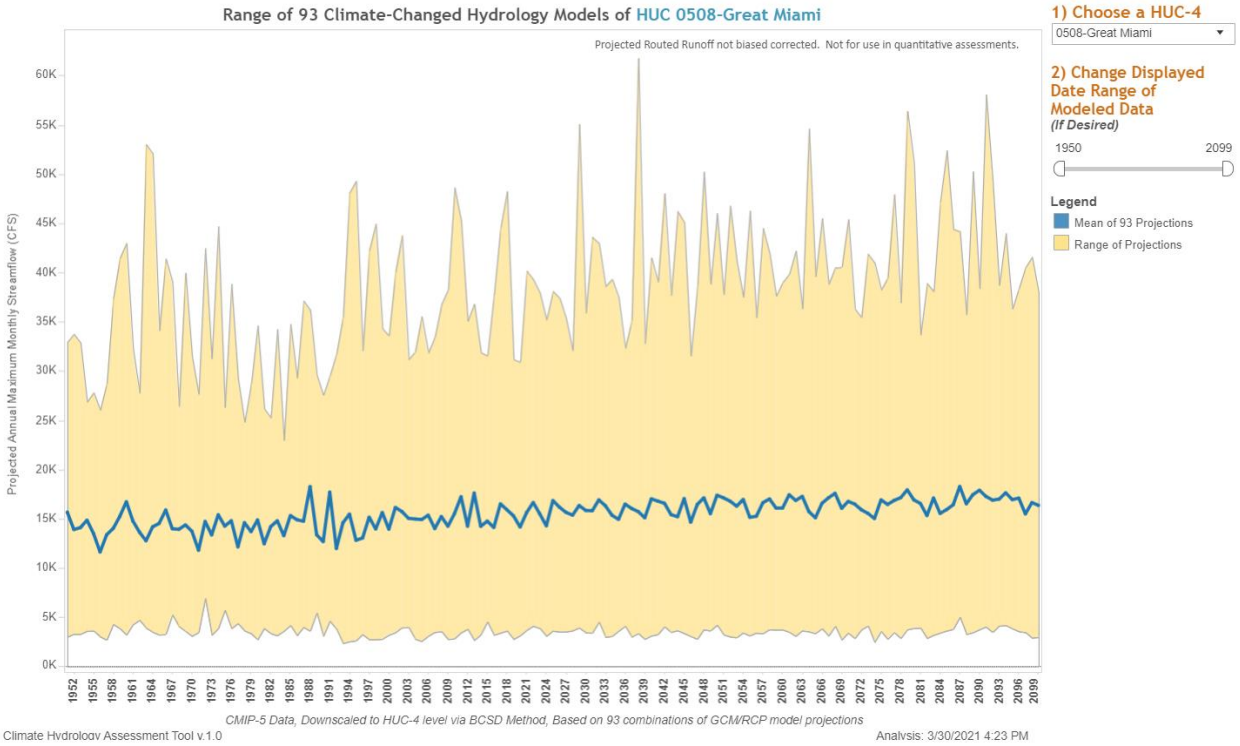


Figure 10. Range of projected annual maximum monthly streamflow among an ensemble of 93 climate-change hydrology models, HUC 0508 Great Miami River. Figure adapted from USACE Climate Hydrology Assessment Tool (USACE, 2021a).

Looking closer at the trend of mean projected annual maximum monthly stream flows, statistically significant, positive trend is observed for the Great Miami River watershed (Figure 11). This increase is statistically significant (p-value < 0.0001), which suggests that there may be potential for flood risk to increase in the future in the study area relative to the current time. This result is qualitative only.

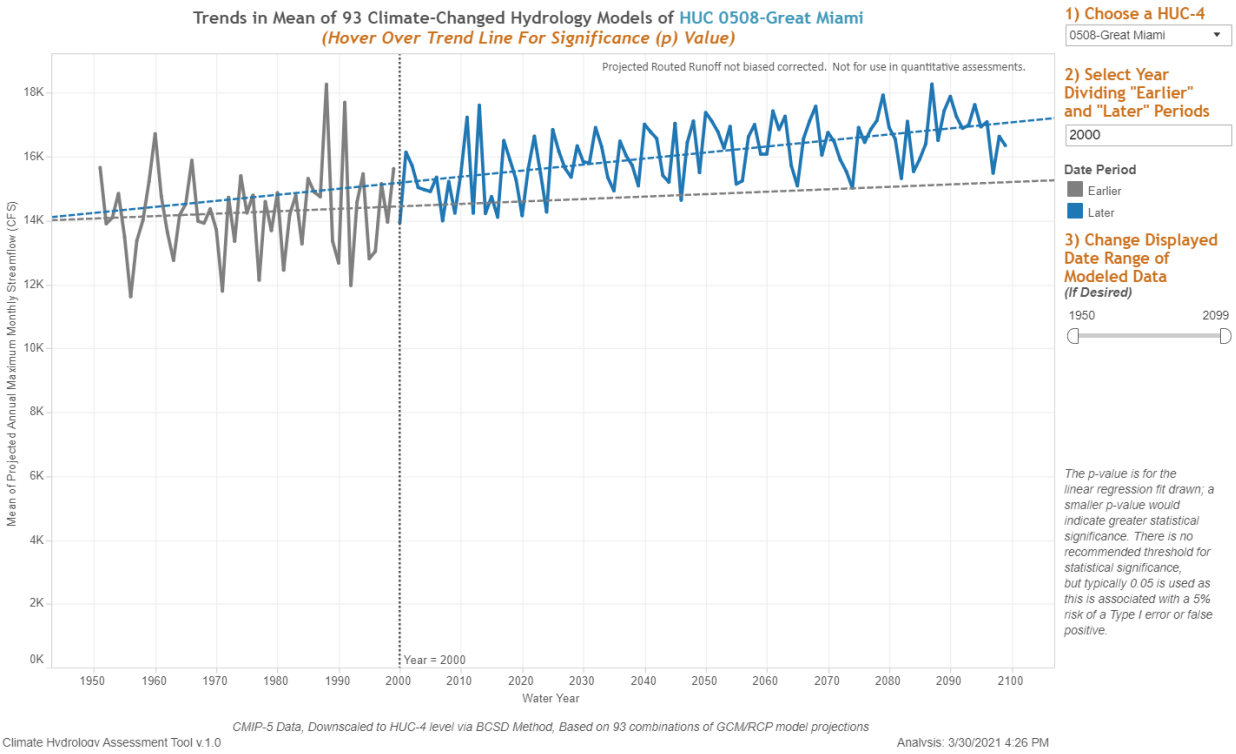


Figure 11. Mean projected annual maximum monthly streamflow. HUC 0508 Great Miami River. Trend line equation: Q = 18.9002*(Water Year) - 22617, $p < 0.0001$. Figure adapted from USACE Climate Hydrology Assessment Tool (USACE, 2021a).

Climate vulnerability assessments are necessary to help guide adaptation planning and implementation so that USACE can successfully perform its missions in an increasingly dynamic physical, socioeconomic, and political environment. The USACE Climate Change Vulnerability Assessment (VA) Tool (USACE, 2016) was used to examine the vulnerability of the Great Miami River basin (HUC 0508) to fulfill their primary mission objectives given a changing climate. The VA tool analyzes the climate vulnerability for two climate scenarios (wet and dry) over two epochs (2050 and 2085). The wet scenario is defined by the wetter 50 percent of General Circulation Models (GCMs), and the dry scenario is defined by the drier 50 percent of GCMs. The VA tool was used to determine vulnerability through the following steps:

1. Standardize climate change indicators – indicators are processes that contribute to climate change vulnerability.
2. Calculate vulnerability using a weighted order weighted average (WOWA).
3. Second weighting based on vulnerable indicators (ORness). An ORness level of 0.7 was used in this analysis.
4. Adjustment of vulnerability thresholds (20% in this analysis) and integrated analysis type (four thresholds computed: dry 2050, dry 2085, wet 2050, and wet 2085).

The VA tool did not identify the flood risk reduction business line as within the top 20 percent of vulnerable watersheds. While the Great Miami River basin was not identified as within the top

20 percent of vulnerable watersheds, that does not imply that vulnerability to climate change does not exist within the watershed.

Of the vulnerability indicators examined by the VA tool, there was one that reliably drives the vulnerability of the water supply business line: cumulative flood magnification factor (568C). As indicated by Figure 12, this was the dominant indicator in the watershed for both climate scenarios over both epochs. The next two dominant indicators for the basin were high elasticity between increasing precipitation and streamflow (277) and the local flood magnification factor monthly coefficient of variation of runoff (568L). Taken together, these findings indicate that this watershed will likely experience flood events of greater intensity and frequency in the future. Factsheets that detail how each of these indicators are calculated are located in the appendix.

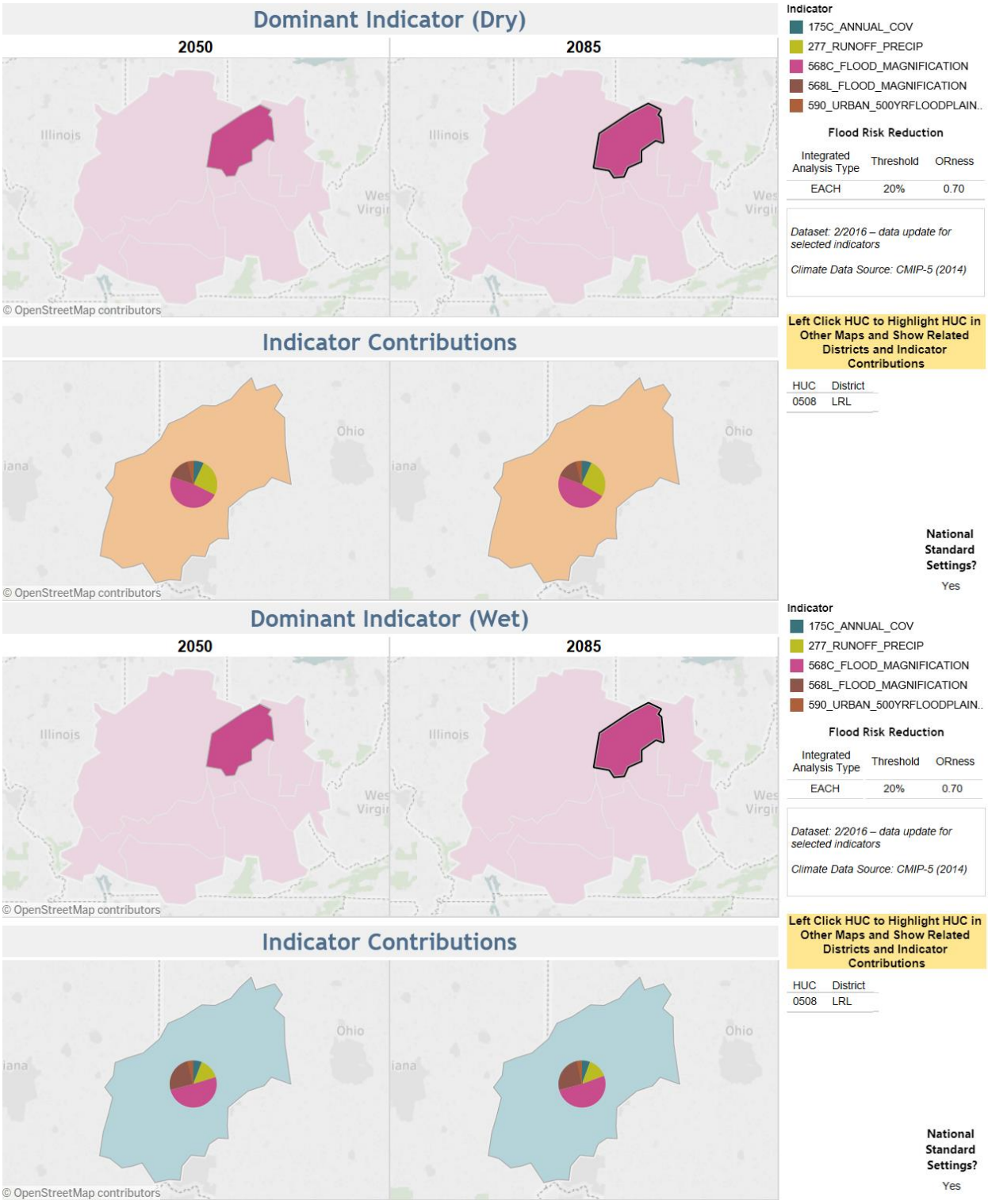


Figure 12. USACE Vulnerability Assessment Tool results for the Great Miami River watershed.

All HUC-4 watersheds within the United States were assigned values for vulnerability to the flood risk reduction business line that ranged from 35.15 (not vulnerable) to 70.08 (most vulnerable). The VA Tool indicated the Great Miami River watershed had a value of 48.41.

3.1.2 Environmental Consequences

3.1.2.1 No Action

Implementation of the No Action Alternative would result in no increase in emissions that could exacerbate climate-related impacts in the future. Thus, this alternative would have no effect on climate. However, flood events in the area of the Village are anticipated to occur with greater intensity and frequency in the future. The infiltration of stormwater into the sanitary sewer system would very likely increase without the enhanced stormwater conveyance achieved in Alternatives 1 and 2. Thus, while the implementation of the No Action Alternative would not be expected to exacerbate climate related-impacts, it would leave the Village less able to handle climate-related changes that are anticipated to occur regardless of which alternative is implemented.

3.1.2.2 Alternative 1 – Recommended Action

Adverse impacts to climate under Alternative 1 would be negligible and short-term. Because this alternative uses a gravity storm sewer, there would be no long-term increase in electricity usage that would require increased energy plant activity and greenhouse gas emissions. All emissions associated with this alternative would occur during construction from the use of vehicles and other equipment. The relatively small scale of the Project under this alternative would limit greenhouse gas emissions to negligible amounts. The increased stormwater conveyance achieved under this alternative would provide the Village with a greater capability of managing the more frequent and intense flood events that are anticipated in the future, though perhaps less so than Alternative 2.

3.1.2.3 Alternative 2

While adverse impacts to climate under Alternative 2 would likely be greater than Alternative 1, these impacts would still be negligible and short-term. Like Alternative 1, the gravity storm sewer installed would not require electricity to operate. Greenhouse gas emissions would again occur entirely during construction, though the larger pipes would require more time for excavation and installation and would thus result in prolonged usage of construction vehicles and equipment. However, given the small scale of the Project even under Alternative 2, this increase in greenhouse gas emissions would not be expected to raise above the level of negligibility. The increased stormwater conveyance achieved under this alternative would provide the Village with a greater capability of managing the more frequent and intense flood events that are anticipated in the future, likely more so than Alternative 1.

3.2 Soils and Geology

3.2.1 Existing Conditions

3.2.1.1 Geology and Physiography

The project area lies within the Eastern Corn Belt Plains physiographic region, which is characterized by rolling till plains with local end moraines. Glacial deposits of Wisconsinan age are extensive here. The bedrock within the project area was formed during the Silurian period, approximately 419-444 million years ago, and can be divided into three formations as depicted in Figure 13. The northernmost formation within the project area is Lockport Dolomite, which is characterized by white to gray, porous dolomite. These rocks formed in association with a shallow tropical sea that was rich in marine plants and animals (Schumacher et al., 2013). South of this formation is Greenfield Dolomite, which is characterized by microcrystalline to coarsely crystalline dolomite with occasional organic-rich laminae. Further south is the Tymochtee Dolomite formation, which is characterized by interbedded, microcrystalline to coarsely crystalline dolomite and shale laminations and beds. Both Greenfield Dolomite and Tymochtee Dolomite were formed in association in nearshore ocean environments, particularly quiet-water lagoons as well as shoreline, shallow-offshore, and reef environments (Schumacher et al., 2013).

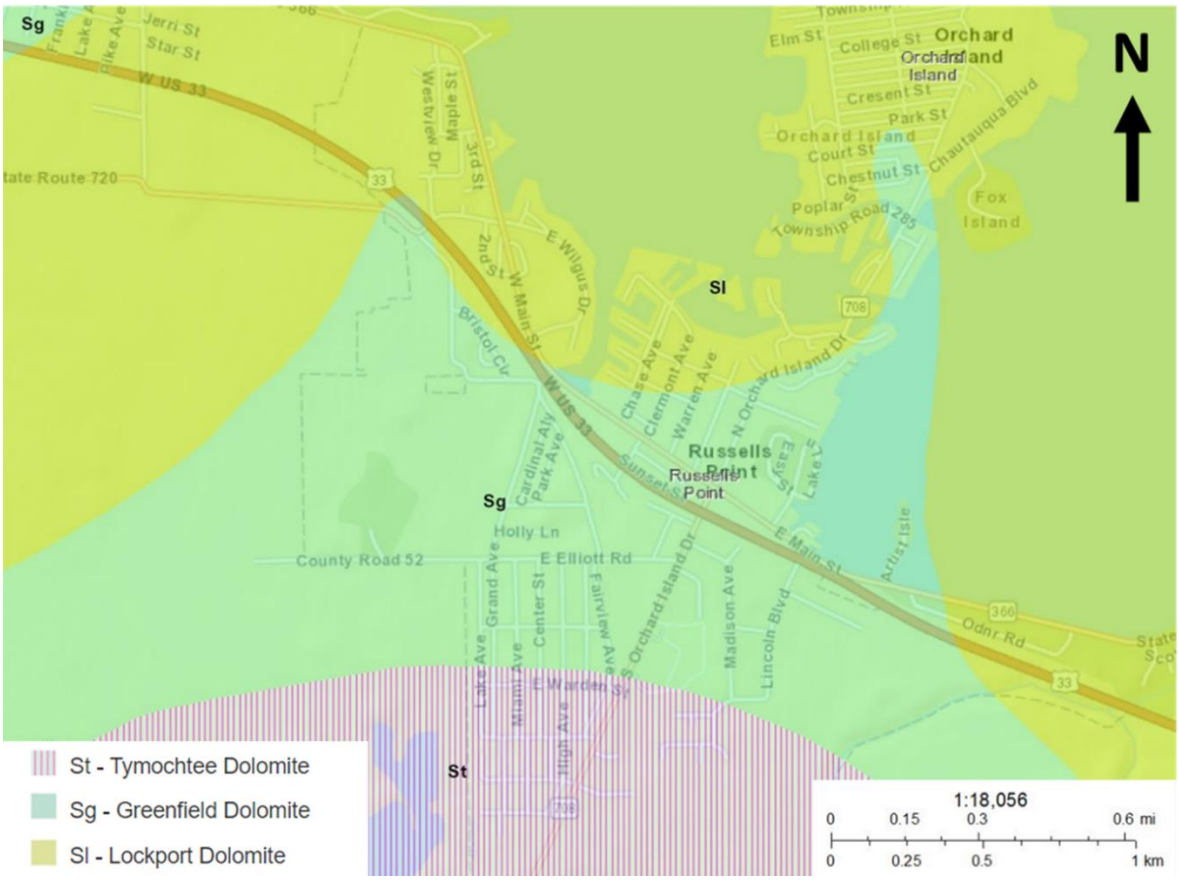


Figure 13. Geology of Russells Point, OH. Figure adapted from ODNR 2021b.

3.2.1.2 Soil Associations

The U.S. Department of Agriculture (USDA) Natural Resource Conservation Service's (NRCS) Web Soil Survey website was queried to determine which types of soils exist within the project area. Table 4 describes the most predominant soil associations within the project area. The complete list of soil associations, as well as the NRCS's soil map, are provided in Appendix C. In general, the soils of the project area are very deep and have little to no slope, and poorly drained soils are common. The soils have noteworthy agricultural value: approximately 6% of the project area's soils are considered prime farmland, approximately 79% are considered prime farmland if drained, and approximately 14% are considered farmland of local importance. Note, however, that the majority of the project area is already developed.

Table 4. Major soil associations within the project area in order of predominance.

Soil Series	Typical Slope	Hydric	Description
Fulton	0-6%	No	Very deep, somewhat poorly drained soils on lake plains. Formed in clayey glaciolacustrine sediments.
Nappanee	0-6%	No	Very deep, somewhat poorly drained soils that are moderately deep or deep to dense till. Formed in clayey till on wave-worked till plains, till-floored lake plains, till plains, and moraines.
Latty	0-2%	Yes	Very deep, very poorly drained soils formed in clayey glaciolacustrine sediments. Found on lake plains.
Minster	0-1%	Yes	Very deep, poorly drained or very poorly drained soils formed in clayey lacustrine deposits. Found on lake plains and in depressions on till plains.
Wallkill	0-3%	Yes	Very deep, very poorly drained soils formed in alluvium overlying organic soil material. Found on flood plains or around margins of organic soils adjacent to uplands.

Source: USDA NRCS, 2021

3.2.1.3 Hydric Soils

Hydric soils are defined as "soils that form under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA NRCS, 2021). According to the NRCS's Web Soil Survey website, approximately 46% of the project area contains hydric soils (see Appendix C). Hydric soils within the project area are mostly located in the southeast and northwest areas. In the southeast, an area hydrologically driven by the Great Miami River, hydric soils are mostly found in Area 4, though such soils also extend into Areas 2 and 18. The major hydrologic feature of the northwestern project area is the presence of the Slough which inundates this location with backwater from the Great Miami River. The majority of northwest's hydric soils are located in Areas 12 and 13, though hydric soils also extend into Areas 14, 15, 16, and 17, respectively.

3.2.2 Environmental Consequences

3.2.2.1 No Action

No ground-disturbing activities would be undertaken under the No Action Alternative. However, the ongoing subsidence of soil into old, cracked storm sewer pipeline would be expected to continue. Minor, long-term impacts to soils would be anticipated under this alternative. However, due to the small scale and effect of this issue, no effects to geology or physiography would be anticipated.

3.2.2.2 Alternative 1 – Recommended Action

Implementation of Alternative 1 would result in no effect to geology or physiography. The installation and replacement of sewer line would not occur deep enough to impact bedrock, and the Project would not alter the area's physiography. Impacts to soils under this alternative would be minor and short-term. Best management practices would be implemented to mitigate erosion and other potential adverse effects. Given that new sewer line would be installed in already-developed locations, there would be no irreparable conversion of prime farmland under this alternative.

3.2.2.3 Alternative 2

Implementation of Alternative 2 would result in no effect to geology or physiography. Like Alternative 1, the installation and replacement of sewer line would not occur deep enough to impact bedrock, and the Project would not alter the area's physiography. While the potential for adverse soil impacts is greater under Alternative 2 due to the need to excavate wide trenches, these impacts would still be minor and short-term. Best management practices would be implemented to mitigate erosion and other potential adverse effects. Given that new sewer line would be installed in already-developed locations, there would be no irreparable conversion of prime farmland under this alternative.

3.3 Surface Water and Other Aquatic Resources

3.3.1 Existing Conditions

3.3.1.1 Surface Water

Surface water within the project area is largely absent. However, two major surface water features are adjacent to the project area: Indian Lake to the north and the Great Miami River to the east and south. The Indian Lake area originally exhibited a number of shallow, marshy, natural lakes and wetlands spread out over 640 acres. These lakes were the product of masses of ice that had broken off of receding glaciers and then melted into water-filled depressions. In 1851, Indian Lake was built to act as a feeder lake for the Miami and Erie Canal to maintain the required 4-foot water depth (ODNR, 2021a). By 1893, Indian Lake (known as Lewiston Reservoir at that time) spanned 6,334 acres (ODNR, 2021a). The modern Indian Lake covers approximately 5,100 acres.

The Great Miami River is an approximately 165-mile-long tributary of the Ohio River (Ohio State University, 2017). The Great Miami River drains an area of about 3,800 square miles and runs through ten counties within Ohio. Recent assessments of water quality in the Great Miami River near the project area have found the river impaired for aquatic-life use resulting from habitat alteration, siltation, and flow alteration (Ohio EPA, 2012; 2018). Suspected causes for

this impairment include nearby agriculture, channelization, and the upstream impoundment of the Indian Lake dam.

3.3.1.2 Groundwater

The project area is characterized by high groundwater. According to the NRCS's Web Soil Survey website, approximately 46% of the project area has a water table depth of one foot or less and approximately 91% has a water table depth of two feet or less (USDA NRCS, 2021). Wells installed within the project area can anticipate greater yields than domestic supplies of 5 to 15 gallons per minute (Schmidt, 1983). Properly screened wells here may yield as much as 500 gallons per minute at depths of about 100 feet. The ODNR Ohio Geology Interactive Map identifies twelve wells within the project area (ODNR, 2021b).

3.3.1.3 Floodplains

Executive Order 11988 requires Federal agencies to consider the potential effects of their proposed actions to floodplains. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was reviewed in order to determine the location of the 100-year floodplain within the project area (see Appendix F). There are large areas of floodplain in the eastern and western parts of the project area. In the eastern portion, local riverine flooding is due to overbank flooding from the Great Miami River when it cannot convey storm runoff quickly enough. In the western portion, flooding occurs along the Slough due to backwater from the Great Miami River. This backwater flooding extends north of US Route 33, as floodwaters back up through the culvert that carries The Slough under US Route 33.

3.3.1.4 Wetlands

A National Wetland Inventory (NWI) wetland mapping tool was reviewed for the project area and indicated that Areas 4, 12, and 13 contain wetlands. In Area 4 (the easternmost area of the Project) a large wetland has been constructed as part of the Indian Lake/Great Miami River Open Space Project. This wetland, which is located in the low-lying parts of Area 4, receives water from the Great Miami River. The NWI map identifies four wetland polygons within this area: three emergent wetlands that are 2.12, 1.25, and 0.35 acres in size and one forested wetland 0.79 acres in size, respectively. The wetlands in the westernmost areas of the Project, Areas 12 and 13, are associated with the Slough and are inundated with the backwater of the Great Miami River. In Area 12, the NWI map identifies a complex of emergent wetland polygons that covers 8.76 acres in total. The NWI map identifies two emergent wetland polygons within Area 13: a 4.41-acre site just south of US Route 33 and a 5.23-acre site just north of West Elliott Road. The NWI map is provided in Appendix D. A site visit conducted by a USACE biologist on 22 July 2021 confirmed the presence of these wetlands.

3.3.2 Environmental Consequences

3.3.2.1 No Action

Because no construction activities would occur under the No Action Alternative, no effect to surface water or other aquatic resources are anticipated.

3.3.2.2 Alternative 1 – Recommended Action

Implementation of Alternative 1 would result in negligible and short-term effects to surface water and other aquatic resources. The implementation of best management practices such as silt fencing, staked bale dikes, diversion ditches and berm, and vegetation maintenance would mitigate potential adverse impacts to water quality in Indian Lake and the Great Miami River. Given the high-water table throughout the Village, dewatering would likely be required to install or replace sewer lines. Because this would occur only over the short-term and only in the limited locations needed to install or replace sewer line, impacts to groundwater are anticipated to be negligible. While this alternative would require construction in the100-year floodplain, the installation of sewer lines below ground prevents any effect to floodplain function. The non-federal sponsor (NFS) would be responsible for acquiring any state or local permits necessary for construction within the floodplain. While several wetland areas exist adjacent to locations impacted by this alternative, impacts to wetlands would be short-term, and easily mitigated into negligibility with best management practices such as silt fencing.

3.3.2.3 Alternative 2

Implementation of Alternative 2 would largely result in the same levels of impact to surface water and other aquatic resources as in Alternative 1. Impacts to surface water would again be short-term and negligible as best management practices would mitigate potential water quality impacts. Dewatering under this alternative would need to occur at a slightly larger scale to account for the wider sewer lines compared to Alternative 1, though these impacts would again be short-term and negligible. Construction activities under this alternative occur in the same places and would therefore require work in the same parts of the 100-year floodplain. There would be no effect to floodplain function and the NFS would be responsible for acquiring any necessary state or local floodplain construction permits. Wetland impacts would again be short-term, and negligible.

3.4 Fish and Wildlife Habitats

3.4.1 Existing Conditions

3.4.1.1 Fauna

The project area has been highly disturbed locally by urban development and regionally by agricultural development. Consequently, the fauna present within the project area is generally limited to edge and urban adaptive species. Such species typically include songbirds, coyotes,

foxes, deer, raptors, mice, squirrels, raccoons, and rabbits. However, the area also lies along one of the country's major avian migration routes, and the nearby Indian Lake attracts the presence of a variety of bird species (ODNR, 2021a). Migrating species that visit Indian Lake include Canada geese, ducks, grebes, swans, egrets, and herons. In addition, bald eagles have been observed nesting near the lake in recent years.

Fish are generally absent within the overall project area. However, the nearby Indian Lake and Great Miami River both support fish populations. Species found within Indian Lake include largemouth bass, saugeye, white bass, crappie, bluegill, walleye, yellow perch, and catfish (ODNR, 2021a). The Great Miami River, which runs along the southeastern border of the project area, is known to support populations of smallmouth, largemouth, spotted, white, and rock bass, sunfish, and channel and flathead catfish (Ohio State University, 2017).

3.4.1.2 Existing Terrestrial Habitat

The overall project area is located within the Eastern Corn Belt Plains physiographic region, and more specifically the Clayey, High Lime Till Plains subregion (Woods et al., 1998). Hardwood forests were originally much more prevalent here. Historically, beech forests were common on Wisconsinan soils while the wetter pre-Wisconsinan soils promoted the growth of both beech forests and elm-ash swamp forests (Woods et al., 1998). Today, these forests have largely been replaced by corn, soybean, wheat, and livestock farming. The subregion's streams tend to be turbid and low gradient in nature.

Within the overall project area, urban development has restricted habitat use even further, limiting the species present generally to ruderal plant species and the adaptive animal species listed above in section 3.4.1.1. Wetlands within the overall project area may represent exceptions to this, however. Flora typical of emergent wetlands include various sedges, cattail, spikerush, smartweed, knotweed, arrowhead, pickerelweed, pondweed, naid, watermilfoil, bladderwort, duckweed, and waterlily.

3.4.2 Environmental Consequences

3.4.2.1 No Action

Because no construction activities would occur under the No Action Alternative, no effect to fish and wildlife habitat would be anticipated.

3.4.2.2 Alternative 1 – Recommended Action

Impacts to terrestrial fauna and habitat would be short-term and minor as a result of implementing the Recommended Action. Some clearing of vegetation will be necessary during excavation, though all disturbed areas will be reestablished with vegetation once construction is complete. Additional construction-related impacts to terrestrial fauna and habitat include soil disturbances, increased noise, and air quality impacts. The minor soil disturbances under Alternative 1 would be mitigated by best management practices. Because this alternative would

not require around-the-clock construction, there would respite from construction noise and time for air emissions to disperse. Impacts to aquatic fauna and habitat would be short-term and negligible because no in-water work would be required, and best management practices would be utilized to prevent sedimentation and turbidity increases. Sites will be revegetated with native species following construction to prevent the spread of invasive species which may be able to exploit the environmental disturbance.

3.4.2.3 Alternative 2

Impacts to wildlife and habitats under Alternative 2 would be expected to be the same as impacts under Alternative 1. Due to the greater amount of excavation required under this alternative, greater impacts related to vegetation, soil, noise, and air quality would be anticipated when compared to Alternative 1. However, the increase in excavation would be modest resulting in only short-term and minor impacts to terrestrial fauna and habitat (following rationale provided in Section 3.4.2.2). Impacts to aquatic fauna and their habitat would be short-term and negligible because no in-water work would be required, and best management practices would be utilized to prevent increased sedimentation and turbidity. Sites will be revegetated with native species following construction to prevent the spread of invasive species which may be able to exploit the environmental disturbance.

3.5 Threatened and Endangered Species

Lists of threatened, endangered, and species of special concern are maintained by the USFWS and the State of Ohio. Under the Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531-1544), endangered species are defined as any species in danger of extinction throughout all or portions of its range. A threatened species is any species likely to become endangered in the foreseeable future. The ESA defines critical habitat of the above species as a geographic area that contains the physical or biological features that are essential to the conservation of a particular species and that may need special management or protection. This section also covers birds listed under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C §§ 703-712) as birds of conservation concern.

The analysis in this section is provided to fulfill the requirements of NEPA and to serve as a biological assessment (BA) to fulfill the requirements of Section 7 consultation under the ESA. USACE is seeking concurrence from the resource agencies, including the USFWS, with several effect determinations. The Final EA will be updated to document concurrence and any additional comments received from resource agencies will be provided in Appendix H.

3.5.1 Existing Conditions

3.5.1.1 Federally Listed Species

An official list of federally protected species was generated using the USFWS automated Information for Planning and Consultation (IPaC) website. The list generated by the IPaC website included four species that could potentially be affected by activities near the project area. The presence of a species on the list does not indicate presence within the project area.

Table 5. Federally listed species that could potentially occur within the project area, according to the USFWS.

Taxon	Common Name	Scientific Name	Status
Mammals	Indiana bat	*Myotis sodalis*	Endangered
	Northern long-eared bat	*Myotis septentrionalis*	Threatened
Reptiles	Eastern massasauga	*Sistrurus catenatus*	Threatened
	Copperbelly Water Snake	*Nerodia erythrogaster neglecta*	Threatened
Mussels	Rayed bean	*Villosa fabalis*	Endangered
Insects	Monarch butterfly	*Danaus plexippus*	Candidate

The project area is within the range of the Indiana bat. In the spring, bats emerge from hibernation and migrate to summer roost sites. During the summer months, female Indiana bats establish maternity colonies of up to 100 bats under the loose bark of trees and in tree cavities. Loss and fragmentation of forest habitat are among the major threats to Indiana bat populations. Other threats include white-nose syndrome, winter disturbance, and environmental contaminants (USFWS, 2019a).

The rayed bean is a small freshwater mussel that has historically existed across a wide area that included parts of the Midwest and eastern United States, and could be found as far north as Ontario, Canada. This species generally inhabits smaller, headwater creeks, but can also live in large rivers and wave-washed areas of glacial lakes. The rayed bean is imperiled by degraded water quality resulting from pollution and sedimentation. Dams also pose a threat to this species, as it cannot survive in the still waters of the impoundment, and the movement of fish (which many mussel species rely on for dispersal) is significantly impeded (USFWS, 2019b).

The northern long-eared bat was listed as a threatened species in 2015 due to declines mostly associated with white-nose syndrome. The bats spend winter hibernating in caves and mines. During the summer, the bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags. Males and non-reproductive females may also roost in cooler places, like caves and mines. Like other listed bat species, northern long-eared bats have experienced a population decline resulting from white-nose syndrome and human disturbance (USFWS, 2020b).

The eastern massasauga is a small, thick-bodied rattlesnake that inhabits shallow wetlands and nearby upland areas. A wide variety of wetlands are suitable for this species, including bogs, fens, shrub swamps, wet meadows, marshes, wet prairies, and floodplain forests. These environments are inhabited in the spring, fall, and winter, though the eastern massasauga typically moves to drier upland sites in the summer. Habitat loss and fragmentation in the form of wetland degradation is a significant threat to this species (USFWS, 2020a).

The copperbelly water snake is a threatened species in the northern part of its range (North of 40 degrees north latitude in Indiana, Michigan, and Ohio). The species occupies wetlands and adjacent uplands, and generally requires habitat complexes of isolated wetlands distributed in a

forested upland matrix, floodplain wetlands fed by seasonal flooding, or a combination of both. Urban/suburban encroachment, coal mining, and wetland drainage all threaten this species, especially its northern populations (USFWS, 2022).

3.5.1.2 Critical Habitat

There are no USFWS designated critical habitats within the project area (see IPaC report in Appendix H).

3.5.2 Environmental Consequences

3.5.2.1 No Action

Because no construction activities would occur under the No Action Alternative, no effect to any threatened or endangered species or their critical habitats would be anticipated.

3.5.2.2 Alternative 1 – Recommended Action

Negligible effects to threatened or endangered species or their critical habitats is anticipated under Alternative 1. While some limited amount of tree clearing may occur, such activities would only occur from October 1 through March 31 to mitigate potential effects to Indiana bat or northern long-eared bat. Best management practices would mitigate potential adverse effects to surface waters and the rayed bean. While Project activities would occur near wetlands in several areas around the Village, best management practices would mitigate any potential adverse effects to them. This, in combination with the fact that the upland areas where work is occurring are already developed or otherwise heavily disturbed by urbanization, would result in negligible effects to eastern massasauga or copperbelly water snake. Since no critical habitat is present within the area affected by the Project, no effect to critical habitat would occur under this alternative. USACE correspondence with USFWS regarding potential impacts to threatened and endangered species resulting from the implementation of this alternative is provided in Appendix H.

3.5.2.3 Alternative 2

The implementation of Alternative 2 would be expected to result in negligible effects to threatened or endangered species. No effect to critical habitats is anticipated under Alternative 2 (see Section 3.5.2.2).

3.6 Aesthetic and Recreational Resources

3.6.1 Existing Conditions

The primary aesthetic and recreational resource around the project area is Indian Lake, located just north of the project area. The lake offers recreational activities such as boating, fishing, jet skiing, and swimming. The nearby Indian Lake State Park offers additional recreation options including camping, hiking, hunting, picnicking, archery, and disc golf, among others. Winter recreation is also available, pending proper winter conditions. These winter activities include snowmobiling, ice skating, cross-country skiing, and ice fishing.

The 5,100-acre Indian Lake is the area's primary aesthetic asset. However, this aesthetic value is increased further by the presence of wetlands which promote wildlife. This includes the extensive wetlands found at the northeastern portion of Indian Lake and, within the overall project area itself, the wetlands recently constructed within Area 4 by the Indian Lake/Great Miami River Open Space project. These features, coupled with their presence along a major avian migration route, make the project region an excellent place to observe avian wildlife.

3.6.2 Environmental Consequences

3.6.2.1 No Action

Because no construction activities would occur under the No Action Alternative, no construction-related effects to aesthetic resources would be anticipated. However, the unsightly ponding of stormwater that cannot be conveyed quickly enough would be expected to continue. Thus, minor long-term impacts to the Village's aesthetics would be likely. There would be no effect to the Village's recreational resources under this alternative because construction would not occur, and inadequate conveyance of stormwater in the Village would not affect the area's recreational opportunities.

3.6.2.2 Alternative 1 – Recommended Action

Minor, short-term impacts to aesthetics are anticipated under Alternative 1. Temporary disturbance of the local aesthetics would be anticipated during the installation and replacement of sewer lines. However, the excavated sites would be restored to original conditions after construction via reseeding efforts. Negligible effects to recreational resources are anticipated because any potential effects to nearby surface water features, most notably Indian Lake, would be mitigated.

3.6.2.3 Alternative 2

Minor, short-term impacts to aesthetics are anticipated under Alternative 2 as with Alternative 1 but are expected to occur over a longer time-frame due to the additional excavation needed to

install larger sewer pipes. Once again, the excavated sites would be restored to original conditions following the completion of construction activities. Negligible effects to recreational resources are anticipated because any potential effects to nearby surface water features, most notably Indian Lake, would be mitigated.

3.7 Cultural Resources

3.7.1 Existing Conditions

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects federal undertakings will have on districts, sites, buildings, structures, or objects listed in or eligible for inclusion in the National Register of Historic Places (NRHP). On January 10, 2022, the Corps coordinated with 49 Tribes and the Ohio State Historic Preservation Officer (OSHPO) the finding of "no effect to historic properties" and the associated report titled Phase I Cultural Resource Management Survey for the Proposed Storm Sewer Improvements in the Village of Russells Point, Logan County, Ohio written by the Professional Archaeological Services Team (PAST) in September of 2021.

An onsite cultural resources survey was conducted by PAST in September of 2021. The survey identified no new archaeological sites or built structures within the Area of Potential Effect (APE) and the previously recorded site was not reidentified within the APE.

3.7.2 Environmental Consequences

3.7.2.1 No Action

The NAA would have no effect on cultural resources.

3.7.2.2 Alternative 1 – Recommended Action

The cultural resources survey conducted on September of 2021 by PAST identified no archaeological sites or built structures within the APE. Due to the results of the survey the Corps determined the Project will have no effect on historic properties eligible for the listing or listed in the NRHP in accordance with 36CFR800.4(d)(1). By February 8, 2022, responses/concurrence with the Corps Determination was received from the Nottawaseppi Huron Band of the Potawatomi, Oneida Nation, Peoria Tribe, Seneca Nation of Indians, and the OSHPO.

3.7.2.3 Alternative 2

While Alternative 2 would install larger storm sewer pipes than Alternative 1, the increase in ground disturbance would be small. Because the cultural resources survey conducted on September of 2021 by PAST identified no archaeological sites or built structures within the APE, Alternative 2 would have no effect on cultural resources.

3.8 Air Quality

3.8.1 Existing Conditions

The U.S. Environmental Protection Agency (USEPA) Office of Air Quality Planning and Standards has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, called "criteria" pollutants. They are carbon monoxide, nitrogen dioxide, ozone, lead, particulates of 10 microns or less in size (PM-10 and PM-2.5), and sulfur dioxide. Ozone is the only parameter not directly emitted into the air but forms in the atmosphere when three atoms of oxygen (O_3) are combined by a chemical reaction between oxides of nitrogen (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents are some of the major sources of NO_x and VOC, also known as ozone precursors. Strong sunlight and hot weather can cause ground-level ozone to form in harmful concentrations in the air.

As of March 31, 2022, Logan County in Ohio had attainment status for all criteria pollutants (USEPA, 2022).

3.8.2 Environmental Consequences

3.8.2.1 No Action

The No Action Alternative would not generate construction-related air emissions and would have no effect on air quality.

3.8.2.2 Alternative 1 – Recommended Action

Implementation of Alternative 1 would be anticipated to cause minor, localized, and short-term impacts to air quality during construction. Potential sources of these impacts include emissions from heavy equipment which include diesel fuel fumes and exhaust. However, this alternative would quickly dissipate and would not be expected to cause long-term impacts to air quality.

3.8.2.3 Alternative 2

As with Alternative 1, minor, localized, and short-term impacts to air quality are anticipated during the construction of Alternative 2. Emissions would occur over a longer time period due to the additional excavation required under this alternative, ultimately releasing a greater quantity of diesel fuel fumes and exhaust. However, this alternative, like Alternative 1, would be temporary and not be expected to cause long-term impacts of air quality of the project area.

3.9 Noise

3.9.1 Existing Conditions

Sound levels within the vicinity of the Project vary based on time of day and time of year. The primary sources of noise within the project area include everyday vehicular traffic along U.S. Route 33 (typically between 50 and 60 decibels, or dBA, at 100 feet), as well as mowers utilized on adjacent properties and motorboats operating on Indian Lake.

3.9.2 Environmental Consequences

3.9.2.1 No Action

No construction would occur under the No Action Alternative, and therefore no effect to noise would be anticipated.

3.9.2.2 Alternative 1 – Recommended Action

Noise associated with this alternative would be limited to that generated during construction. The noise associated with construction would only occur during daylight hours. Noise is measured as Day Night average noise levels (DNL) in "A-weighted" decibels that the human ear is most sensitive to (dBA). There are no Federal standards for allowable noise levels. According to the Department of Housing and Urban Development Guidelines, DNLs below 65 dBA are normally acceptable levels of exterior noise in residential areas. The Federal Aviation Administration (FAA) denotes a DNL about 65 dBA as the level of significant noise impact. Several other agencies, including the Federal Energy Regulatory Commission, use a DNL criterion of 55 dBA as the threshold for defining noise impacts in suburban and rural residential areas. The Corps Safety and Health Requirements Manual provides criteria for temporary permissible noise exposure levels (see Table 1), for consideration of hearing protection or the need to administer sound reduction controls.

Table 6. Permissible non-Department of Defense noise exposures.

Duration/Day (hours)	Noise Level (dBA)
8	90
6	92
4	95
3	97
2	100
1.2	102
1	105

Construction noise would be similar to that of farm equipment and other machinery used in the local area. A backhoe, end loader, and/or vibratory roller are examples of equipment that are likely to be used during construction. Each emits noise levels around 85 dBA at 45 feet. Construction equipment would be operated during daylight hours, and exposure times are not

anticipated to exceed permissible levels described in Table 6. Peak outdoor noise levels ranging from 78-90 dBA would occur during the time in which equipment is directly in front of or in proximity to homes (within 25-100 feet). A maximum noise exposure of approximately 98 dBA, for one hour could occur if equipment were within 10 feet of homes. The noise projections do not account for screening objects, such as trees, outbuildings or other objects that muffle and reduce the noise being emitted. The outdoor construction noise would be further muffled while residents are inside their homes. These limited exposures and time intervals are within allowable Corps safety levels. Furthermore, they are similar to typical neighborhood noises generated by gas powered lawnmowers in the local area, which could range from 90-95 dBA at three feet and 70-75 dBA at 100 feet. Exposure of residents to these noise levels would occur if and/or when residents are home and outdoors.

Due to daytime construction in close proximity to residential areas, the limited duration of elevated noise levels associated with this alternative, and required exhaust mufflers on construction equipment, impacts from Alternative 1 construction noise to local residences would be short-term and minor, and would not be expected to be significant.

3.9.2.3 Alternative 2

Noise-related impacts under Alternative 2 are expected to be short-term and minor, though the additional excavation required under this alternative would prolong noise impacts when compared to Alternative 1. Given the modest difference in size between sewer pipes in Alternatives 1 and 2, noise exposure under Alternative 2 would not be anticipated to be significantly greater than Alternative 1 and would still be within allowable Corps safety levels.

3.10 Hazardous and Toxic Substances

3.10.1 Existing Conditions

Hull and Associates, LLC performed a Phase I Hazardous, Toxic, and Radioactive Wase (HTRW) investigation of the project area in October 2021 (Appendix E). This investigation, performed in accordance with ASTM E-1527-13 Standards, was conducted to identify the risk of encountering HTRW and non-HTRW environmental issues within the project area and to determine if any Recognized Environmental Conditions (RECs) present have impacted the project area or would impact implementation of an action alternative. The RECs identified in this investigation are shown below in Table 7. Figure 14 below depicts the locations of these facilities. A complete list of the facilities included in this HTRW investigation is provided in Appendix E.

Table 7. Facilities of HTRW concern within the project area.

Facility	Address	Area	Description
REC 1 – Former Dry Cleaner	337 E. Main Street, Russells Point, OH	Area 8	The historical operation of a dry-cleaning facility from at least 2004 to 2008 within the project area represents a potential environmental concern, due to its proximity to proposed improvements. Historical operations may have resulted in a release of volatile organic compounds (VOCs) to soil, water, or soil vapor.
REC 2 – Marathon Gas Station	209 State Route 708, Russells Point, OH	Areas 1 & 7	The facility has been a gasoline service station since at least 1975. A release was identified from the Underground Storage Tank (UST) system at the Site in 1993. The on-going Ohio Bureau of Underground Storage Tank Regulations (BUSTR) investigation has demonstrated that petroleum impact is present on-site and may have migrated off-site in excess of petroleum contaminated soil (PCS) re-use action levels presented in Ohio Administrative Code (OAC) 1301:7-9-13. This represents a potential environmental concern, due to its proximity to proposed improvements. Soil, water, or soil vapor may be impacted by VOCs, polynuclear aromatic hydrocarbons, and/or total petroleum hydrocarbons.

Figure 14. Location of RECs within the project area. The yellow polygon marks the location of REC 1. The orange polygon marks the location of REC 2.

3.10.2 Environmental Consequences

3.10.2.1 No Action

No construction would occur under the No Action Alternative, and therefore no effect to HTRW substances would be anticipated.

3.10.2.2 Alternative 1 – Recommended Action

Known contamination sources within the project area are not anticipated to prevent implementation of Alternative 1. Potential hazardous and toxic exposures during construction of this alternative would be minimized through the use of standard operating procedures and specifications covering health and safety, environmental exposure, and appropriate disposal. Nonetheless, the potential for unexpected hazardous/toxic encounters remains. To avoid potential impacts, strict adherence to health and safety plans and project specifications would be required. No hazardous or toxic materials would be produced by this alternative. Therefore, HTRW impacts are anticipated to be minor and short-term.

3.10.2.3 Alternative 2

HTRW impacts under Alternative 2 are expected to be the same as under Alternative 1, and the known contamination sources within the project area are not anticipated to prevent the implementation of this alternative either. No hazardous or toxic materials would be produced by this alternative. Therefore, HTRW impacts would be anticipated to be minor and short-term (see Section 3.10.2.2).

3.11 Demographics and Environmental Justice

3.11.1 Existing Conditions

The USEPA EJScreen tool was utilized to evaluate the demographics and environmental justice variables for the area of Russells Point, Ohio (see Appendix G). Table 8 shows the environmental and demographic indicators for this area ("Value" column), and how those indicators compare to the state, regional, and national averages.

Table 8. Environmental and demographic indicators of Russells Point, Ohio.

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in ug/m^3)	8.66	9.03	23	8.4	50	8.55	53
Ozone (ppb)	44.2	44.5	44	43.8	46	42.9	64
NATA Diesel PM (ug/m^3)	0.23	0.416	15	0.446	<50th	0.478	<50th
NATA Air Toxics Cancer Risk (risk per MM)	21	26	6	26	<50th	32	<50th
NATA Respiratory Hazard Index	0.26	0.34	5	0.34	<50th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	190	400	56	530	51	750	47
Lead Paint Indicator (% pre-1960s housing)	0.39	0.41	55	0.38	58	0.28	70
Superfund Proximity (site count/km distance)	0.019	0.095	16	0.13	9	0.13	17
RMP Proximity (facility count/km distance)	1.1	0.71	79	0.83	76	0.74	79
Hazardous Waste Proximity (facility count/km distance)	0.079	2.4	4	2.4	9	5	10
Wastewater Discharge Indicators (toxicity-weighted concentration/m distance)	0.00073	0.43	43	2.4	54	9.4	64
Demographic Indicators							
Demographic Index	32%	26%	72	28%	69	36%	53
Minority Population	9%	21%	44	25%	36	39%	19
Low-Income Population	55%	32%	83	30%	86	33%	84
Linguistically Isolated Population	4%	1%	88	2%	81	4%	68
Population with Less Than High School Education	10%	10%	62	10%	63	13%	54
Population under Age 5	6%	6%	55	6%	54	6%	52
Population over Age 64	17%	16%	59	16%	62	15%	66

When compared to the national average, the assessed area received a higher score on the particulate matter (PM 2.5 in ug/m^3), ozone (ppb), lead paint indicator (percent pre-1960s housing), RMP proximity (site count/km distance), and wastewater discharge indicators (toxicity-weighted concentration/m distance) measurements. The assessed area scored at or below the national average for all other environmental indicators. When compared to the national average, the assessed area contains a smaller percentage of minority population and population

with less than a high school education, a similar percentage of linguistically isolated population, and a higher percentage of low-income population. The percentage of population under 5 years of age and over 64 years of age are similar to the national averages.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (Executive Order, 1994), directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. When conducting NEPA evaluations, the Corps of Engineers incorporates Environmental Justice (EJ) considerations into both the technical analyses and the public involvement in accordance with the USEPA and the Council on Environmental Quality guidance (CEQ, 1997). The CEQ guidance defines "minority" as individual(s) who are members of the following population groups: American Indian or Alaskan native, Asian or Pacific Islander, Black, not of Hispanic origin, and Hispanic. The Council defines these groups as minority populations when either the minority population of the affected area exceeds 50-percent of the total population, or the percentage of minority population in the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographical analysis.

Table 9. Comparison of percentile ranks for various Environmental Justice Indexes among Ohio, the EPA Region 5, and the USA.

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	73	71	55
EJ Index for Ozone	73	71	55
EJ Index for NATA Diesel PM	74	71	55
EJ Index for NATA Air Toxics Cancer Risk	74	71	56
EJ Index for NATA Respiratory Hazard Index	74	71	56
EJ Index for Traffic Proximity and Volume	54	54	43
EJ Index for Lead Paint Indicator	62	57	35
EJ Index for Superfund Proximity	74	72	56
EJ Index for RMP Proximity	57	54	38
EJ Index for Hazardous Waste Proximity	75	72	56
EJ Index for Wastewater Discharge Indicator	55	41	27

Table 9 shows how EJ indexes of Russells Point, Ohio compare to the State of Ohio, USEPA Region 5, and the United States. The data indicate that, while these EJ indexes are near or below the national medians, the indexes for Particular Matter (PM 2.5), Ozone, National Air Toxics Assessment (NATA) Diesel PM, NATA Air Toxics Cancer Risk, NATA Respiratory Hazard Index, Superfund Proximity, and Hazardous Waste Proximity are notably above medians for the state and EPA region.

3.11.2 Environmental Consequences

3.11.2.1 No Action

No EJ Indexes are anticipated to be exacerbated under the No Action Alternative, and thus no disproportionately high adverse impacts would occur to the minority and low-income populations living in or around the project area. No effects demographics or EJ would occur under this alternative.

3.11.2.2 Alternative 1 – Recommended Action

Alternative 1 would improve the living environment for all residents of the Village by improving the currently inadequate stormwater collection system, thereby reducing ponding and the additional strain on sanitary sewer system that serves the Village. While a number of air quality related EJ indexes in the area of the Village are notably above the state and regional medians (see Table 9), air quality impacts under Alternative 1 are expected to be minor, localized, and short-term (see Section 3.8.2.2). Thus, these EJ indexes are not anticipated to worsen, and the implementation of Alternative 1 would not incur disproportionate adverse impacts on minority or low-income populations. This same rationale extends to the minor and short-term noise impacts anticipated under this alternative. Therefore, no adverse effects to demographics or environmental justice are anticipated under Alternative 1.

3.11.2.3 Alternative 2

Demographic and environmental justice impacts under Alternative 2 are expected to be much the same as Alternative 1. The living environment of the Village would be improved, EJ indexes would not be anticipated to worsen, and local minority and low-income populations would not suffer disproportionate adverse effects from the minor and short-term impacts related to air quality and noise. While the increased excavation required under this alternative may pose an increased risk of air quality and noise impacts, the modest difference in scale between Alternatives 1 and 2 would prevent this increased risk from being significant. No adverse effects to demographics or environmental justice are anticipated under Alternative 2.

4.0 Cumulative Effects

NEPA requires Federal agencies to consider not only the direct and indirect impacts of a proposed action, but also the cumulative impacts of the action. A cumulative impact is defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR § 1508.1(g))." Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time. These actions include on- or off-site projects conducted by government agencies, businesses, or individuals that are within the spatial and temporal boundaries of the actions considered.

USACE reviewed the project area and the areas close to it to identify projects that have recently occurred, are occurring, or could be reasonably expected to occur in the future in order to provide cumulative effect analysis. The projects of particular note are the Indian Lake / Great Miami River Open Space project and various neighborhood revitalization projects, all occurring within or near the Village. The Indian Lake / Great Miami River Open Space project, which is principally concentrated on Area 4, involves the creation of more than eight acres of wetlands, twenty acres of prairie, over a mile of trail, and a river access ramp (Ohio Public Works Commission, 2020). This project provides the Village with additional stormwater infiltration and storage, restores habitat for wildlife, and enhances the recreational and educational resources available to the local community. Various neighborhood revitalization projects are also planned in various locations throughout the Village in order to improve streets, sidewalks, water infrastructure, and local park and recreation facilities (Russells Point, 2022; The Highland County Press, 2021). Specific actions include the replacement or reconstruction of sidewalks and streets; replacement of 420 feet of water main, two gate valves, and 120 feet of service branch; and park improvements including a new restroom, new basketball court, and upgrades to the Leppich Ball Field. While the Ohio Department of Transportation identifies a number of highway projects in Logan County, none appear to occur close enough to the project area to potentially incur cumulative effects (ODOT, 2022). USACE is not aware of any other major state and/or private actions planned in or around the Village that could cumulatively impact the environment with the Project.

4.1 No Action

Based on the analysis provided in Section 3.0, the No Action Alternative would be expected to result in minor, long-term impacts to soils. The various projects described above in Section 4.0 can be reasonably expected to result in minor, short-term impacts to soils. However, all of these projects can be reasonably expected to implement best management practices to mitigate these potential effects. Because of this mitigation and the small scale of each possible soil disturbance, no significant cumulative impacts to soils would be anticipated under the No Action Alternative, even if all of the projects considered were to occur simultaneously. The No Action Alternative does not have the potential to adversely impact the other resources considered in Section 3.0, and thus there is no potential for this alternative to contribute to significant cumulative effects to these other resources. The implementation of the No Action Alternative would not be expected to jeopardize the successful implementation, maintenance, or outcomes of the other projects occurring in or around the Village.

4.2 Action Alternatives

Alternatives 1 and 2 are analyzed together for their potential to incur significant cumulative effects due to their similarity. While the larger scale of Alternative 2 gives it an inherently higher risk for significant cumulative effects than Alternative 1, this increase in scale is modest. Thus, USACE does not anticipate a significant difference in the potential of cumulative effects between these two alternatives.

Alternatives 1 and 2 would be expected to result in minor, short-term impacts to soils, surface waters, groundwater, wetlands, terrestrial fauna and habitat, visuals, air quality, noise, and HTRW materials. All adverse impacts anticipated from implementing either of the action alternatives would occur during construction, and the long-term effect would be to augment the living environment of the Village along with the other recent, ongoing, or proposed projects. Given the modest scale of all projects considered, USACE does not anticipate any risk of significant cumulative effects, even if these projects were to occur concurrently. All projects can be reasonably expected to implement best management practices to mitigate potential impacts to soils, aquatic resources, and terrestrial fauna and habitat. All projects can be reasonably expected to restore site conditions to address any short-term construction-related visual impacts. All construction activities for all projects can be reasonably expected to occur during normal working hours, thus providing respite from noise and time for air emissions to disperse. HTRW-related risks under the action alternatives would be mitigated by strict adherence to health and safety plans and project specifications, and USACE anticipates that such precautions would be taken for other projects as well. None of the projects considered are expected to produce HTRW materials. The implementation of either action alternative would not be anticipated to jeopardize the successful implementation, maintenance, or outcomes of the other projects occurring in or around the Village.

5.0 Public Comment Summary

In compliance with NEPA and USACE policies, input on the draft EA and FONSI was solicited from the public and other governmental agencies. During the Scoping Phase, USACE notified government agencies of the Project and requested their input regarding the proposed activities. NRCS and Logan County Health District both submitted comments during the Scoping Phase (see Table 10 below). The public was invited to comment during the public review period of the draft EA and draft FONSI. Table 10 will be updated as more comments are received. All comments received are included in Appendix J.

Table 10. Public Comments.

Nature of Comment	Time Received	USACE Response
NRCS identified several of its Agricultural Conservation Easement Program Easement in the general area of the Project. NRCS requested notification in the event that a proposed action affected any of these easement lands.	Scoping Phase	USACE confirms that none of the alternatives considered in this draft EA, including the Recommended Plan, affect any of these easement lands.
Logan County Health District stated that a review of their files did not reveal any adverse environmental factors known to their agency.	Scoping Phase	USACE acknowledges this information.

6.0 Environmental Compliance

Compliance with environmental laws and regulations required for the preferred alternative is identified below and shown in Table 11.

Table 11. Environmental Compliance Summary.

Statute/Executive Order	Status
Clean Air Act	Compliant
Clean Water Act	Compliant
Endangered Species Act	In progress
Farmland Protection Policy Act	Compliant
Fish and Wildlife Coordination Act	Compliant
Migratory Birds Treaty Act	Compliant
National Environmental Policy Act	In progress
National Historic Preservation Act	Compliant
EO 11988 Floodplain Management	Compliant
EO 11990 Protection of Wetlands	Compliant
EO 12898 Environmental Justice in Minority Populations and Low-Income Populations	Compliant
EO 13112 Invasive Species	Compliant
EO 14008 Tackling the Climate Crisis at Home and Abroad	Compliant

6.1 Clean Air Act (CAA)

The purpose of this act is to protect public health and welfare by the control of air pollution at its source and to set forth primary and secondary National Ambient Air Quality Standards to establish criteria for states to attain or maintain. Based on the analysis provided in Section 3.8.2.2, the Recommended Action is compliant with CAA.

6.2 Clean Water Act (CWA)

The objective of this act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters (33 U.S.C. 1251). USACE regulates discharges of dredged or fill material into waters of the United States pursuant to Section 404 of the Clean Water Act. This permitting authority applies to all waters of the United States including navigable waters and wetlands. Section 404 requires authorization to place dredged or fill material into waters of the United States. If a Section 404 authorization is required, a Section 401 water quality certification from the state in which the discharge originates is also needed. Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land must obtain permission under a National Pollutant Discharge Elimination System (NPDES) permit. Given the amount of sewer pipeline proposed for installation or replacement, it is likely that authorization under a NPDES permit will be required. Per the Project Partnership Agreement (PPA), the NFS is responsible for acquiring this permit coverage.

6.3 Endangered Species Act (ESA)

Section 7 of this act states that all Federal departments and agencies shall, in consultation with and with the assistance of the Secretary of the Interior (Secretary), ensure that any actions authorized, funded, or carried out by them do not jeopardize the continued existence of any threatened or endangered (T&E) species, or result in the destruction or adverse modifications of habitat of such species which is determined by the Secretary to be critical. This draft EA represents the assessment and findings regarding the Project and serves as the Biological Assessment with a determination of "may affect, but not likely to adversely affect" to the Indiana bat and northern long-eared bat, and a determination of no effect to eastern massasauga, copperbelly water snake, and rayed bean. Agency correspondence related to these effect determinations will be provided in Appendix H. The Project's compliance with ESA is currently in progress and will be concluded when USFWS has concurred with these effect determinations.

6.4 Farmland Protection Policy Act

The Farmland Protection Policy Act is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses and assures, that to the extent possible, federal programs are administered to be compatible with state, local, and private programs and policies to protect farmland. Based on the analysis provided in Section 3.2.2.2, the Recommended Action would not irreversibly convert farmland to nonagricultural uses.

6.5 Fish and Wildlife Coordination Act (FWCA)

The Fish and Wildlife Coordination Act requires governmental agencies, including USACE, to coordinate activities so that adverse effects on fish and wildlife would be minimized when water bodies are proposed for modification. Section 3.3.2.2 details that the Recommended Action would not modify water bodies or other aquatic resources. Thus, coordination with USFWS and ODNR pursuant to FWCA is not required. Nevertheless, the draft EA will be submitted to USFWS and ODNR, in addition to other stakeholder resource agencies, for public review.

6.6 Migratory Birds Treaty Act (MBTA)

The MBTA is the domestic law that affirms, or implements, the United States' commitment to four international conventions with Canada, Japan, Mexico, and Russia for the protection of shared migratory bird resources. The MBTA governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over utilization. Executive Order 13186 (2001) directs agencies to take certain actions to implement the act. While migratory birds are likely present within the general area of the Project at least part of the year (see Section 3.4.1.1), Section 3.4.2.2 details how the effects to migratory

birds and other fauna are anticipated to be no more than minor, short-term disturbances. These disturbances would not result in take of migratory birds.

6.7 National Environmental Policy Act (NEPA)

NEPA sets forth the national policy "to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Section 102 authorizes and directs that, to the fullest extent possible, the policies, regulations, and public law of the United States shall be interpreted and administered in accordance with the policies set forth in NEPA. Section 102 requires consideration of environmental impacts associated with Federal actions. Section 101 requires the Federal government to use all practicable means to create and maintain conditions under which man and nature can exist in productive harmony. Specifically, Section 101 declares:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation risk to health or safety or other undesirable and unintended consequences;
- Preserve important historic, cultural, and natural aspects of our national heritage and maintain wherever possible an environment which supports diversity and variety of individual choice;
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The Project's compliance with NEPA is currently in progress and will be concluded by the signing of the FONSI.

6.8 National Historic Preservation Act (NHPA)

NHPA states a policy of preserving, restoring, and maintaining cultural resources and requires that federal agencies take into account the effect any undertaking may have on sites that may be eligible for inclusion on the National Register of Historic Places. The Ohio SHPO has concurred that the Recommended Action would have no effect to any historic properties (see Appendix I). The Ohio SHPO and Federally Recognized Tribes that have been identified to have a cultural relationship to the area will be invited to comment on the draft EA during public review.

6.9 Executive Order 11988 - Floodplain Management

Section 1 of this executive order on floodplain management requires each agency to provide leadership and take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities. The NFS is responsible for acquiring all federal, state, and local permits necessary for construction activities within the floodplain.

6.10 Executive Order 11990 - Protection of Wetlands

The executive order on protection of wetlands directs that federal agencies shall take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands, which may result from such use. Based on the analysis provided in Section 3.3.2.2, the Recommended Action would have no more than negligible impacts on wetlands.

6.11 Executive Order 12898 - Environmental Justice in Minority Populations and Low-Income Populations

This executive order governing environmental justice directs that every federal agency shall make achieving environmental justice part of its mission 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 in the United States. Based on the analysis provided in Section 3.11.2.2, the Recommended Action would not incur disproportionate adverse impacts on minority or low-income populations

6.12 Executive Order 13112 - Invasive Species

This executive order requires Federal agencies to identify actions that may affect the status of invasive species, and not authorize actions that are likely to cause or promote the introduction or spread of invasive species. Section 3.4.2.2. details that disturbed sites will be revegetated with native species following construction to prevent the spread of invasive species which may be able to exploit the environmental disturbance. Thus, the Recommended Action would not cause the presence of or promote the spread of invasive species.

6.13 Executive Order 14008 - Tackling the Climate Crisis at Home and Abroad

EO 14008 directs Federal agencies to develop a climate action plan and implement it into the agency's programs. The USACE developed its own climate action plan in 2020, which details the USACE's commitment to integrate the best available observed and forward-looking climate information into its missions, programs, and management functions, as allowed within relevant authorities. Climate considerations must continue to be an integral element of USACE enterprise-wide resource allocation and operational decision-making processes. Climate considerations of the Recommended Plan are detailed in Section 3.1.2.2.

7.0 Conclusion

The storm sewer collection system of the Village is currently inadequate. The inadequacy of this storm sewer collection results in an increased sanitary sewer flow in the LCWPCD during wet weather events. The LCWPCD is tasked by the Ohio EPA with reducing the amount of storm water entering its sanitary sewer system. The recommended alternative (Alternative 1) would improve the storm sewer collection system's ability to convey stormwater and prevent it from infiltrating the sanitary sewer system. No significant adverse impacts to natural, cultural, or socioeconomic resources have been identified as a result of implementing the proposed storm sewer system improvements.

Construction would take place on previously disturbed land, such as along roads and in other urbanized areas. Effects to noise, air quality, and aesthetics associated with construction would be minor and temporary. In addition to complying with any permit requirements, best management practices would be implemented during construction to minimize impacts to residents and the environment. In light of all the factors considered in this assessment, the recommended alternative would not be expected to have significant impacts on the human environment.

8.0 References

Frankson, R., K. Kunkel, S. Champion, & D. Easterling. 2017. Ohio State Climate Summary. NOAA Technical Report NESDIS 149-OH, 4 pp.

NCSS. 2011. Minster Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/M/MINSTER.html. Accessed 23 July 2021.

NCSS. 2012a. Fulton Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/F/FULTON.html. Accessed 23 July 2021.

NCSS. 2012b. Nappanee Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/N/NAPPANEE.html. Accessed 23 July 2021.

NCSS. 2012c. Latty Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/L/LATTY.html. Accessed 23 July 2021.

NCSS. 2013. Wallkill Series. https://soilseries.sc.egov.usda.gov/OSD_Docs/W/WALLKILL.html. Accessed 23 Jul 2021.

NOAA. 2021. Data Tools: 1981-2010 Normals. https://www.ncdc.noaa.gov/cdo-web/datatools/normals. Accessed 23 July 2021.

ODNR. 2021a. Indian Lake State Park. https://ohiodnr.gov/wps/portal/gov/odnr/go-and-do/plan-a-visit/find-a-property/indian-lake-state-park. Accessed 23 July 2021.

ODNR. 2021b. Ohio Geology Interactive Map. https://ohiodnr.gov/wps/portal/gov/odnr/business-and-industry/services-to-business-industry/gis-mapping-services/ohio-geology-interactive-map. Accessed 23 July 2021.

ODOT. 2022. Logan County: Construction update. https://www.transportation.ohio.gov/about-us/traffic-advisories/district-7/logan-county-construction-update. Accessed 10 May 2022.

Ohio EPA. 2012. Total Maximum Daily Loads for the Great Miami River (upper) Watershed. Final Report, Ohio EPA, Columbus, OH.

Ohio EPA. 2018. Ohio Integrated Water Quality Monitoring and Assessment Report: Interactive Map of Assessment Unit Summaries. https://epa.ohio.gov/dsw/tmdl/OhioIntegratedReport#123145148-2018. Accessed 23 July 2021.

Ohio Public Works Commission. 2020. Clean Ohio Fund – Green Space Conservation Program Acreage Report. https://pwc.ohio.gov/Portals/0/Documents/Green%20Space%20Report%20December%202020%20for%20Web.pdf?ver=vcbU_uviXj69folBspff1A%3D%3D. Accessed 11 May 2022.

Ohio State University. 2017. The Great Miami River's Scaled Inhabitants. https://u.osu.edu/enrfishtax/2017/11/03/the-great-miami-rivers-scaled-inhabitants/. Accessed 2 August 2021.

Russells Point. 2022. Village of Russells Point Homepage. http://www.russellspoint-oh.gov/home.html. Access 10 May 2022.

Schmidt, J. J. 1983. Ground-Water Resources of Logan County. WGWR 39, ODNR, Columbus, OH.

Schumacher, G. A., B. E. Mott, & M. P. Angle. 2013. Ohio's Geology in Core and Outcrop: A Field Guide for Citizens and Environmental and Geotechnical Investigators. Information Circular 63, ODNR, Columbus, OH.

The Highland County Press. 2021. State supports infrastructure projects for 22 Ohio communities. https://highlandcountypress.com/Content/In-The-News/Headlines/Article/State-supports-infrastructure-projects-for-22-Ohio-communities/2/73/71984. Accessed 10 May 2022.

USACE. 2015. Recent US Climate Change and Hydrology Literature Applicable to US Army Corps of Engineers Missions - Ohio Region 05. Civil Works Technical Report, CWTS 2015-05, USACE, Washington, DC.

USACE. 2016. US Army Corps of Engineers Vulnerability Assessment (VA) Tool User Guide. https://maps.crrel.usace.army.mil/pi/rcc/va/docs/VA_User_Guide.pdf. Accessed 20 July 2021.

USACE. 2021a. US Army Corps of Engineers Climate Hydrology Assessment Tool. https://planning.erdc.dren.mil/toolbox/tools.cfm?Id=152&Option=Software. Accessed 20 July 2021.

USACE. 2021b. US Army Corps of Engineers Nonstationarity Detection Tool. https://planning.erdc.dren.mil/toolbox/tools.cfm?Id=152&Option=Software. Accessed 20 July 2021.

US Census Bureau. 2022. Population and Housing Unit Examples. https://www.census.gov/programs-surveys/popest.html. Accessed 9 June 2022.

USDA NRCS. 2021. Web Soil Survey. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed 23 July 2021.

USEPA. 2021. Current Nonattainment Counties for All Criteria Pollutants. https://www3.epa.gov/airquality/greenbook/ancl.html. Accessed 4 April 2022.

USFWS. 2019a. Indiana Bat (Myotis sodalis). https://www.fws.gov/midwest/endangered/mammals/inba/index.html. Accessed 23 July 2021.

USFWS. 2019b. Rayed Bean (Villosa fabalis). https://www.fws.gov/midwest/endangered/clams/rayedbean/rayedbeanfactsheet.html. Accessed 23 July 2021.

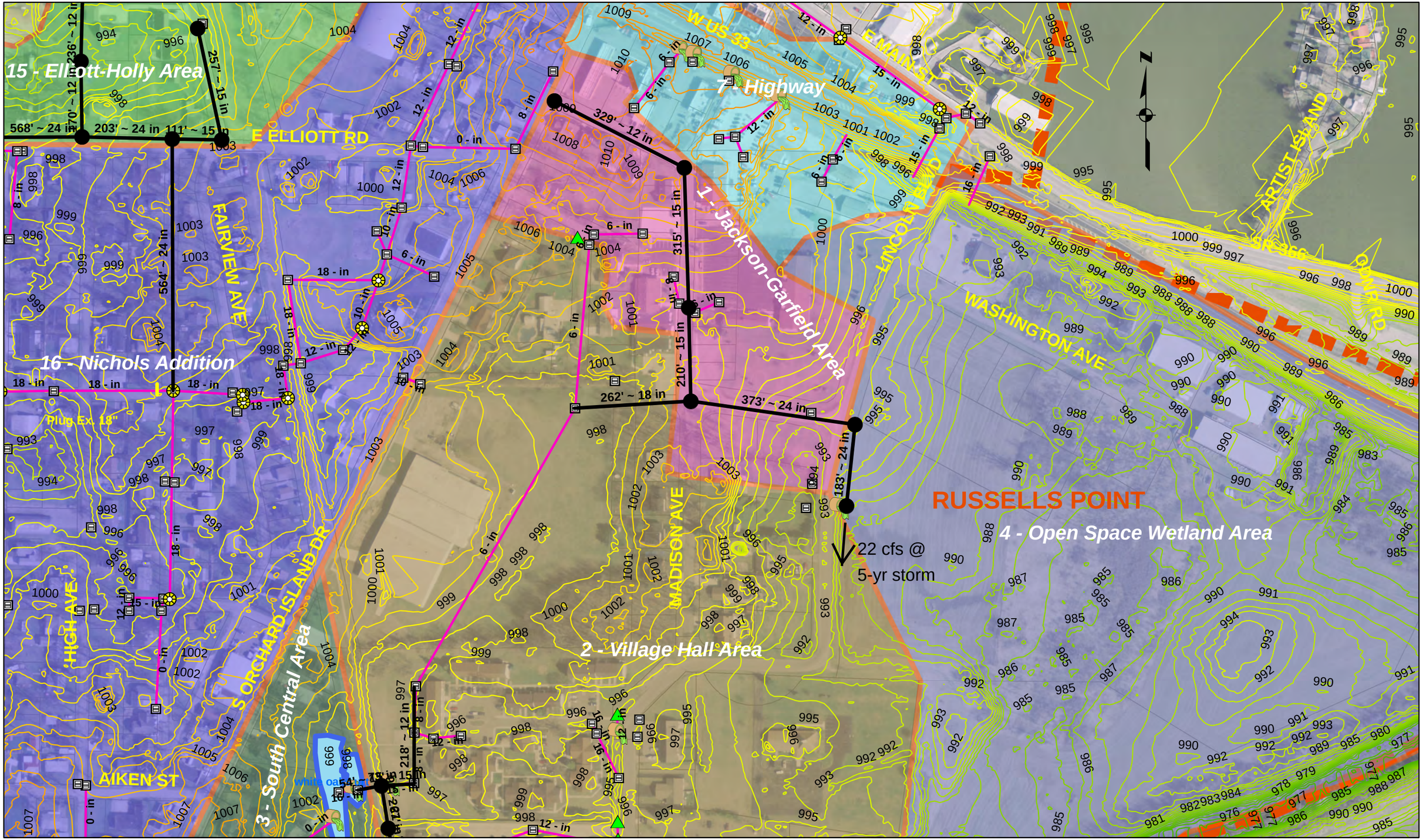
USFWS. 2020a. Eastern Massasauga (Sistrurus catenatus). https://www.fws.gov/midwest/endangered/reptiles/eama/index.html. Accessed 23 July 2021.

USFWS. 2020b. Northern Long-Eared Bat -Eared Bat Myotis septentrionalis. https://www.fws.gov/Midwest/Endangered/mammals/nleb/nlebFactSheet.html. Accessed 23 July 2021.

USFWS. 2022. *Nerodia erythrogaster neglecta*. https://www.fws.gov/species/copperbelly-water-snake-nerodia-erythrogaster-neglecta. Accessed 9 May 2022.

Woods, A. J., J. M. Omernik, C. S. Brockman, T. D. Gerber, W. D. Hosteter, & S. H. Azevedo. 1998. Ecoregions of Indiana and Ohio (2 sided color poster with map, descriptive text, summary tables, and photographs). U.S. Geological Survey, Reston, VA.

Appendix A. Preliminary Engineering Report Maps



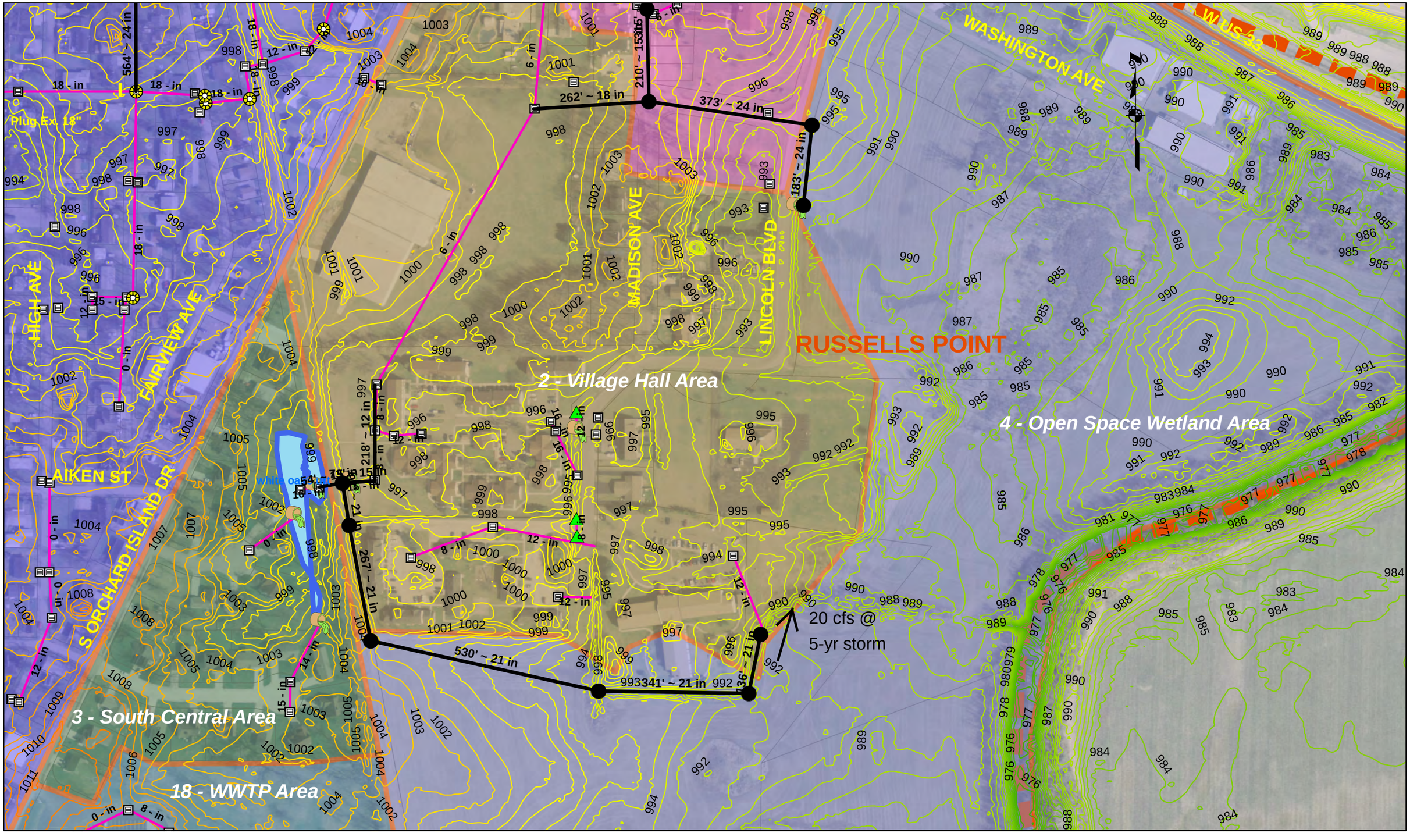
Ex MH
Ex CB
Ex Det Pond
Ex Storm Sewer
Prop Storm MHs
Prop Storm Sewers

0 100 200 400 Feet

Russells Point, OH
Storm Water Master Plan

Figure 1
Proposed Improvements
Jackson-Garfield Area

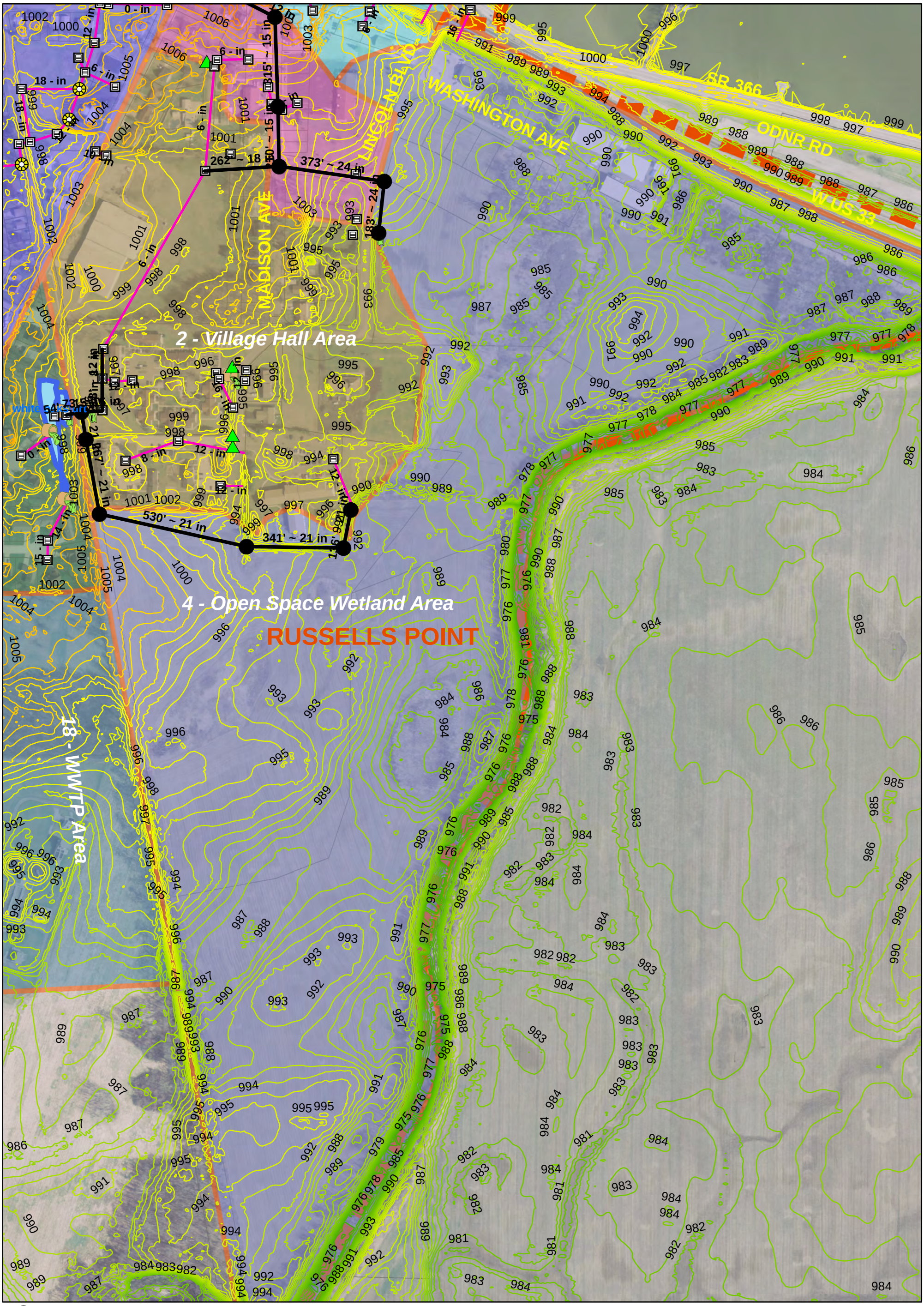
Jones & Henry Engineers, Ltd.
Fluid Thinking™



Russells Point, OH
Storm Water Master Plan

Figure 2
Proposed Improvements
Village Hall and
South Central Areas

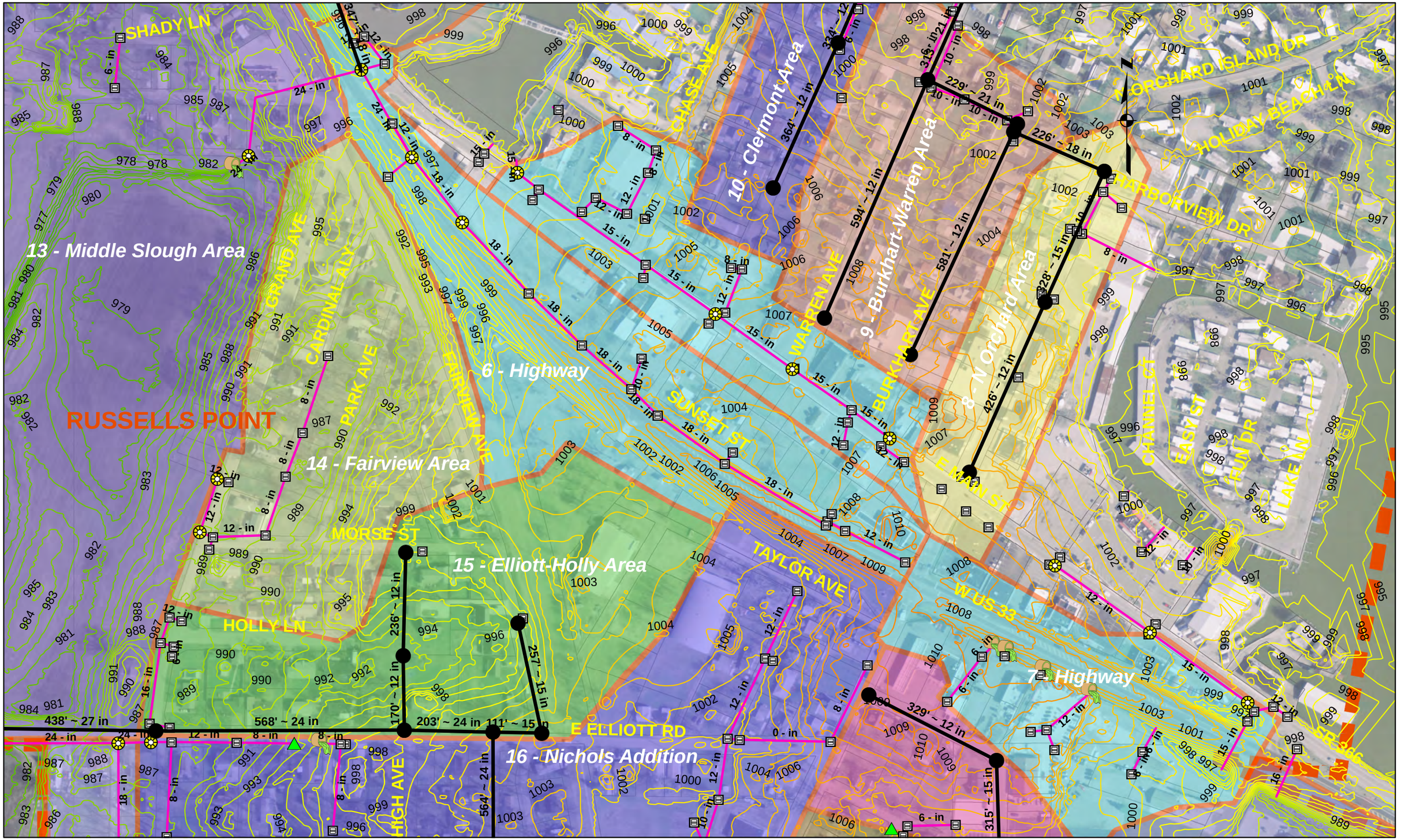
Jones & Henry Engineers, Ltd.
Fluid Thinking™



Russells Point, OH
Storm Water Master Plan

Figure 3
Open Space Wetland Area

Jones & Henry Engineers, Ltd.
Fluid Thinking™



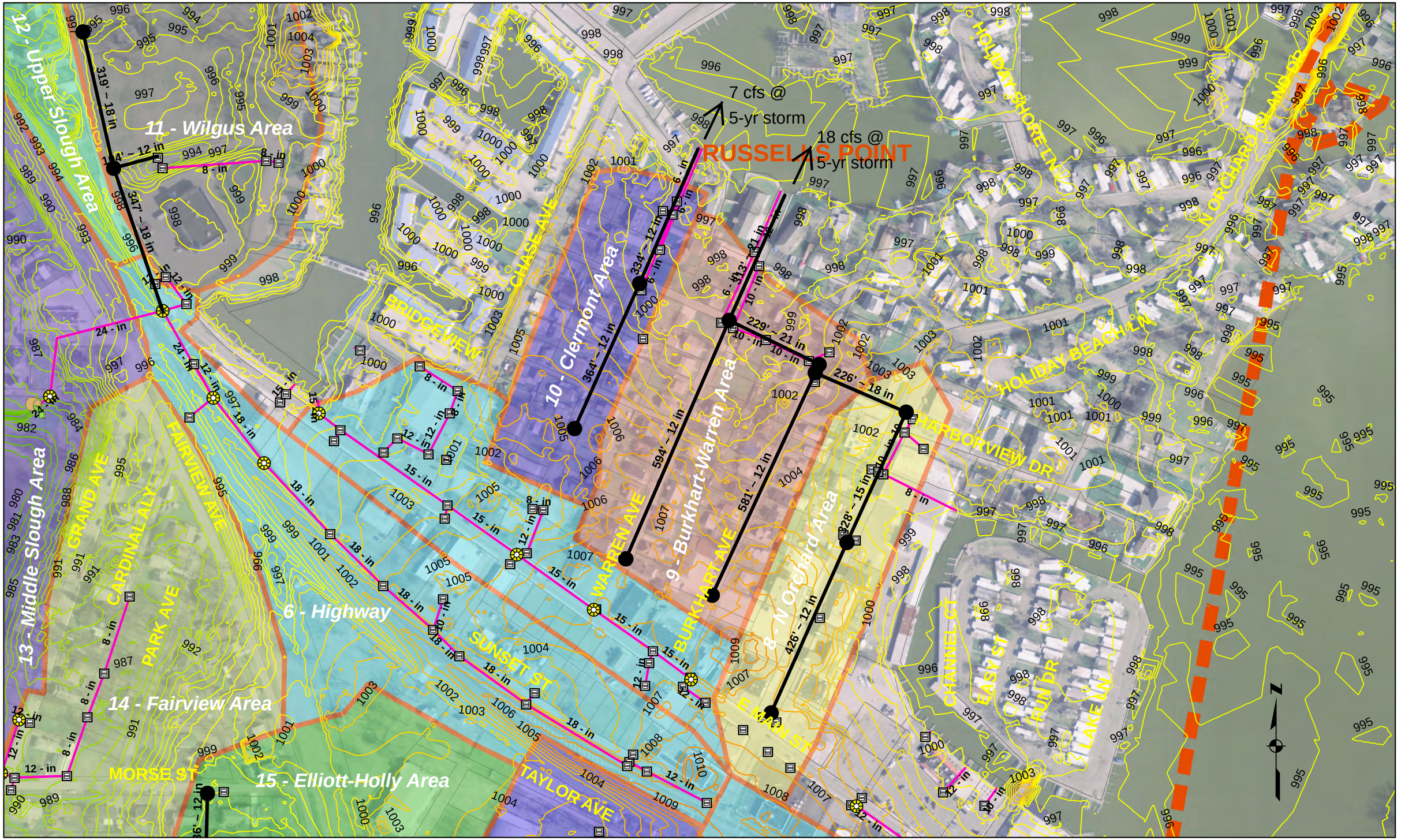
Ex MH
Ex CB
Ex Det Pond
Ex Storm Sewer
Prop Storm MHs
Prop Storm Sewers

0 100 200 400 Feet

Russells Point, OH
Storm Water Master Plan

Figure 4
Highway Areas

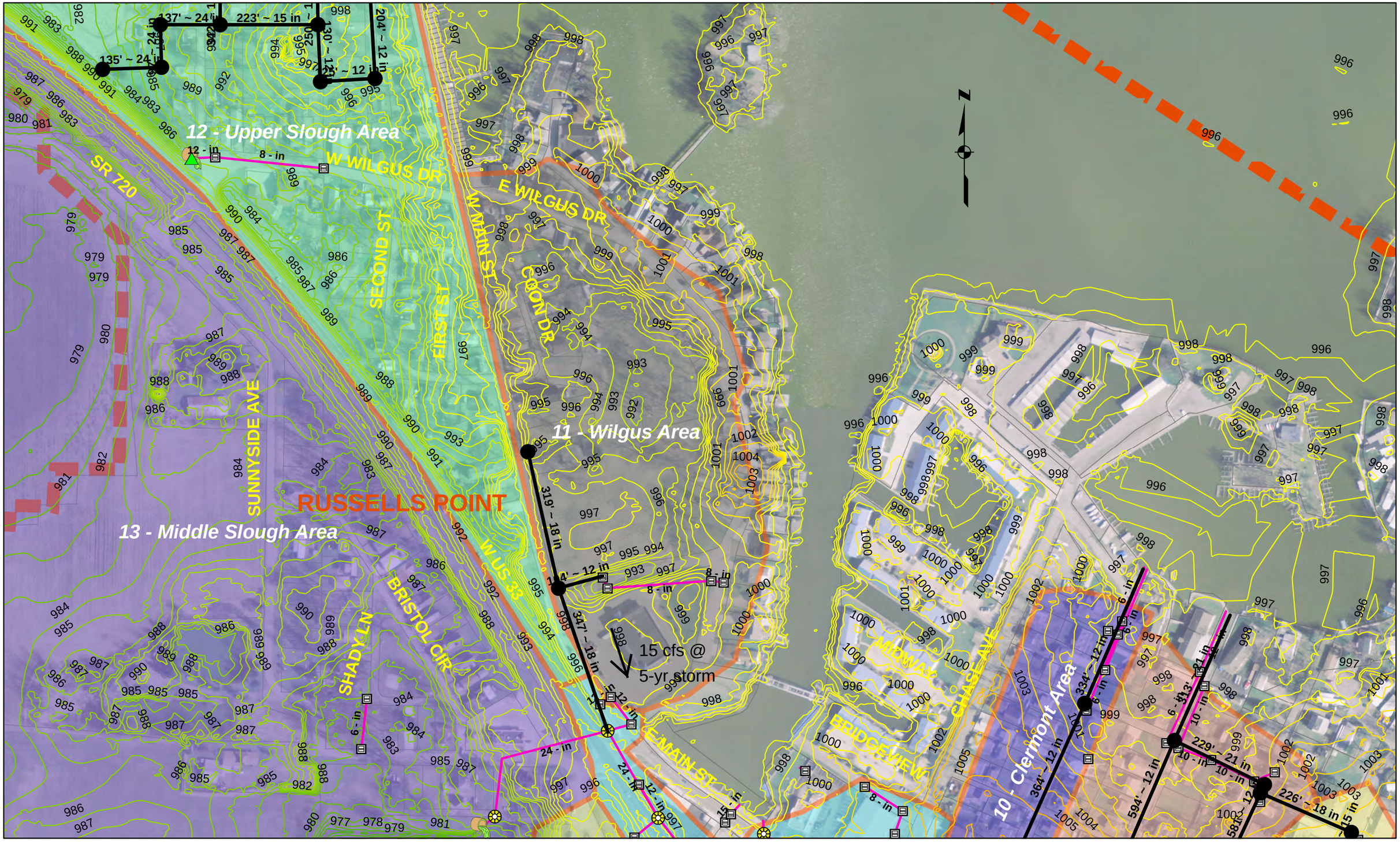
Jones & Henry Engineers, Ltd.
Fluid Thinking™



Russells Point, OH
Storm Water Master Plan

Figure 5
Proposed Improvements
North Orchard, Burkhart-Warren, and Clermont Areas

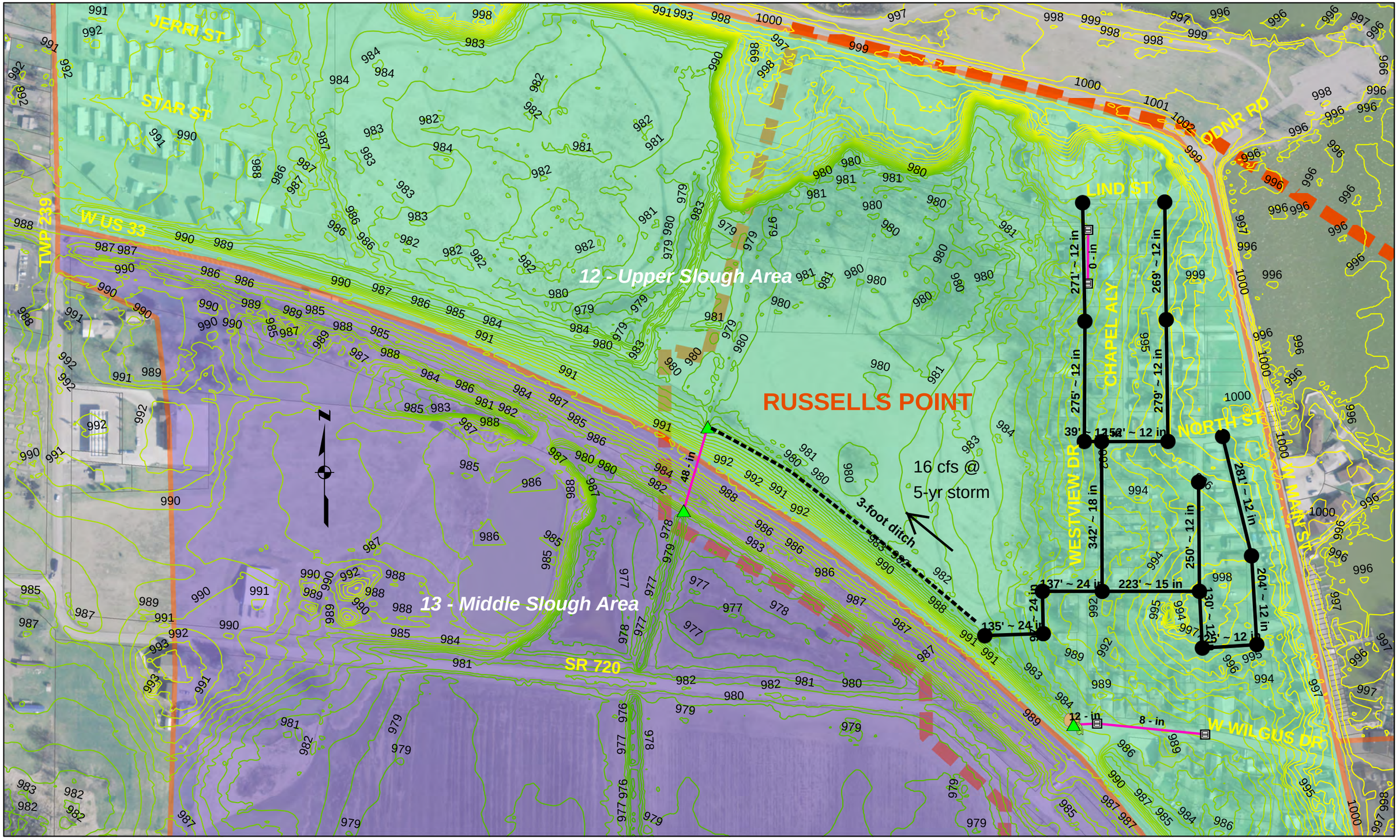
Jones & Henry Engineers, Ltd.
Fluid Thinking™



Russells Point, OH
Storm Water Master Plan

Figure 6
Proposed Improvements
Wilgus Area

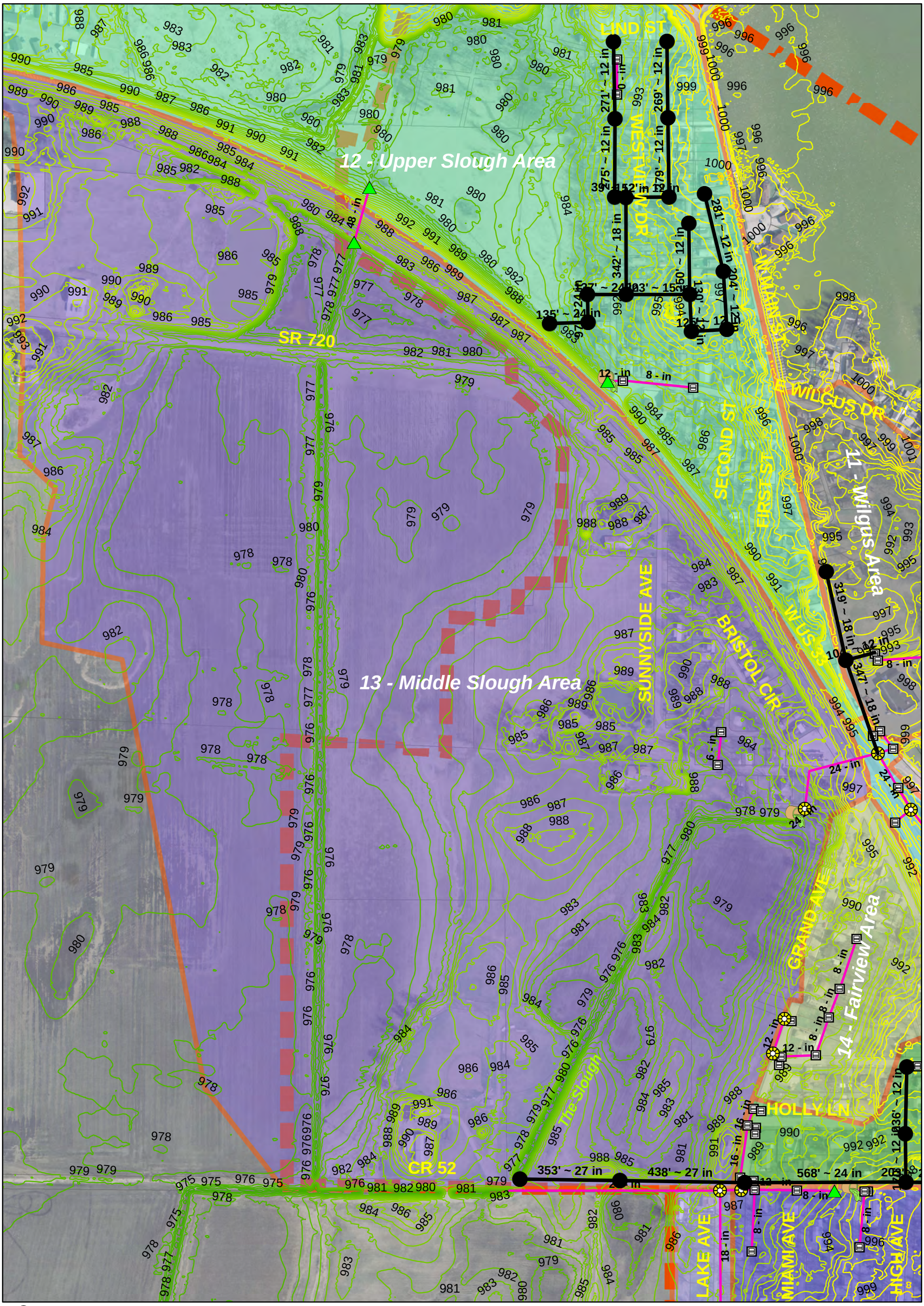
Jones & Henry Engineers, Ltd.
Fluid Thinking™



Russells Point, OH
Storm Water Master Plan

Figure 7
Proposed Improvements
Upper Slough Area

Jones & Henry Engineers, Ltd.
Fluid Thinking™



Russells Point, OH
Storm Water Master Plan

Figure 8
Middle Slough Area

Jones & Henry Engineers, Ltd.
Fluid Thinking™

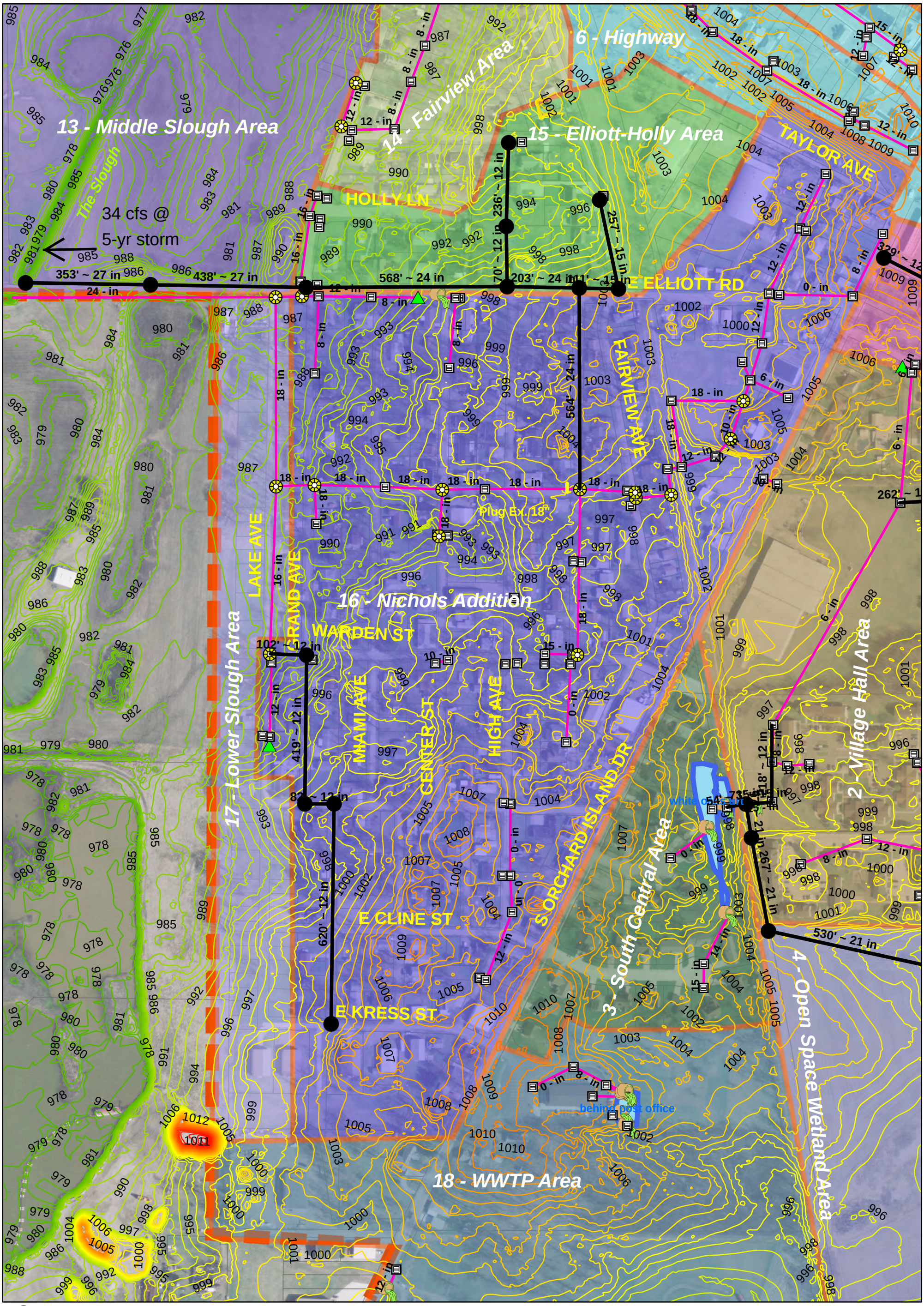
Ex MH
Ex CB
Ex Det Pond
Ex Storm Sewer
Prop Storm MHs
Prop Storm Sewers

0 100 200 400 Feet

Russells Point, OH
Storm Water Master Plan

Figure 9
Proposed Improvements
Fairview and Elliott-Holly Areas

Jones & Henry Engineers, Ltd.
Fluid Thinking™



Ex MH
Ex CB
Ex Det Pond
Ex Storm Sewer
Prop Storm MHs
Prop Storm Sewers

N

Russells Point, OH
Storm Water Master Plan

0 125 250 500 Feet

Figure 10
Lower Slough and
Nichols Addition Areas

Jones & Henry Engineers, Ltd.
Fluid Thinking™

Ex MH
Ex CB
Ex Det Pond
Ex Storm Sewer
Prop Storm MHs
Prop Storm Sewers

N

0 100 200 400 Feet

Russells Point, OH
Storm Water Master Plan

Figure 11
WWTP Area

Jones & Henry Engineers, Ltd.
Fluid Thinking™

Appendix B. Supplemental Climate Documents


Lake Michigan
Lake Huron
Lake Ontario
Lake Erie
WI
MI
NY
PA
OH
IN
IL
MD
KY
WV
VA
MO
TN
NC
SC
GA
AL
MS
Milwaukee
Madison
Chicago
Lansing
Detroit
Columbus
Indianapolis
Ohio Region
Frankfort
Charleston
Nashville
Raleigh
Charlotte
Columbia
Atlanta
Montgomery
Illinois
Ohio
Cumberland
Tennessee
Alabama
Chattahoochee
Savannah
Niagara
Potomac
Dee
N
Legend
River
Interstate Highway
State Highway
Urban Area
Waterbody
HUC 2 Region
State Boundary
0 50 100 150 200
Miles
Ohio Region
(HUC 05)

277 PERCENT CHANGE IN RUNOFF DIVIDED BY PERCENT CHANGE IN PRECIPITATION

USACE CLIMATE PREPAREDNESS AND RESILIENCE

Background

- This indicator is one in a group of vulnerability indicators known as "elasticities," in which the percent change in one variable is divided by the percent change in another variable that causes the change in the first variable.
- This indicator is computed from observations of streamflow and precipitation without relying on the assumptions and caveats needed in a hydrologic model.[1]
- For example, an indicator value of 2 would imply that a 1% increase in monthly precipitation would result in a 2% increase in monthly runoff.
- Higher values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE MEDIAN OF THE DEVIATION OF RUNOFF FROM MONTHLY MEAN TIMES AVERAGE MONTHLY PRECIPITATION, DIVIDED BY THE DEVIATION OF PRECIPITATION FROM MONTHLY MEAN TIMES AVERAGE MONTHLY RUNOFF.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
Coupled Model Intercomparison Project (CMIP-5) output[2]	Local runoff and precipitation within 4-digit hydrologic code (HUC-4) watersheds	HUC-4 watersheds	2035-2064 and 2070-2099

This Indicator Was Used to Assess the Vulnerability of All of USACE's Eight Business Lines

Business Line	Importance Weight (Varies from 1 to 2 for USACE)
Flood Risk	1
Navigation	1.5
Ecosystem Restoration	1.75
Hydropower	1.5
Recreation	1
Water Supply	1.3
Regulatory	1.25
Emergency Management	1.2

Calculation

- Use local runoff and precipitation values from 47 CMIP-5 climate model traces specific to each future wet or dry scenario.[3]
- Calculate yearly precipitation, P_t, and average local runoff, Q_t, for each model trace.
- Calculate the mean annual precipitation, $\bar{P}$, and mean average local runoff, $\bar{Q}$, by averaging the yearly values.
- For each year, calculate the yearly elasticity as: $\left(\frac{Q_t - \bar{Q}}{P_t - \bar{P}}\frac{\bar{P}}{\bar{Q}}\right)$
- Rank the yearly elasticity values for each model trace from low to high, and select the 15th value. This value is a model trace's elasticity estimator.
- Rank climate model traces' elasticity estimator values from low to high, and select the 42nd value.

[1] Sankarasubramanian, A., Vogel, R.M., and J.F. Limbrunner. 2001. Climate Elasticity of Streamflow in the United States. Water Resources Research. 37(6): 1771-1781.
[2] CMIP-5 output is available for download online at: http://gdo-dcp.ucllnl.org/downscaled_cmip_projections/dcpInterface.html
[3] Indicator values were calculated for two scenarios (a wet and a dry future) and two time periods (2035-2064 and 2070-2099).

HIGH INDICATOR VALUE
Small changes in precipitation are likely to result in large changes in runoff at this Texas site.

Brazos River, TX - Courtesy of NWS

568L & 568C

FLOOD MAGNIFICATION FACTOR

USACE CLIMATE PREPAREDNESS AND RESILIENCE

Background

- The flood magnification factor represents how flood flow (i.e., the monthly flow exceeded 10% of the time) is predicted to change in the future.
  - In watersheds with indicator values greater than 1, flood flow is predicted to increase.
  - In watersheds with indicator values less than 1, flood flow is predicted to decrease.
- Increases in flood flow can have adverse effects on species not adapted to such changes. For example, increased flood flow levels can lead to river bed scour, which reduces egg-to-fry survival rates of salmon in the Pacific Northwest.[1]
- Increased flood flow levels may also result in energy spills at hydropower plants, when there is neither sufficient storage capacity nor turbine capacity. Energy spills may be especially prevalent in winter and early spring, when increased flood flow levels may occur.[2]
- Higher values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE CHANGE IN FLOOD RUNOFF, I.E., THE RATIO OF INDICATOR 571L/C (MONTHLY LOCAL OR CUMULATIVE RUNOFF EXCEEDED 10 PERCENT OF THE TIME,) TO 571L/C IN THE BASE PERIOD.

Local vs. Cumulative

- The interpretation of flow-based indicators depends on where the flow originates.
- The vulnerability assessment tool uses two versions of this indicator:
  - Local (568L): Reflects flow generated only within one 4-digit hydrologic code (HUC-4) watershed.
  - Cumulative (568C): Reflects all flow generated within a HUC-4 watershed and any upstream watersheds.

Calculation

- Use local runoff values from 47 CMIP-5 climate model traces specific to each future scenario.[4]
- Calculate the flood runoff for the base period (1950-2004), and a future scenario (2035-2064 or 2070-2099).
  - For indicator 568L, use local flood runoff values (indicator 571L) in the base and future periods.
  - For indicator 568C, use cumulative flood runoff values (indicator 571C) in the base and future periods.
- Divide the future value of flood runoff by the base period value to obtain the flood magnification factor.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
Coupled Model Intercomparison Project (CMIP-5) output[3]	Local runoff within HUC-4 watersheds	HUC-4 watersheds	2035-2064 and 2070-2099

These Indicators Were Used to Assess the Vulnerability of Some of USACE's Eight Business Lines

Indicator	Business Line	Importance Weight (Varies from 1 to 2 for USACE)	Indicator	Business Line	Importance Weight (Varies from 1 to 2 for USACE)
568L	Flood Risk	1.4	568C	Flood Risk	1.8
	Ecosystem Restoration	1		Navigation	2
	Hydropower	1		Ecosystem Restoration	1.5
	Recreation	1		Hydropower	1.4
	Regulatory	1.1		Recreation	1.4
				Regulatory	1.6
				Emergency Management	1.9

[1] Mantua, N., I. Tohver, and A. Hamlet. 2010. Climate Change Impacts on Streamflow Extremes and Summertime Stream Temperature and Their Possible Consequences for Freshwater Salmon Habitat in Washington State. Climatic Change. 102(1-2): 187-223.
[2] Madani, K., and J. R. Lund. 2010. Estimated Impacts of Climate Warming on California's High-Elevation Hydropower. Climatic Change. 102(3-4): 521-538.
[3] CMIP-5 output is available for download online at: http://gdo-dcp.ucllnl.org/downscaled_cmip_projections/dcpInterface.html
[4] Indicator values were calculated for two scenarios (a wet and a dry future) and two time periods (2035-2064 and 2070-2099).

HIGH INDICATOR VALUE

Watersheds with high indicator values may have an increased risk of flooding or damage to property in the future.

The photo shows the 2011 flood of the Souris River in North Dakota, when 500-year flood levels were reached or exceeded.

Minot, ND - Courtesy of USAF

Appendix C. NRCS Soil Maps

Soil Map—Logan County, Ohio
(Russells Point - All Areas)

Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 250 500 1000 1500

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Logan County, Ohio
Survey Area Data: Version 18, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

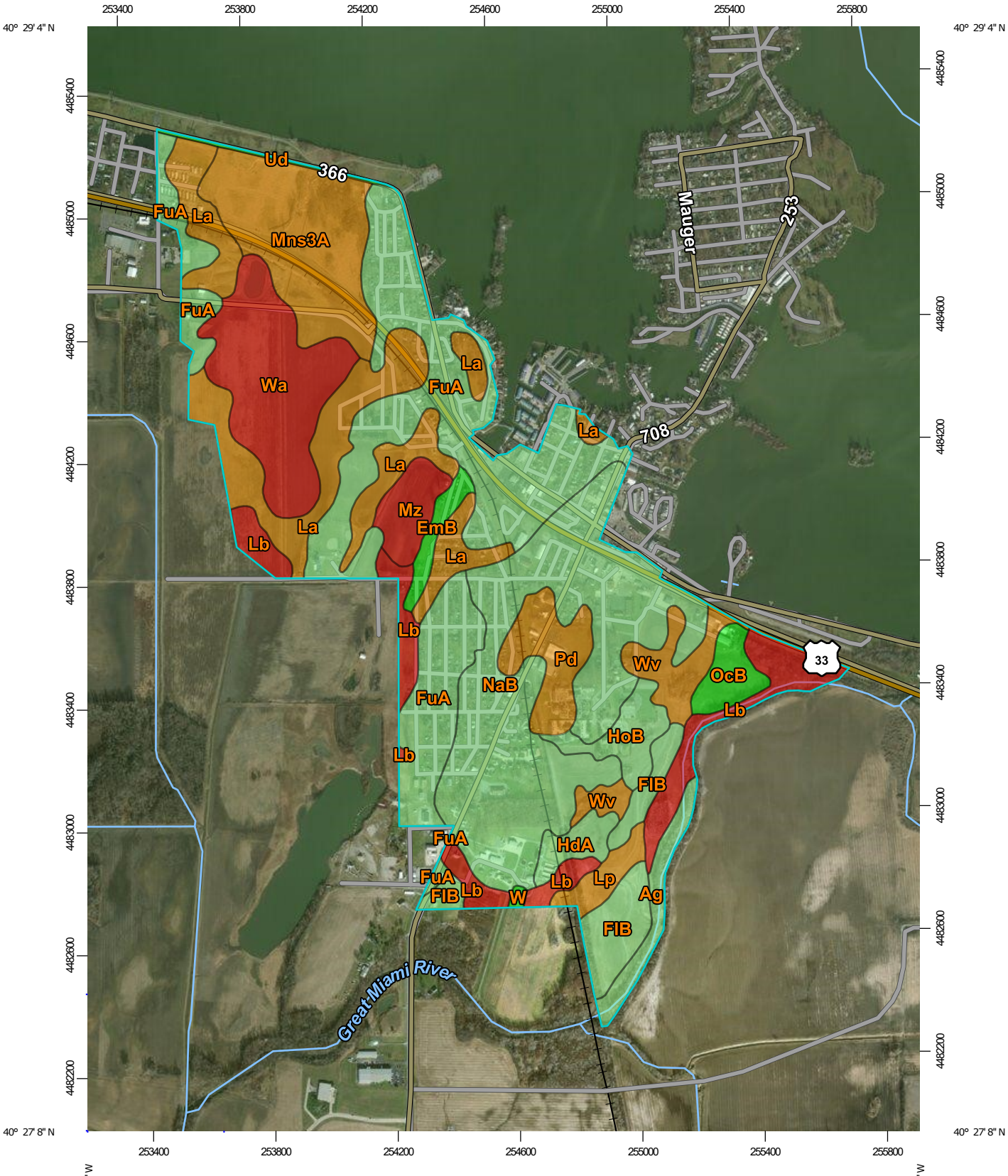
Date(s) aerial images were photographed: Aug 6, 2014—Mar 28, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	11.0	1.7%
EmB	Eldean silt loam, 2 to 6 percent slopes	6.4	1.0%
FlB	Fox loam, till plain, 2 to 6 percent slopes	24.6	3.9%
FuA	Fulton silt loam, 0 to 4 percent slopes	137.1	21.8%
HdA	Haskins loam, 0 to 3 percent slopes	8.1	1.3%
HoB	Homer silt loam, 2 to 6 percent slopes	13.1	2.1%
La	Latty silty clay	77.5	12.3%
Lb	Latty silty clay, occasionally flooded	41.2	6.6%
Lp	Lippincott silty clay loam, 0 to 2 percent slopes	7.9	1.3%
Mns3A	Minster silty clay loam, 0 to 1 percent slopes	56.7	9.0%
Mz	Muskego muck	12.6	2.0%
NaB	Nappanee silt loam, 2 to 6 percent slopes	127.2	20.2%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	10.2	1.6%
Pd	Paulding clay	20.1	3.2%
Ud	Udorthents	1.5	0.2%
W	Water	0.8	0.1%
Wa	Wallkill silt loam	54.1	8.6%
Wv	Wetzel silty clay loam	18.3	2.9%
Totals for Area of Interest		**628.5**	**100.0%**

Hydric Rating by Map Unit—Logan County, Ohio
(Russells Point, OH)



Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 250 500 1000 1500

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Logan County, Ohio
Survey Area Data: Version 18, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 6, 2014—Mar 28, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	10	11.0	1.7%
EmB	Eldean silt loam, 2 to 6 percent slopes	0	6.4	1.0%
FlB	Fox loam, till plain, 2 to 6 percent slopes	4	24.6	3.9%
FuA	Fulton silt loam, 0 to 4 percent slopes	5	137.1	21.8%
HdA	Haskins loam, 0 to 3 percent slopes	8	8.1	1.3%
HoB	Homer silt loam, 2 to 6 percent slopes	5	13.1	2.1%
La	Latty silty clay	90	77.5	12.3%
Lb	Latty silty clay, occasionally flooded	100	41.2	6.6%
Lp	Lippincott silty clay loam, 0 to 2 percent slopes	95	7.9	1.3%
Mns3A	Minster silty clay loam, 0 to 1 percent slopes	94	56.7	9.0%
Mz	Muskego muck	100	12.6	2.0%
NaB	Nappanee silt loam, 2 to 6 percent slopes	5	127.2	20.2%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	0	10.2	1.6%
Pd	Paulding clay	95	20.1	3.2%
Ud	Udorthents	0	1.5	0.2%
W	Water	0	0.8	0.1%
Wa	Wallkill silt loam	100	54.1	8.6%
Wv	Wetzel silty clay loam	95	18.3	2.9%
Totals for Area of Interest			**628.5**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

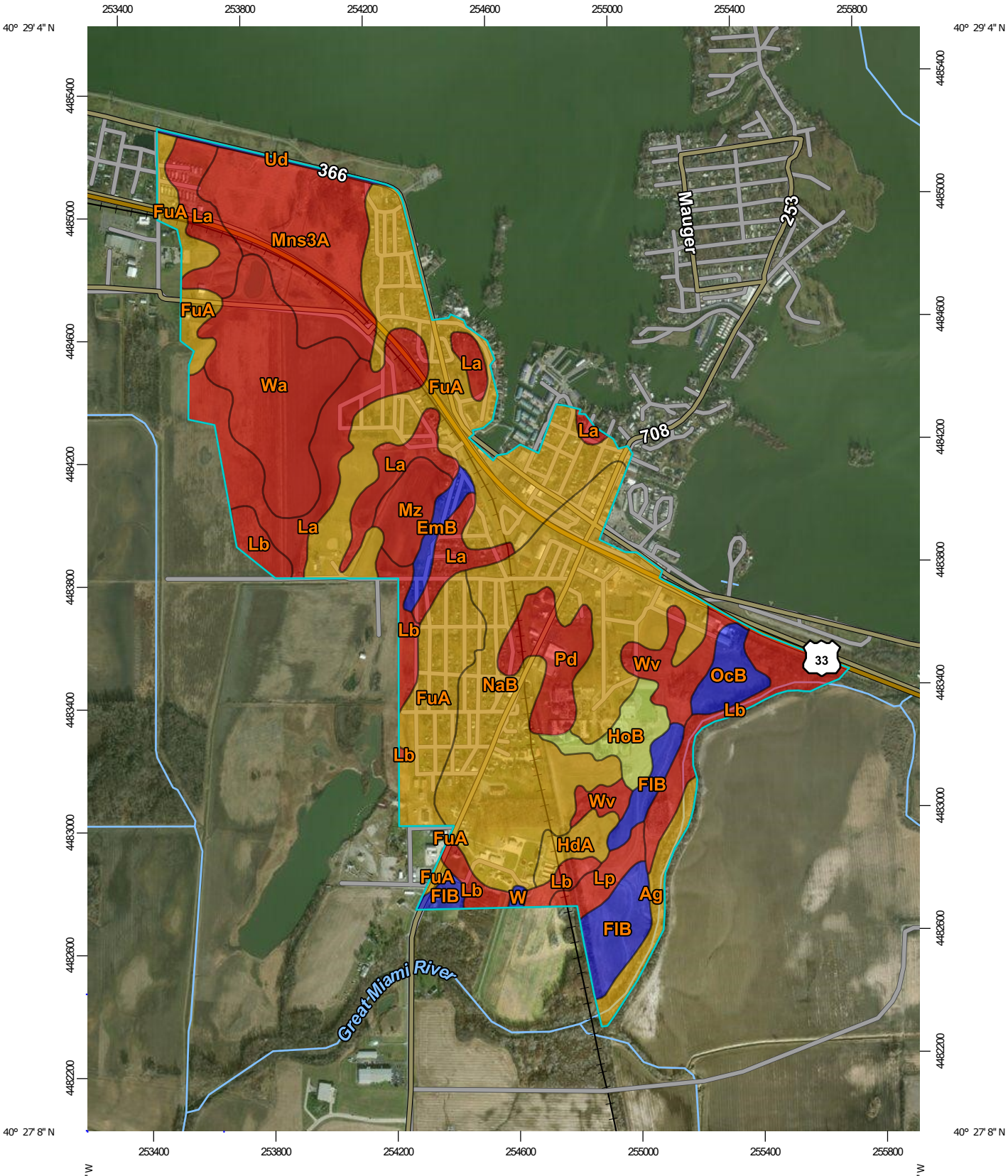
Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Depth to Water Table—Logan County, Ohio
(Russells Point, OH)



Map Scale: 1:17,500 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 250 500 1000 1500

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Lines

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Soil Rating Points

0 - 25

25 - 50

50 - 100

100 - 150

150 - 200

> 200

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Logan County, Ohio
Survey Area Data: Version 18, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 6, 2014—Mar 28, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Depth to Water Table

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Ag	Algiers silt loam	30	11.0	1.7%
EmB	Eldean silt loam, 2 to 6 percent slopes	>200	6.4	1.0%
FlB	Fox loam, till plain, 2 to 6 percent slopes	>200	24.6	3.9%
FuA	Fulton silt loam, 0 to 4 percent slopes	30	137.1	21.8%
HdA	Haskins loam, 0 to 3 percent slopes	30	8.1	1.3%
HoB	Homer silt loam, 2 to 6 percent slopes	61	13.1	2.1%
La	Latty silty clay	7	77.5	12.3%
Lb	Latty silty clay, occasionally flooded	7	41.2	6.6%
Lp	Lippincott silty clay loam, 0 to 2 percent slopes	8	7.9	1.3%
Mns3A	Minster silty clay loam, 0 to 1 percent slopes	15	56.7	9.0%
Mz	Muskego muck	15	12.6	2.0%
NaB	Nappanee silt loam, 2 to 6 percent slopes	46	127.2	20.2%
OcB	Ockley silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	>200	10.2	1.6%
Pd	Paulding clay	7	20.1	3.2%
Ud	Udorthents	>200	1.5	0.2%
W	Water	>200	0.8	0.1%
Wa	Wallkill silt loam	7	54.1	8.6%
Wv	Wetzel silty clay loam	8	18.3	2.9%
Totals for Area of Interest			**628.5**	**100.0%**

Description

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Interpret Nulls as Zero: No

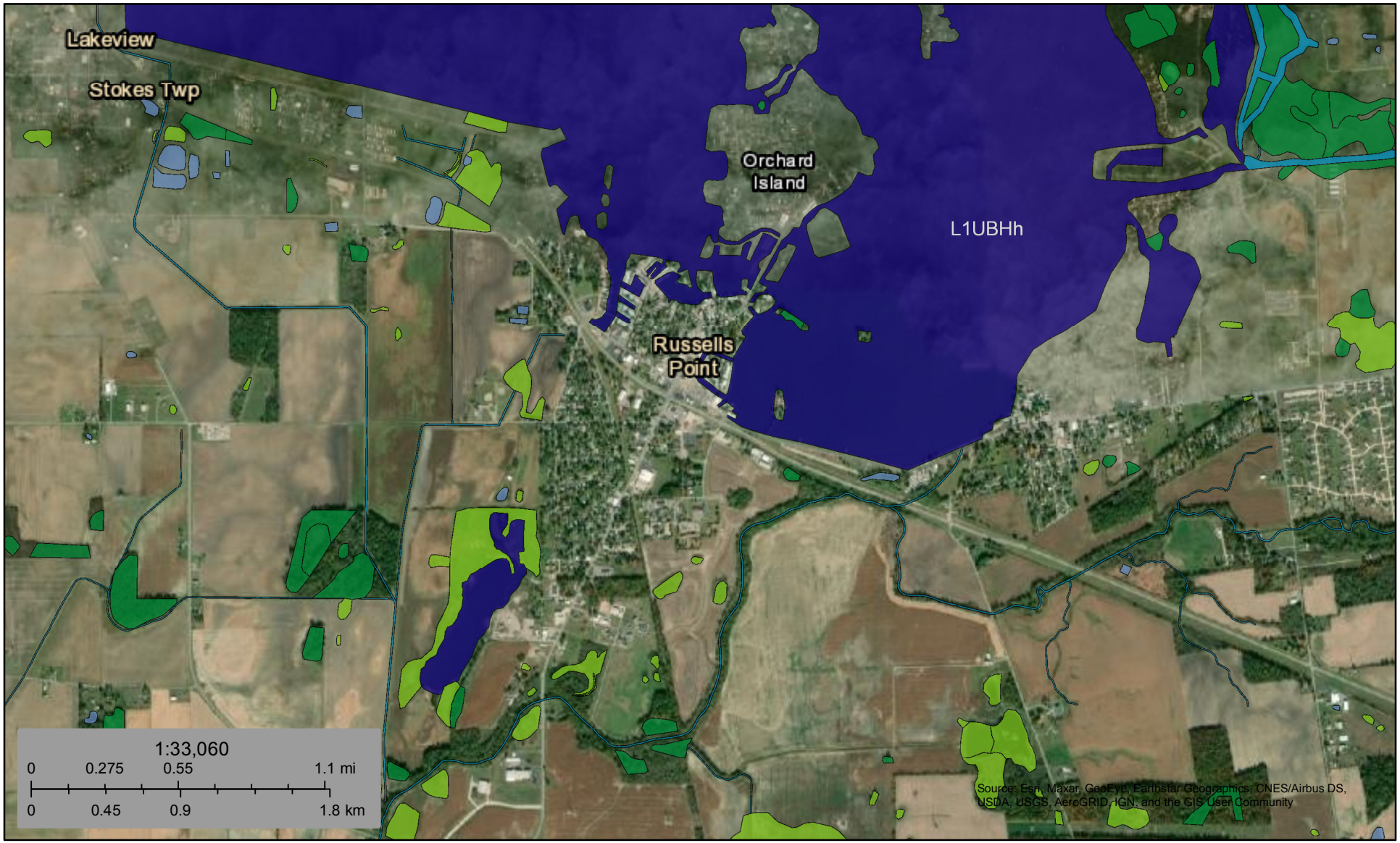
Beginning Month: January

Ending Month: December

Appendix D. NWI Wetlands Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Russells Point - Wetlands Map



November 18, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Appendix E. Hazardous, Toxic, and Radioactive Waste Investigation – Main Report

HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW) INVESTIGATION

OF THE:
RUSSELLS POINT STORM SEWER IMPROVEMENTS
RUSSELLS POINT, OHIO 43348

PREPARED FOR:
VILLAGE OF RUSSELLS POINT
433 STATE ROUTE 708
RUSSELLS POINT, OH 43348

PREPARED BY:
HULL & ASSOCIATES, LLC
4770 DUKE DRIVE, SUITE 207
MASON, OH 45040

OCTOBER 2021

HULL
Environment / Energy / Infrastructure

TABLE OF CONTENTS

PAGE

TABLE OF CONTENTS (CONT.)

PAGE

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

The purpose of this report is to discuss the hazardous, toxic, and radioactive waste (HTRW) assessments for the proposed project areas identified in the *Preliminary Engineering Report – Russells Point Storm Sewer Improvements Study* dated October 12, 2020, prepared by Choice One Engineering. This HTRW investigation identifies both HTRW and non-HTRW environmental issues and presents appropriate measures to resolve these issues. The methods used in performing the investigation are described in detail. Conclusions and recommendations regarding potential impacts due to HTRW and non-HTRW issues associated with project sites are provided.

2.0 AUTHORITY

Engineer Regulation (ER) 1165-2-132, Hazardous, Toxic, and Radioactive Waste (HTRW) Guidance for Civil Works projects, dated June 26, 1992, provides guidance for consideration of HTRW issues and problems within project boundaries or which may affect/be affected by Corps Civil Works projects. The ER states the Corps policy for addressing HTRW issues and outlines the timing and cost sharing requirements for HTRW encountered during the standard Civil Works project phases. Goals of the ER are to identify the level of detail for HTRW investigation for each phase of a civil works project, promote early detection and response by appropriate responsible parties, determine viable options to avoid HTRW problems, and establish a mechanism for resolution of HTRW issues. The Corps policy provides the following:

- Civil works funds are not used for HTRW related activities except as specifically stated in the policy or provided for specifically in law (see paragraph 6a, ER 1165-2-132).
- Construction of civil works projects should be avoided in HTRW contaminated areas, where practicable. The Corps and project sponsor will cost share environmental investigations to identify existence of HTRW (see paragraph 6b, ER 1165-2-132).
- If not practicable to avoid HTRW for a project, the sponsor is responsible for ensuring that development and execution of HTRW response actions are accomplished at 100% sponsor provided cost. The sponsor is responsible for all costs associated with the required response of any known or unknown HTRW contamination existing at the project throughout all project phases. The sponsor is also 100% responsible for all costs associated with the required response plan and for ensuring that response actions are accomplished in accordance with federal, state and local environmental laws. No in-kind project cost credit will be given to the sponsor for these activities.

ER 1165-2-132 requires that a site investigation be conducted as early as possibly to identify and evaluate potential HTRW problems. According to ER 1165-2-132, non-HTRW issues that do not comply with the federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW issues. This HTRW investigation was conducted during the feasibility phase of the project. In general, HTRW Phase I ESAs should rely on existing information, observations made through database research, aerial photographs, topographic maps, historical document review (if available), a site visit, and information provided by the local sponsor.

As stated in the ER-1165-2-132 an initial assessment as appropriate for Reconnaissance Study should be conducted as a first priority for projects with no prior HTRW consideration. If the initial assessment indicated the potential for HTRW, testing, as warranted, and analysis similar to a Feasibility Study, or Phase II Environmental Site Assessment (ESA), should be conducted prior to proceeding with the project design.

3.0 DEFINITIONS

3.1 Hazardous, Toxic, and Radioactive Waste

The objective of ER 1165-2-132 is to outline procedures to facilitate early identification and appropriate consideration of HTRW. This investigation, therefore, identifies potential HTRW and discusses resolutions and/or provides recommendations regarding the HTRW identified. Except for dredged material and sediments beneath navigable waters proposed for dredging, for purposes of this guidance, HTRW includes any material listed as a "hazardous substance" under the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq (CERCLA), (See 42 U.S.C. 9601(14). Hazardous substances regulated under CERCLA include "hazardous wastes" under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; "hazardous substances" identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, "toxic pollutants" designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, "hazardous air pollutants" designated under Section 112 of the Clean Air Act, 42 U.S.C. 7412; and "imminently hazardous chemical substances or mixtures" on which EPA has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. (See 42 U.S.C. 9601(14).)

3.2 Non-Hazardous, Toxic, and Radioactive Waste

According to ER 1165-2-132, non-HTRW environmental issues that do not comply with federal, state, and local regulations should be discussed in the HTRW investigation along with HTRW. For example, solid waste is a non-HTRW issue considered. Petroleum releases from Leaking Underground Storage Tanks (LUSTs) are not considered HTRW but are regulated. These sites have the potential to impose environmental hazards. Non-HTRW issues identified during the investigation are also discussed in this report, along with resolutions and/or recommendations for resolution.

3.3 Recognized Environmental Condition (REC)

For the purposes of this investigation, the term REC may be used interchangeably with HTRW to identify a potential HTRW or non-HTRW environmental issue. ASTM defines a recognized environmental condition (REC) as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions.

4.0 GUIDANCE

Supplemental guidance was provided by the Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process (Designation: E 1527-13) prepared by the American Society for Testing of Materials (ASTM). The purpose of this guidance is to define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) and petroleum products. These standards recommend that an environmental assessment include a records review, site visit, interviews, and report preparation.

5.0 LAWS AND REGULATIONS

5.1 Federal

The definition of HTRW according to ER 1165-2-132, page 1, paragraph 4(a) is as follows: "Except for dredged material and sediments beneath navigable waters proposed for dredging, for purposes of this guidance, HTRW includes any material listed as 'hazardous substance' under the Comprehensives Environmental Response, Compensation and Liability Act, 42 U.S.C. 9601 et seq (CERCLA). (See 42 U.S.C. 9601(14).) Hazardous substances regulated under CERCLA include 'hazardous wastes' under Sec. 3001 of the Resource Conservation and Recovery Act, 42 U.S.C. 6921 et seq; 'hazardous substances' identified under Section 311 of the Clean Air Act, 33 U.S.C. 1321, 'toxic pollutants' designated under Section 307 of the Clean Water Act, 33 U.S.C. 1317, 'hazardous air pollutants' designated under Section 112 of the Clean Air Act 42 U.S.C. 7412; and 'imminently hazardous chemical substances or mixtures' on which EPA has taken action under Section 7 of the Toxic Substance Control Act, 15 U.S.C. 2606; these do not include petroleum or natural gas unless already included in the above categories. (See 42 U.S.C. 9601(14).)"

As noted in 42 U.S.C. 9601(14), the term "hazardous substance" does not include crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance, nor does the term include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel. Underground storage tanks (USTs) are federally regulated under 40 CFR Part 280, which includes technical standards and corrective action requirements for owners and operators of USTs.

5.2 State

The State of Ohio regulations were examined to determine which regulations governed the state specific hazardous waste disposal, release, and cleanup requirements. The Ohio EPA Division of Environmental Response and Revitalization (DERR)'s hazardous waste regulations are located in Ohio Revised Code (ORC) Chapter 3734 and Ohio Administrative Code (OAC) Chapters 3745-50 through 57, 65 through 69, 205, 256, 266, 270, 273 and 279. The State of Ohio defines hazardous waste in rule 3745-51-03 of the Administrative Code.

Underground storage tank (UST) closure, corrective action (CA), and petroleum contaminated soil (PCS) processes are documented in the Ohio Department of Commerce State Fire Marshal Bureau of Underground Storage Tank Regulations (BUSTR) rules, as stated in Ohio Administrative Code (OAC) 1301:7-9-12, OAC 1301:7-9-13, OAC 1301:7-9-16, and OAC 1301:7-9-17, effective date September 1, 2017.

OAC 1301:7-9-02 includes definitions that are applicable for the previously mentioned BUSTR rules. BUSTR also published a Technical Guidance Manual (TGM) to clarify the regulations, to provide examples of how

BUSTR interprets certain parts of the regulations, and to assist the owner/operators in complying with those regulations.

- OAC 1301:7-9-12 includes rules that address out-of-service (OOS), closure-in-place, permanent removal, and change-in-service for USTs. Collectively, these activities are known as the closure rule.

- OAC 1301:7-9-13 includes rules that address the investigation of releases and suspected petroleum releases from UST systems and the required corrective actions for clean-up of a release to the appropriate levels.

- OAC 1301:7-9-16 and 17 include rules that address sampling and management of PCS.

6.0 STUDY DESCRIPTION

The Village of Russells Point is experiencing surface flooding problems due to the inadequate storm sewer collection system. The system is undersized and at the end of its useful life. The lack of adequate storm sewer collection results in higher sanitary sewer flow in the Logan County Water Pollution Control District (LCWPCD) during wet weather events. The primary goal of the project is to reduce localized surface flooding due to inadequate storm drainage.

The study area is located entirely within the Village of Russells Point in Logan County, Ohio and is presented graphically in Figure 1. The Village is located at the south end of Indian Lake, just west of the spillway where the lake discharges into the Great Miami River. The river forms the eastern and southern boundary of the Village. State Route (SR) 366 is located along the south edge of the lake and forms a dike that sits at a higher elevation than the neighboring ground to the south and the lake's normal pool elevation to the north. Most of the Village is located south of SR 366, but a small portion of the Village lies north of SR 366, including several "islands" in the lake. The Village is primarily a residential area, with some commercial development located along SR 366, U.S. Route 33, and SR 708.

7.0 PROJECT DESCRIPTION

According to the Preliminary Engineering Report, there are several areas within the Village that experience ponding and minor flooding due to local runoff. This includes areas of street flooding and flooding of private property after almost any significant rainfall of a few tenths of an inch or more. Drainage improvements consisting of storm sewers and drainage swales have been constructed within the Village, but the existing system is inadequate in many areas to convey the local runoff away from the developed areas to the available lake or stream outlets. The Village is seeking to develop a plan to address these issues through the proposed project.

8.0 GENERAL METHODS

The information used to complete this limited HTRW Phase I ESA was obtained from a review of existing information, a review of historical maps and drawings, a limited interview process, a physical inspection of the study area, and a database search. This information was used to determine the scope and scale of RECs that may exist in the surrounding areas, and if RECs will have an impact on the implementation of the United States Army Corps of Engineers (USACE) project.

9.0 ENVIRONMENTAL RECORDS REVIEW

9.1 Federal, State and Tribal Environmental Records

A search of available environmental records was conducted utilizing Environmental Database Resources, Inc. (EDR). Federal and state databases were searched using the minimum search distances issued from the study area as required in the ASTM E 1527-13 guidelines (Table 1).

Table 1
Minimum Search Distance for Federal and State Databases

Database	Approximate Minimum Search Distance (mi)
Federal NPL Site List	1.0
Federal CERCLIS List	0.5
Federal CERCLIS NFRAP site list	Property and Adjoining Properties
Federal RCRA CORRACTS Facilities List	1.0
Federal RCRA non-CORRACTS TSD Facilities List	0.5
Federal RCRA Generators List	Property and Adjoining Properties
Federal ERNS List	Property
State Equivalent NPL	1.0
State Equivalent CERCLIS	0.5
State Landfill/Solid Waste Disposal Site Lists	0.5
State LUST Lists	0.5
State registered UST List	Property and Adjoining Properties

A summary of EDR database listings for the study area focusing on facilities that were identified within and adjacent to the study area is provided in Tables 2 and 3. A copy of the report by EDR is included in Appendix A.

Table 2
Site EDR Summary

Site	Databases	Regulatory Status
337 E Main Street Kronenberger Reality Gulf Oil Company	LUST, UST, Archive UST, RGA LUST	The facility was identified as a leaking underground storage tank (LUST)/UST facility under release number 46000988-N00001. Three (3) 1000-gallon gasoline USTs were closed-by-removal in February 1998. No further action (NFA) status was issued by BUSTR in July 2003. There are no USTs currently-in-use at the facility.
337 E Main Street Duffy's Cleaners Inc.	EDR Historical Cleaner	Location listed under *Dry-cleaning Plants, Except Rugs* from 2004-2008. **This listing represents a potential environmental concern, due to its proximity to proposed improvements.**

Table 2 Site EDR Summary		
Site	**Databases**	**Regulatory Status**
1015 S Orchard Island Road Indian Lake Water Pollution Control District Logan County Commissioner	LUST, UST, ARCHIVE UST, RGA LUST	The facility was identified in the LUST/UST database under release numbers 46006033-N00001 and N00002. One (1) 2,000-gallon diesel fuel UST was closed-by-removal in September 1998. NFA status was issued by BUSTR in November 1998. One (1) 2000-gallon diesel fuel UST was closed-by-removal in January 2016. NFA status was issued by BUSTR in March 2016. One (1) UST of unknown content is listed by EDR as currently-in-use at the Site. However, this listing appears to be in error as no regulatory agencies have any current USTs on record for the facility.
	SPILLS	The facility was listed in the SPILLS database for an unknown amount of mercury spilled from a manometer in February 2005.
	FINDS	Facility Index System (FINDS) is a central and common inventory of facilities monitored or regulated by the EPA, with cross-references to the program office data bases that have additional programmatic information about the facility. This listing is due to the facility being identified in UST, LUST and SPILLS databases and does not appear to represent an environmental concern.
	NPDES	Facility NPDES permit 1GRN0795*BG. NPDES permit issued May 2017. This listing does not appear to represent an environmental concern.
173 N Orchard Island Road Mallory's Mufflers/ Mallory's Sohio	EDR Historical Auto	The facility was listed as a Gasoline Service Station from 1972-1988.
	LUST, UST, ARCHIVE UST	The facility was identified in the LUST/UST database under release number 46009855-N00001. One (1) 8,000-gallon UST of unknown content was closed-by-removal in September 1998. NFA status was issued by BUSTR in January 1999. The UST information provided by EDR is not consistent with the information provided by BUSTR. No USTs are currently-in-use at the facility.
433 State Route 708 Village of Russells Point	LUST, UST, ARCHIVE LUST, RGA LUST	The facility was identified in the LUST/UST database under release number 46009982-N00001. In August 2004 a possible incident was reported. Responsible party is non-viable. Two (2) 550-gallon new oil and one (1) 1000-gallon used oil UST were closed in June 2007. No USTs are currently-in-use at the facility.

Table 2 Site EDR Summary		
Site	**Databases**	**Regulatory Status**
209 State Route 708 AmeriStop Express #721 Village Pantry #2721 Indian Lake Plaza	LUST, UST, ARCHIVE UST, RGA LUST	The facility was identified in the LUST/UST database under release number 46000009-N00001. Three (3) 10,000-gallon gasoline, one (1) 2,000-gallon diesel fuel, and one (1) 2,000-gallon kerosene UST were closed-by-removal in October 1993. Two (2) 8,000-gallon gasoline, one (1) 2,500-gallon kerosene, one (1) 10,000-gallon gasoline and one (1) 2,500-gallon diesel fuel UST were installed at the facility in October 1993 and are currently-in-use. According to EDR, a Tier 1 Investigation report was submitted to BUSTR in December 2020 in response to release 46000009-N00001.
209 State Route 708 Gillespie Oil Co Inc. AFM 721 Inc	RCRA- Very Small Quantity Generator (VSQG)	EPA ID OH0000042366. The facility was listed as a conditionally exempt small quantity generator of D018 (benzene) in 1993. No outstanding violations were identified. This listing does not appear to represent an environmental concern.
	FINDS	This listing is related to the facility being identified in the RCRA database and does not appear to represent an environmental concern.
	EDR Historical Auto	Listed as a Gasoline Service Station, NEC from 2007-2012.
120 W Main Street Rite Aid #2305	RCRA-VSQG	US EPA ID OHR000173377. The facility generates the following waste codes, related to pharmaceuticals: D001, D002, D005, D006, D007, D008, D009, D010, D011, D013, D016, D018, D024, D026, D027, D035, P001, P042, P075, P081, U002, U035, U044, U058, U072, U122, U129, U154, U165, U205, U211, U240 and U279. No violations reported. This listing does not appear to represent an environmental concern.
	FINDS, ECHO	These listings are related to the facility being identified in the RCRA database and do not appear to represent an environmental concern.

Adjacent properties to the north, east, and south were identified by EDR in the LUST, UST, and AST databases. Further details on these listings and regulatory status are provided in the following table:

Table 3 Adjacent Site EDR Summary			
Adjacent Site	**Direction**	**Databases**	**Regulatory Status**
9481 State Route 708 Spend-a-Day Marina	Northeast	LUST, UST, ARCHIVE UST	The facility was identified in the LUST/UST database under release number 46008413-N00001, N00002, and N00003. One (1) 550-gallon gasoline, one (1) 500-gallon gasoline, and one (1) 300-gallon used oil UST were closed-by-removal in June 1994. One (1) 1,000-gallon gasoline and one (1) 2,000-gallon gasoline UST

Table 3 Adjacent Site EDR Summary			
Adjacent Site	**Direction**	**Databases**	**Regulatory Status**
			were closed-by-removal in November 1996. NFA status was issued by BUSTR for all three releases. One (1) 7,000-gallon gasoline, one (1) 3,000-gallon gasoline, and one (1) 6,000-gallon gasoline UST were installed at the facility in February 1997 and are currently-in-use. Secondary containment is installed, as well as a leak detection system.
164 N Orchard Island Road Schuler Marina Inc	East	LUST, UST	The facility was identified in the LUST/UST database under release number 46002415-N00001. Three (3) 1,000-gallon gasoline USTs were closed-by-removal in December 1994. NFA status was issued by BUSTR in April 1994.
8100 State Route 708 Indian Lake WWTP	South	AST	Permit Number 62.46.0126 related to one (1) 1,600-gallon diesel sub-base generator AST. Permit closed out. No releases were identified in connection with the AST. This listing does not appear to represent an environmental concern.

9.2 Freedom of Information Act (FOIA) Requests

9.2.1 U. S. Environmental Protection Agency

The U.S. Environmental Protection Agency (USEPA) EnviroMapper for Envirofacts (https://www3.epa.gov/enviro/) online web-based application was used to obtain information on regulated facilities that may be located within and adjacent to the study area not included in the EDR Report. The database search revealed information for two (2) facilities within the study area.

Location	Distance/ Direction	Details	Status
Indian Lake WPCF 8100 State Route 708	On-site	Facility ID OH0036641 NPDES permit. Last inspection November 2019. Numerous exceedances for E.coli, Nitrogen Ammonia Total, Dissolved Oxygen and Total Dissolved Solids based on reporting data in 2019, 2020, and 2021. This does not appear to represent an environmental concern.	Violations identified, no formal enforcement actions
Rite Aid #2305 120 W Main Street	On-site	Facility ID OHR000173377. Active Very Small Quantity Generator (VSQG), related to pharmaceuticals. This does not appear to represent an environmental concern.	In compliance

9.2.2 Ohio Environmental Protection Agency (EPA) Central and District Offices

A response has not yet been received from the Ohio EPA Central Office. The Southwest District Office provided records related to the NPDES permitting for the Indian Lake Water Pollution Control District (WPCD) at 8100 State Route 708 and Indian Lake SSD located at 1015 Orchard Island Road South. Spills

reports were also provided. A search of the Ohio EPA eDocuments (eDocs) online database revealed sixty-two (62) files for facilities identified by EDR within and adjacent to the study area.

Location	Distance/ Direction	Details	Status
Indian Lake WPCF/WPCD/SSD 8100 State Route 708 1015 Orchard Island Road South	On-site	NPDES permit 1PK00002: Various NPDES reports from 1996 through May 2021. This does not appear to represent an environmental concern.	Violations identified, no formal enforcement actions
Rite Aid #2305 120 W Main Street	On-site	Compliance Notification reports for September 2015 and April 2019. Hazardous Waste report for March 2016, related to pharmaceuticals. This does not appear to represent an environmental concern.	In Compliance
1015 Orchard Island Road South	On-site	A mercury manometer spill (Spill ID 0502-46-0833) was report on February 11, 2005. The spill occurred within a building on a concrete floor. No other information was provided in the report. This does not appear to represent an environmental concern.	In compliance

9.2.3 Ohio Bureau of Underground Storage Tank Regulations (BUSTR)

BUSTR revealed ten (10) files for facilities identified by EDR within and adjacent to the study area.

Location	Distance/ Direction	Details	Status
337 E Main Street Gulf Oil Company	On-site	Three (3) 1,000-gallon gasoline USTs were closed-by-removal in February 1998. Release Number #46000988-N00001 was issued in response to the closure. No chemicals-of-concern (COCs) in soil closure samples exceeded applicable regulatory action levels. This does not appear to represent an environmental concern.	NFA Issued, July 21, 2003
1015 S Orchard Island Drive Indian Lake WPCD	On-site	One (1) 2,000-gallon diesel fuel UST was closed-by-removal in 1998. Incident Number 4681536-00/Release Number 46006033-N00001 was issued in response to the closure. No COCs in soil closure samples exceeded applicable regulatory action levels. This does not appear to represent an environmental concern.	NFA Issued, November 25, 1998
		One (1) 2,000-gallon diesel fuel UST was closed-by-removal in 2016. Release Number 46006033-N00002 was issued in response to the closure. COCs detected in confirmation soil and water samples collected during the closure did not exceed applicable regulatory action levels. This does not appear to represent an environmental concern.	NFA Issued, March 4,2016

Location	Distance/ Direction	Details	Status
173 N Orchard Island Road Mallory's Mufflers	On-site	Two (2) 6,000-gallon gasoline and one (1) 6,000-gallon waste oil UST were closed-by-removal September 30, 1998. No COCs in soil closure samples exceeded applicable regulatory action levels. This does not appear to represent an environmental concern.	NFA Issued, January 22, 1999
433 State Route 708 Village of Russells Point	On-site	On May 12, 2016, BUSTR issued a letter to the Village requiring the UST system at the facility, known as the former Milhauser Chevy Dealership, to be closed. The facility was noted to have been abandoned in the 1970s, and the USTs were located within the building. Release number 46009982-N00001 was issued in response to the USTs. BUSTR approved closure-in-place for the USTs on March 21, 2007. Two (2) 550-gallon new oil and one (1) 1,000-gallon waste oil UST were closed-in-place June 6, 2007. Sampling was not conducted during the closure. The Village requested a Written Notice of Compliance from BUSTR in response to the closure of the USTs on August 8, 2007. As the Village was the owner of the USTs, but not the responsible party, they were not required to complete a closure assessment. This does not appear to represent an environmental concern.	No Viable RP
209 State Route 708 Village Pantry #2721 Ameristop #721	On-site	The facility has been a gasoline service station since at least 1975. Three (3) 10,000-gallon gasoline, one (1) 2,000-gallon diesel fuel, and one (1) 2,000-gallon kerosene UST were closed-by-removal on October 5, 1993. COCs detected in soil and groundwater during confirmation sampling exceeded applicable action levels. Incident Number 4631744-00/Release Number 46000009-N00001 was issued in response to the closure. In August 1994, the contaminated UST cavity backfill material was bioremediated with an in-situ treatment of bacteria enzymes and nutrients. Confirmation samples collected in May 1995 demonstrated that the backfill material had been remediated and met applicable action levels. Site assessment activities have been conducted at the Site since 1996, resulting in the installation of at least 20 soil borings, 21 monitoring wells, and one (1) recovery well. Free product has historically been present at the Site. A Tier 2 Evaluation report was submitted to BUSTR on May 7, 2021 and is currently being reviewed by the agency. Two (2) 8,000-gallon gasoline, one (1) 2,500-gallon kerosene, one (1) 10,000-gallon gasoline	Ongoing assessment, responsible party is Gillespie Oil Company

Location	Distance/ Direction	Details	Status
		and one (1) 2,500-gallon diesel fuel UST were installed at the facility in October 1993 with overfill and spill protection and are currently-in-use. **This listing represents a potential environmental concern, due to its proximity to proposed improvements. The on-going BUSTR investigation has demonstrated that petroleum impact is present on-Site and may have migrated off-Site in excess of petroleum contaminated soil (PCS) re-use action levels presented in OAC 1301:7-9-13.**	
9481 State Route 708 Spend-a-Day Marina	Adjacent400 ft/ Northeast	One (1) 550-gallon gasoline, one (1) 500-gallon gasoline, and one (1) 300-gallon used oil UST were closed-by-removal on June 14, 1994. Incident number 4640749-01/Release number 46008413-N00001 was issued in response to the closure. COCs detected in the UST cavity backfill soil and groundwater encountered in the UST cavity during confirmation sampling exceeded applicable action levels. As such, the UST cavity backfill was disposed off-site. COCs in the remaining confirmation soil samples did not exceed applicable action levels. The UST cavity water was re-sampled after new backfill was placed and COCs did not exceed applicable action levels. This does not appear to represent an environmental concern.	NFA Issued, May 7, 1997
		Incident number 4640749-02/Release number 46008413-N00002 was issued in response to a suspected product line release reported in August 1994. The broken product line was within the UST cavity that was addressed in connection with Incident number 4640749-03/Release number 46008413-N00003. All contaminated backfill material from the UST cavity was disposed off-site. This does not appear to represent an environmental concern.	NFA Issued June 20, 1997.
		One (1) 1,000-gallon gasoline and one (1) 2,000-gallon gasoline UST were closed-by-removal on November 12, 1996. Incident number 4640749-03/Release number 46008413-N00003 was issued in response to the closure. COCs detected in the UST cavity backfill soil during confirmation sampling exceeded applicable action levels. As such, the UST cavity backfill was disposed off-site. COCs in the remaining confirmation soil samples did not exceed applicable action levels. This does not appear to represent an environmental concern.	NFA Issued, March 13, 1997

Location	Distance/ Direction	Details	Status
164 N Orchard Island Road Shuler Marina, Inc.	Adjacent100 ft/ East	Three (3) 1,000-gallon gasoline USTs were closed-by-removal on December 16, 1994. Incident number 4641853-00/Release number 46002415-N00001 was issued in response to the closure. The USTs were situated in separate UST cavities. COCs detected in soil confirmation samples from the UST cavity sidewalls/floor did not exceed applicable action levels. COCs detected in soil samples from the UST cavity backfill material exceeded applicable action levels and was disposed off-site. Dispenser areas and piping runs were not sampled during the closure activities, as they had previously been paved over. This does not appear to represent an environmental concern.	NFA Issued, April 24, 1994

9.2.4 Local Health Department

The Logan County Health Department indicated they had no files pertaining to facilities identified by EDR within and adjacent to the study area.

9.2.5 Local Emergency Management Agency (EMA)

A file request was submitted to the Logan County EMA on August 30, 2021, and no response has been received as of the date of this report.

9.2.6 Local Fire Department

A file request was submitted to the Indian Joint Fire District on August 30, 2021 and on September 22, 2021, and no response has been received as of the date of this report.

FOIA requests and responses are provided in Appendix B.

10.0 HISTORICAL MAP REVIEW

10.1 Aerial Photographs

Hull obtained aerial photographs from EDR to aid in identifying past use of the Site and adjacent properties. Photographs were reviewed for the years 1959, 1973, 1981, 1994, 2006, 2010, 2013, and 2017. Copies of the aerial photographs are provided in Appendix C.

SUMMARY OF AERIAL PHOTOGRAPHS REVIEWED	
Date (Scale)	**Description**
1959 (1" = 1000')	The Site is developed with a mixture of residential and commercial properties. The northwest and southeast portions of the Site are undeveloped. Adjacent properties: North: Residential and commercial properties followed by Indian Lake South: Undeveloped and agricultural land East: Residential and commercial properties followed by Indian Lake West: Residential and commercial properties followed by undeveloped and agricultural land
1973 (1" = 1000')	Photograph appears similar to the 1959 aerial photograph. Additional commercial development was present on the southeast portion of the Site.
1981 (1" = 1000')	The Site is developed with a mixture of residential and commercial properties. Some of the vacant residential lots previously present had been developed Additional residential and commercial development was present on the southeast portion of the Site. Adjacent properties: North: Residential and commercial properties followed by Indian Lake South: Undeveloped and agricultural land East: Residential and commercial properties followed by Indian Lake West: Residential and commercial properties followed by undeveloped and agricultural land
1994 (1" = 1000')	Photograph appears similar to the 1981 aerial photograph. Additional commercial development was present on the southeast portion of the Site.
2006 (1" = 1000')	Photograph appears similar to the 1994 aerial photograph
2010 (1" = 1000')	Photograph appears similar to the 2006 aerial photograph
2013 (1" = 1000')	Photograph appears similar to the 2010 aerial photograph
2017 (1" = 1000')	Photograph appears similar to the 2013 aerial photograph

Five-year intervals were not achieved because they were not available in the resources checked. This is not considered a significant data gap because the Site and adjacent sites did not show significant changes within those time frames and because of the presence of other sources of historical Site information.

10.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance Maps were not available in the resources checked. A copy of the "no coverage" letter is included in Appendix D.

10.3 Historical Topographic Maps

Hull reviewed topographic for the years 1913, 1915, 1944, 1960, 1961, 1973, 1982, and 2013. A summary of the map review is included below. Copies of the maps are provided in Appendix E.

SUMMARY OF SITE OBSERVATIONS FROM TOPOGRAPHIC MAPS	
Year	**Site Land-Use**
1913	The southern and northwestern portion of the Site was largely undeveloped. The northern portion of the Site was developed (likely residential and commercial properties). Railroad tracks traversed the Site, one running east to west and one running north to south. The elevation of the Site and surrounding area ranged from approximately 1000 to 1010 feet above mean sea level (AMSL). The topography in the surrounding area including the Site displayed a gentle slope to the north.
1915	The Site appeared similar to the 1913 topographic map.
1944	The southeastern and northwestern portion of the Site was largely undeveloped. The northern and southwestern portion of the Site was developed (likely residential and commercial properties). Railroad tracks traversed the Site, one running east to west and one running north to south. The elevation of the Site and surrounding area ranged from approximately 1000 to 1010 feet AMSL. The topography in the surrounding area including the Site displayed a gentle slope to the north.
1960, 1961	The Site appeared similar to the 1944 topographic map; additional commercial/residential properties were scattered throughout the Site.
1973	The Site appeared similar to the 1960, 1961 topographic map.
1982	The Site appeared similar to the 1973 topographic map. Additional commercial properties were present on the southeastern portion of the Site.
2013	No identifying features are depicted

SUMMARY OF ADJACENT PROPERTY OBSERVATIONS FROM TOPOGRAPHIC MAPS				
Year	**North**	**East**	**South**	**West**
1913	Indian Lake	Undeveloped land; Indian Lake	Sporadic development and undeveloped land	Sporadic development and undeveloped land
1915	The adjacent properties appeared similar to the 1913 topographic map.			
1944	Sporadic development and Indian Lake	Undeveloped land; Indian Lake	Sporadic development and undeveloped land	Sporadic development and undeveloped land
1960, 1961	The adjacent properties appeared similar to the 1944 topographic map.			

SUMMARY OF ADJACENT PROPERTY OBSERVATIONS FROM TOPOGRAPHIC MAPS				
Year	**North**	**East**	**South**	**West**
1973	The adjacent properties appeared similar to the 1960, 1961 topographic map, with additional residential/commercial development throughout the area.			
1982	The adjacent properties appeared similar to the 1973 topographic map, with additional residential/commercial development throughout the area.			
2013	No identifying features are depicted			

Five-year intervals were not achieved because they were not available in the resources checked. This is not considered a significant data gap because the Site and adjacent sites did not show significant changes within those time frames and because of the presence of other sources of historical Site information.

11.0 SITE RECONNAISSANCE

11.1 General

On August 26, 2021, Mr. Robert Cramer, a representative of Hull, performed a reconnaissance of the Site to visually assess the Site and to identify RECs. Exterior portions of the Site were accessed from public right-of-way's adjacent to parcels that lie within the Site footprint. Due to the overall size of the Site, an inspection of the multiple parcels comprising the Site was conducted from the right-of-way only. Survey letters were sent out to property owners within the Site boundary for properties identified by EDR to be listed in regulatory databases. Completed surveys and documentation of phone interviews are provided in Appendix F.

A layout of the Site is presented on Figure 1. Site photographs are located in Appendix G.

11.1.1 Description of Structures, Roads, and Other Improvements on the Site

Site Access: The Site is roughly bordered by U.S. Highway 33 to the west, Indian Lake to the north, North Orchard Island Road to the east and East Kress Street to the south.

Structures observed from the rights-of-ways during the reconnaissance included residences, garages, commercial businesses, municipal treatment facilities, and a gas station.

11.1.2 Utility Information

Electric Service:	American Electric Power, DP&L
Gas Service:	AmeriGas, Vectren
Potable Water Service:	Russells Point Water Works
Sewer Service:	Logan County Sewer District

11.1.3 Current Uses of Adjoining Properties

Adjoining properties were observed from the Site's boundaries, public rights-of-way, or other vantage points, including an inspection of areas where hazardous substances may be or may have been stored, treated, handled, or disposed. Observations of the adjoining properties are summarized as follows:

CURRENT USE OF ADJOINING PROPERTIES	
North	Indian Lake and residential development
South	Agricultural, commercial, and residential development
East	Commercial development and Indian Lake
West	Agricultural and residential development

Three USTs are currently-in-use at the adjacent property to the northeast, Spend-a-Day Marina. No releases have been identified from the current UST system.

11.1.4 Hazardous Substances and Petroleum Products

Hazardous substances and/or petroleum products consisting of UST systems and aboveground storage tanks (ASTs) were observed during the Site reconnaissance. Actual products stored and/or utilized within the Site study area were unable to be determined. No obvious evidence of leaks or staining was visible from the rights-of-way. The Village indicated that they store 55-gallons of Kontrol 4-4 (pesticide) and 30 gallons of farmwork glyphosate (herbicide) in the maintenance bay at their property located at 433 State Route 708. No leaks, spills, or releases were reported in connection with these chemicals.

11.1.5 Solid and Hazardous Waste Generation, Storage, and Disposal

Typical household and business waste were observed from the right-of-way within the Site footprint during the reconnaissance. Two 55-gallon drums of non-hazardous waste were observed at the Marathon gas station located at 209 State Route 708. One laydown yard with construction debris was observed on the northwest end of Site. No obvious evidence of hazardous waste generation, storage and/or disposal was observed from the rights-of-way.

11.1.6 Underground Storage Tanks (USTs)

An active UST system was observed at the Marathon gas station located at 209 State Route 708. Current and historical UST systems are discussed in detail in Section 9.0.

11.1.7 Aboveground Storage Tanks (ASTs)

Numerous large propane tanks and a silo were observed from the rights-of-way during the Site reconnaissance. No obvious evidence of leaks or staining was visible from the rights-of-way. The Village indicated that there is a 100-gallon diesel fuel AST, installed in 2013, in the maintenance bay at their property located at 433 State Route 708. No leaks, spills, or releases were reported in connection with the AST.

11.1.8 Polychlorinated Biphenyls (PCBs)

Numerous pole-mounted transformers were observed. Ownership and PCB content were unable to be determined from the rights-of-way. No obvious evidence of leaks or staining was visible from the rights-of-way.

11.1.9 Wastewater and Stormwater

Wastewater at the Site consists of sanitary wastewater and is discharged to the Logan County Sewer District wastewater treatment facility. No obvious evidence of septic systems was present.

Stormwater is discharged to the Village storm sewer system via storm drains located across the Site. All drains appeared to be in good condition with no evidence of staining or sheens around or in the drains.

11.1.10 Pits, Ponds, Lagoons

No obvious evidence of ponds, pits, or lagoons were observed from the rights-of-way during the Site reconnaissance.

11.1.11 Stressed Vegetation and Stained Pavement

No obvious evidence of stressed vegetation was observed from the rights-of-way during the Site reconnaissance, but there were several areas of stained pavement located at the Marathon gas station at 209 State Route 708 and at a marina adjacent to Site.

11.1.12 Odors

No strong, pungent, or noxious odors were apparent during the Site reconnaissance.

11.1.13 Pools of Liquid

No obvious evidence of pools of liquid were identified from the rights-of-way during the Site reconnaissance.

11.1.14 Wells

Evidence of wells were not observed from the rights-of-way during the reconnaissance. However, thirteen (13) wells were identified by the ODNR Division of Water within the Site footprint. Eleven (11) wells were identified as monitoring wells, one (1) as a well domestic well, and one (1) well had no identifying usage.

11.1.15 Septic Systems

No septic systems were observed during the Site reconnaissance.

11.1.16 Other

No other items were included as part of this assessment.

12.0 FINDINGS AND CONCLUSIONS

This HTRW investigation was performed to identify the risk of encountering HTRW and non-HTRW environmental issues at the Village of Russells Point Storm Sewer Improvement project areas and to determine if any RECs present have impacted the project area or will impact implementation of the proposed project. Copies of Hull employee résumés showing pertinent qualifications are presented in Appendix H. According to ER 1165-2-132, non-HTRW environmental issues that do not comply with federal, state, and local regulations should be discussed in the HTRW evaluation along with HTRW issues.

The following RECs were identified and a figure depicting the locations is provided as Figure 2:

- **REC#1 – Former Dry Cleaner, 337 E. Main Street:** The historical operation of a dry-cleaning facility from at least 2004 to 2008 within the project area represents a potential environmental concern, due to its proximity to proposed improvements. Historical operations may have resulted in a release of volatile organic compounds (VOCs) to soil, water, or soil vapor.

- **REC#2 – Marathon Gas Station, 209 State Route 708:** The facility has been a gasoline service station since at least 1975. A release was identified from the UST system at the Site in 1993. The on-going BUSTR investigation has demonstrated that petroleum impact is present on-Site and may have migrated off-Site in excess of PCS re-use action levels presented in OAC 1301:7-9-13. This represents a potential environmental concern, due to its proximity to proposed improvements. Soil, water, or soil vapor may be impacted by VOCs, polynuclear aromatic hydrocarbons (PAHs), and/or total petroleum hydrocarbons (TPH).

No HTRW investigation can wholly eliminate uncertainty regarding the potential for HTRW associated with a project area. Performance of the HTRW investigation is intended to reduce, but not eliminate, uncertainty regarding the potential for HTRW in connection with a project area.

13.0 REFERENCES

A variety of technical documents and publications were referred to during the course of this project. Some of the references consulted are presented below. References documents and publications may or may not have been reviewed in their entirety. The guidelines and procedures presented in the documents and publications referenced have not been strictly adhered to unless stated otherwise.

American Society for Testing and Materials. E 1527-13 *Environmental Site Assessments: Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process.* 2013.

Bouder, Richard. *Ohio Environmental Protection Agency, Central Office*. Written Correspondence, August and September 2021. Print.

Environmental Data Resources. *Aerial Photographs*. 1959, 1973, 1981, 1994, 2006, 2010, 2013, and 2017. Photograph.

Environmental Data Resources. *EDR Report*. 18 August 2021. Print.

Environmental Data Resources. *Sanborn Fire Insurance Maps, No Coverage Letter*. 18 August 2021. Print.

Environmental Data Resources. *Topographic Maps,* 1913, 1915, 1944, 1960, 1961, 1973, 1982, and 2013. Print.

Indian Joint Fire District. Written Correspondence, August and September 2021. Print.

Logan County Emergency Management Agency. Written Correspondence, August 2021. Print.

Logan County Health District. Written Correspondence, September 2021. Print.

Prather, Penny. *Ohio Environmental Protection Agency, Southwest District Office*. Written Correspondence, September 2021. Print.

Reichenbach, Marla. *Bureau of Underground Storage Tank Regulations*. Written Correspondence, September 2021. Print.

FIGURES

Notes:
The aerial photo was acquired through the ESRI Imagery web service. Aerial photography dated 2015.

HULL
Environment / Energy / Infrastructure

DISCLAIMER
Hull & Associates, LLC (Hull) has furnished this map to the company identified in the title block (Client) for its sole and exclusive use as a preliminary planning and screening tool and field verification is necessary to confirm these data. This map is reproduced from geospatial information compiled from third-party sources which may change over time. Areas depicted by the map are approximate and may not be accurate to mapping, surveying or engineering standards. Hull makes no representation or guarantee as to the content, accuracy, timeliness or completeness of any information or spatial location depicted on this map. This map is provided without warranty of any kind, including but not limited to, the implied warranties of merchantability or fitness for a particular purpose. In no event will Hull, its owners, officers, employees or agents, be liable for damages of any kind arising out of the use of this map by Client or any other party.

October 2021

Hazardous, Toxic, and Radioactive Waste (HTRW) Investigation
Russells Point

Proposed Storm Sewer Locations

Russells Point, Logan County, Ohio

Figure 1

Produced Using Esri's ArcGIS Software

File Name: VRL002_01_Fig01_PropStormSewer.mxd

Edited: 10/11/2021 By: rkaip

HULL

Environment / Energy / Infrastructure

DISCLAIMER
Hull & Associates, LLC (Hull) has furnished this map to the company identified in the title block (Client) for its sole and exclusive use as a preliminary planning and screening tool and field verification is necessary to confirm these data. This map is reproduced from geospatial information compiled from third-party sources which may change over time. Areas depicted by the map are approximate and may not be accurate to mapping, surveying or engineering standards. Hull makes no representation or guarantee as to the content, accuracy, timeliness or completeness of any information or spatial location depicted on this map. This map is provided without warranty of any kind, including but not limited to, the implied warranties of merchantability or fitness for a particular purpose. In no event will Hull, its owners, officers, employees or agents, be liable for damages of any kind arising out of the use of this map by Client or any other party.

October 2021

Hazardous, Toxic, and Radioactive Waste (HTRW) Investigation
Russells Point

Recognized Environmental Condition Map

Russells Point, Logan County, Ohio

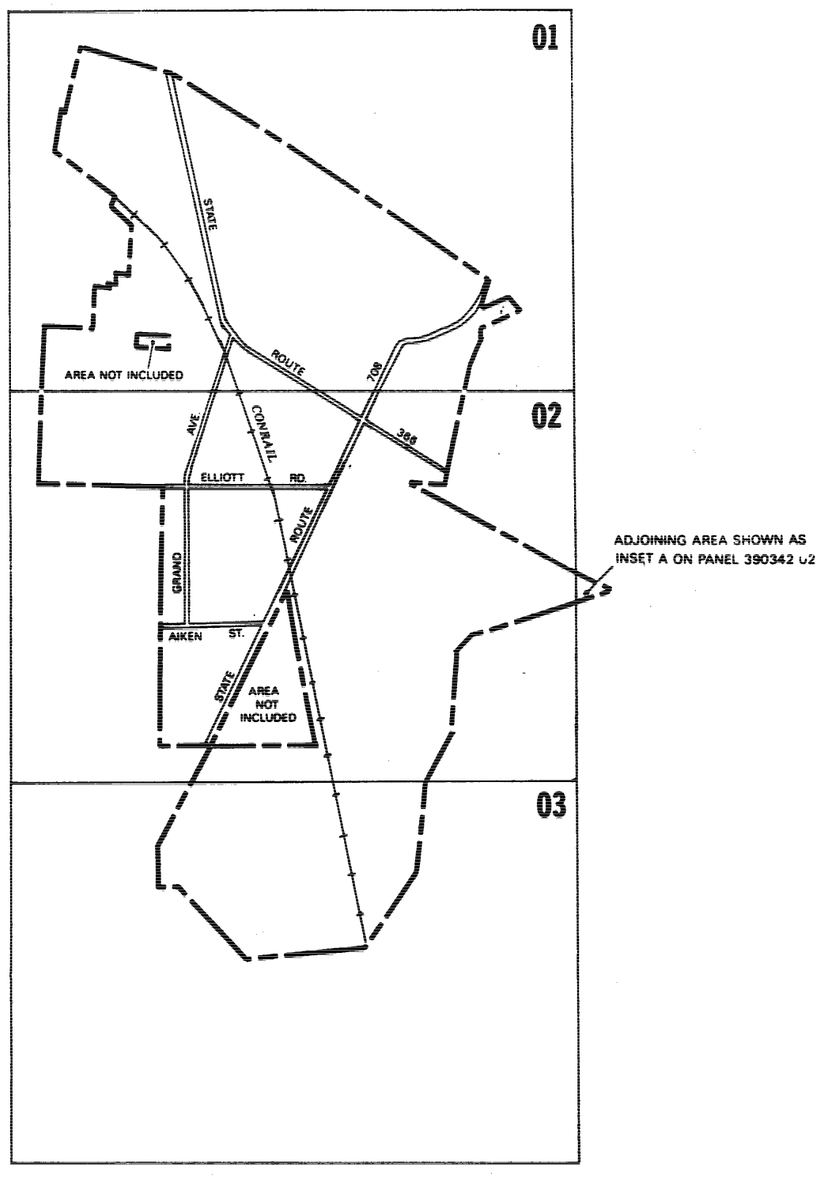
Figure 2

Produced Using Esri's ArcGIS Software

File Name: VRL002_01_Fig02_RECs.mxd

Edited: 10/11/2021 By: rkaip

Appendix F. FEMA Floodplain Maps



KEY TO MAP

ZONE DESIGNATIONS*

ZONE C
ZONE A
ZONE C

Base Flood Elevation Line with elevation in feet — 513
Base Flood Elevation where uniform within zone — (EL 987)
Elevation Reference Mark — RM7$_X$
River Mile — *M1.5

*EXPLANATION OF ZONE DESIGNATIONS

A flood insurance map displays the zone designations for a community according to areas of designated flood hazards. The zone designations used by FEMA are

ZONE	EXPLANATION
A	Areas of 100-year flood base flood elevations and flood hazard factors not determined
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet, average depths of inundation are shown, but no flood hazard factors are determined
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet, base flood elevations are shown, but no flood hazard factors are determined
A1-A30	Areas of 100-year flood, base flood elevations and flood hazard factors determined
A99	Areas of 100-year flood to be protected by flood protection system under construction, base flood elevations and flood hazard factors not determined
B	Areas between limits of the 100-year flood and 500-year flood, or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile, or areas protected by levees from the base flood (Medium shading)
C	Areas of minimal flooding (No shading)
D	Areas of undetermined, but possible flood hazards
V	Areas of 100-year coastal flood with velocity (wave action), base flood elevations and flood hazard factors not determined
V1-V30	Areas of 100-year coastal flood with velocity (wave action), base flood elevations and flood hazard factors determined

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only, it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

To determine if flood insurance is available in this community contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

INITIAL IDENTIFICATION: APRIL 5, 1974

FLOOD HAZARD BOUNDARY MAP REVISIONS: AUGUST 27, 1976

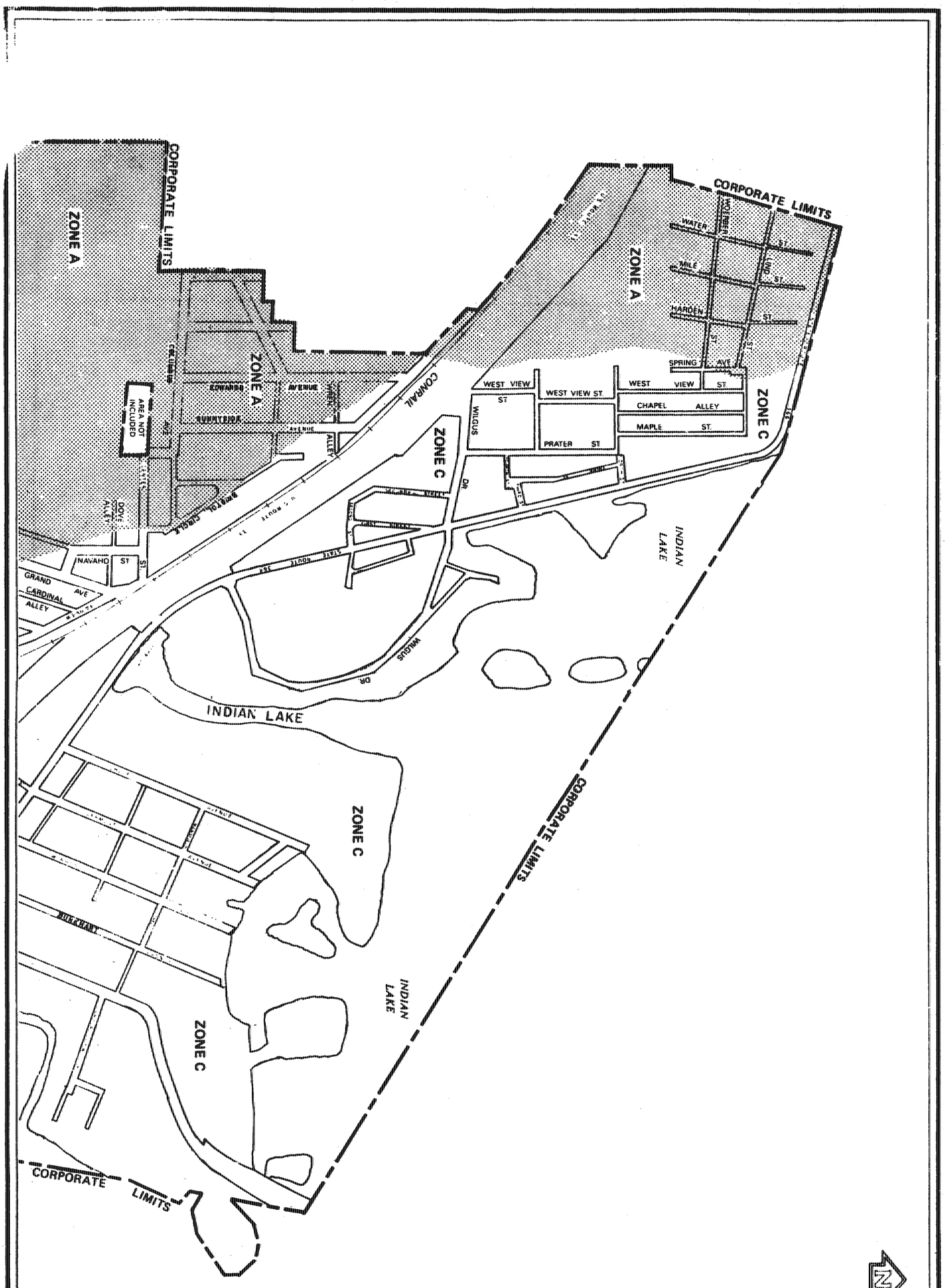
FLOOD INSURANCE RATE MAP EFFECTIVE: AUGUST 4, 1987

FLOOD INSURANCE RATE MAP REVISIONS:

FEDERAL EMERGENCY MANAGEMENT AGENCY

FIRM

FLOOD INSURANCE RATE MAP 01-03
MAP INDEX
VILLAGE OF RUSSELLS POINT, OH
LOGAN COUNTY
COMMUNITY NUMBER 390342 B



MAP 01

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF RUSSELLS POINT, OH

LOGAN COUNTY

APPROXIMATE SCALE

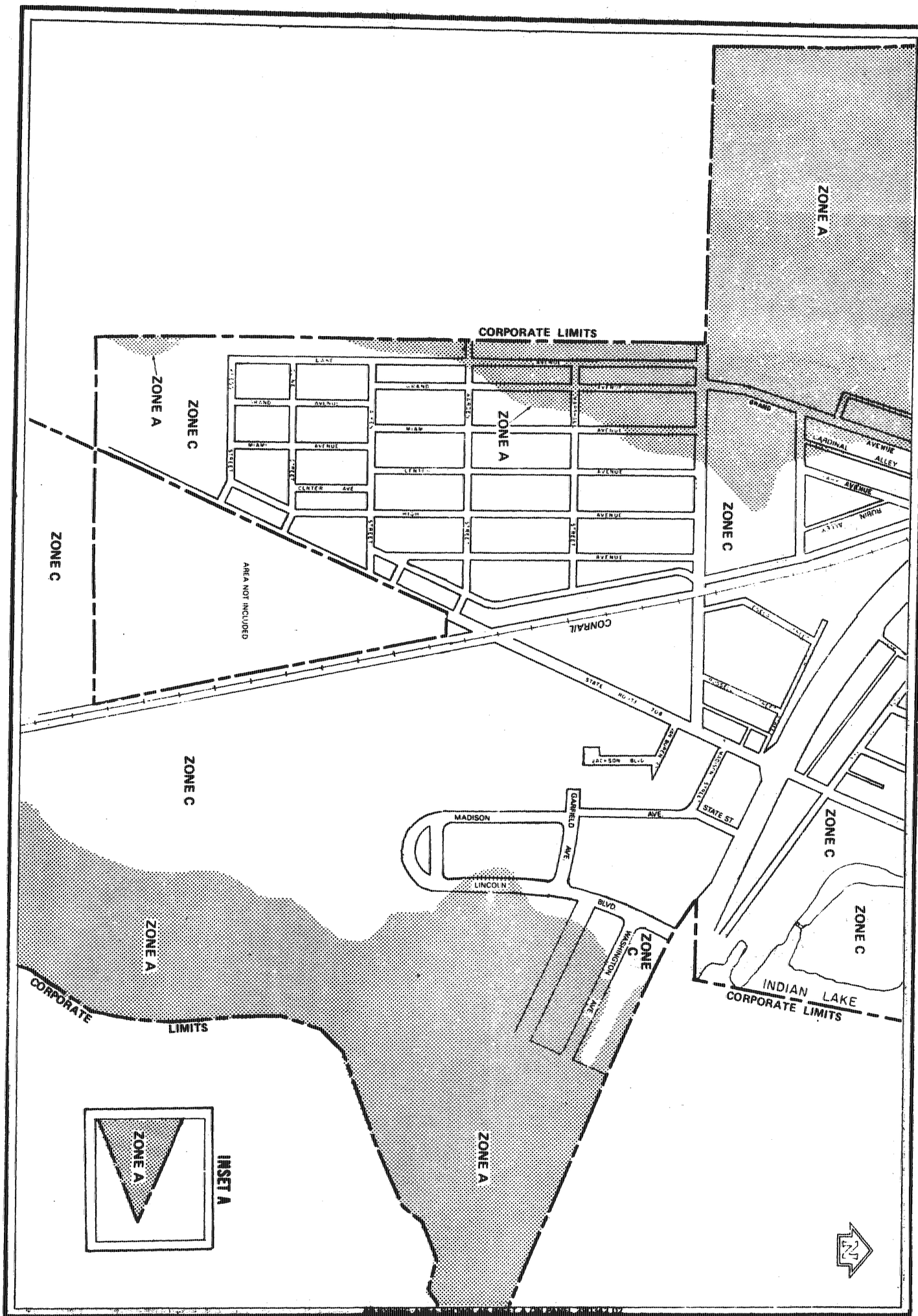
400 0 400 800 1200 FEET

FLOOD INSURANCE RATE MAP

COMMUNITY NUMBER 390342

EFFECTIVE DATE

AUGUST 4, 1987



MAP 02

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF RUSSELLS POINT, OH

LOGAN COUNTY

APPROXIMATE SCALE

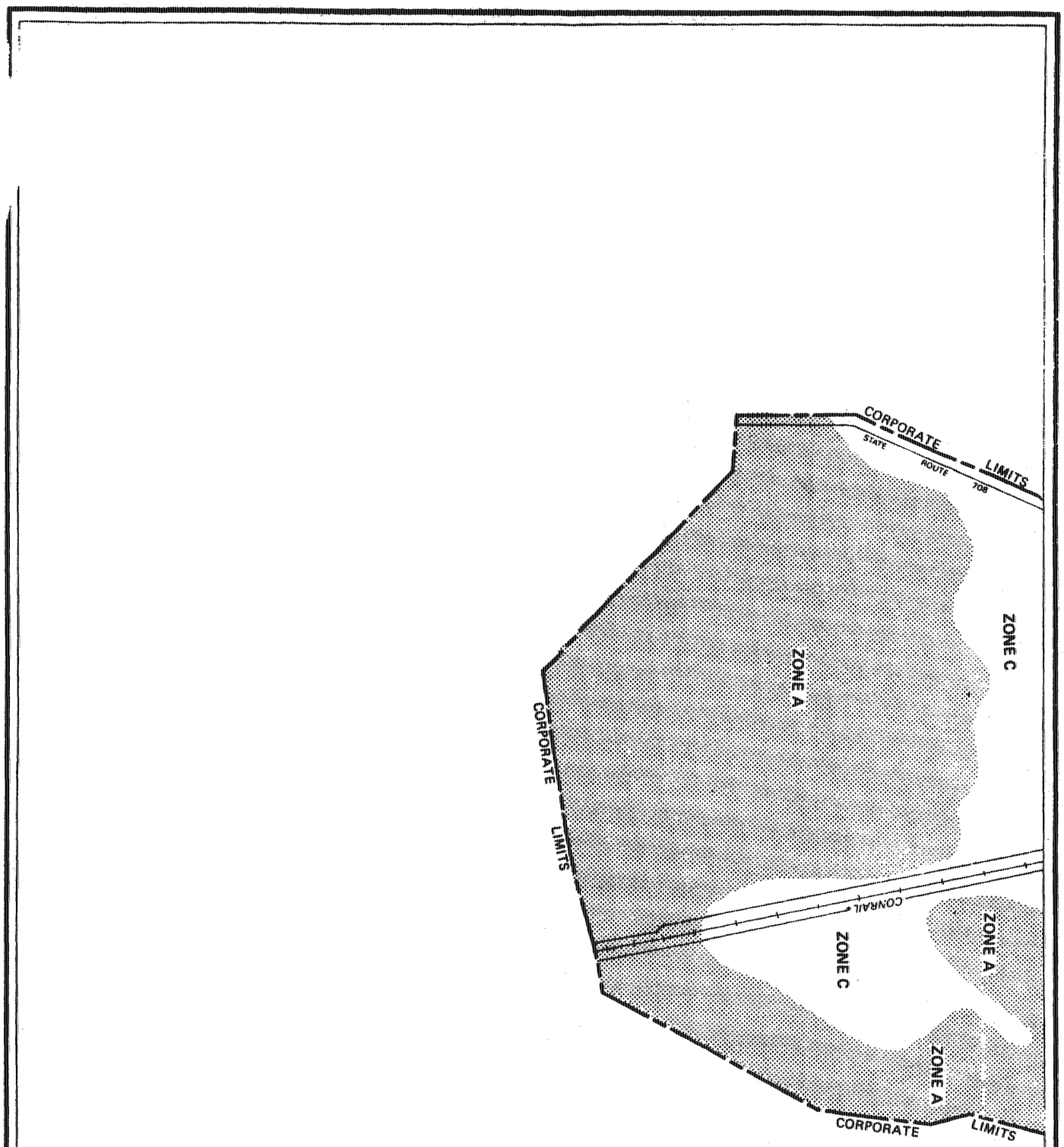
400 0 400 800 1200 FEET

FLOOD INSURANCE RATE MAP

COMMUNITY NUMBER 390342

EFFECTIVE DATE

AUGUST 4, 1987



MAP 03

FEDERAL EMERGENCY MANAGEMENT AGENCY

VILLAGE OF RUSSELLS POINT, OH

LOGAN COUNTY

APPROXIMATE SCALE

400 0 400 800 1200 FEET

FLOOD INSURANCE RATE MAP

COMMUNITY NUMBER 390342

EFFECTIVE DATE

AUGUST 4, 1987

Appendix G. EJScreen Report

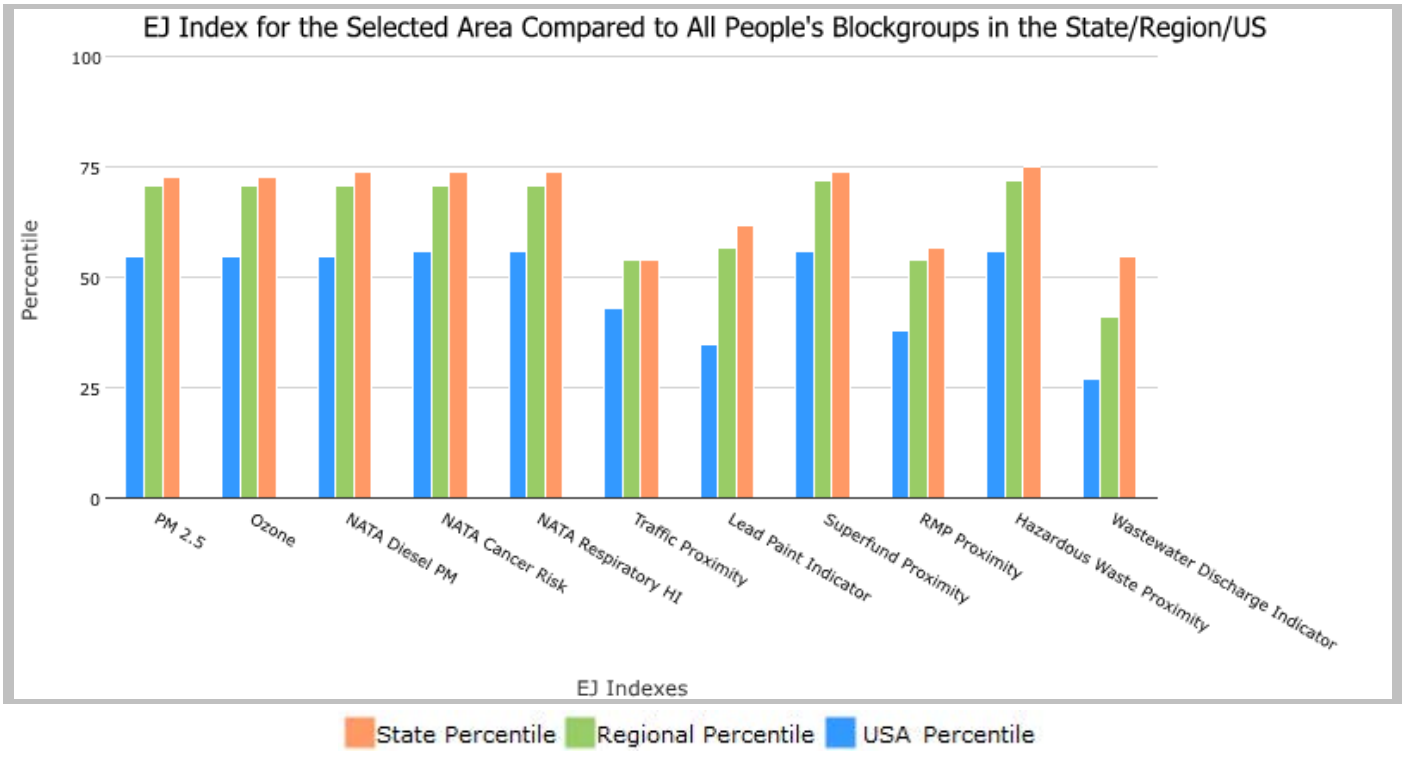
EJSCREEN Report (Version 2020)

City: Russells Point village, OHIO, EPA Region 5

Approximate Population: 1,193

Input Area (sq. miles): 1.01

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	73	71	55
EJ Index for Ozone	73	71	55
EJ Index for NATA* Diesel PM	74	71	55
EJ Index for NATA* Air Toxics Cancer Risk	74	71	56
EJ Index for NATA* Respiratory Hazard Index	74	71	56
EJ Index for Traffic Proximity and Volume	54	54	43
EJ Index for Lead Paint Indicator	62	57	35
EJ Index for Superfund Proximity	74	72	56
EJ Index for RMP Proximity	57	54	38
EJ Index for Hazardous Waste Proximity	75	72	56
EJ Index for Wastewater Discharge Indicator	55	41	27



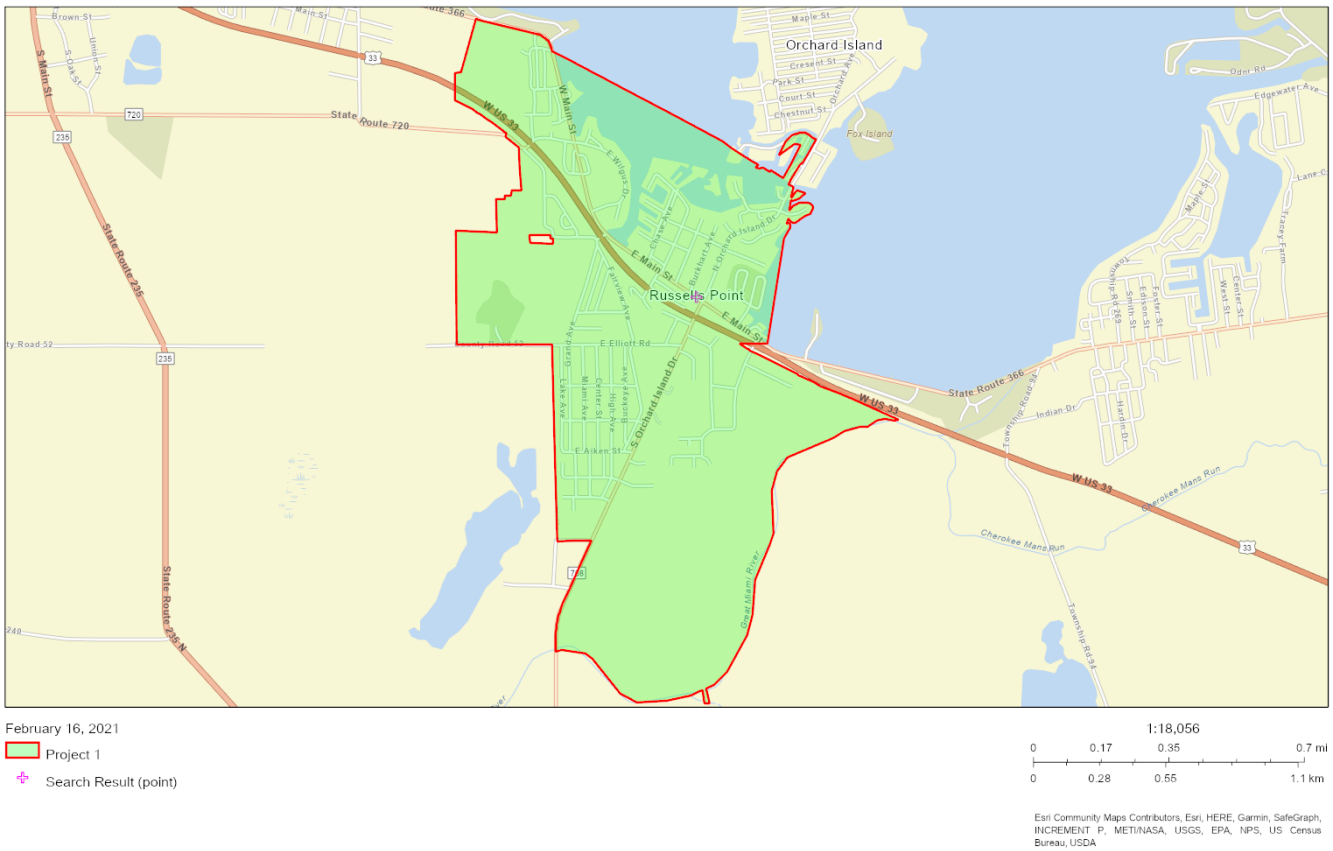
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2020)

City: Russells Point village, OHIO, EPA Region 5

Approximate Population: 1,193

Input Area (sq. miles): 1.01



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2020)

City: Russells Point village, OHIO, EPA Region 5

Approximate Population: 1,193

Input Area (sq. miles): 1.01

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	8.66	9.03	23	8.4	50	8.55	53
Ozone (ppb)	44.2	44.5	44	43.8	46	42.9	64
NATA* Diesel PM (µg/m^3)	0.23	0.416	15	0.446	<50th	0.478	<50th
NATA* Cancer Risk (lifetime risk per million)	21	26	6	26	<50th	32	<50th
NATA* Respiratory Hazard Index	0.26	0.34	5	0.34	<50th	0.44	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	190	400	56	530	51	750	47
Lead Paint Indicator (% Pre-1960 Housing)	0.39	0.41	55	0.38	58	0.28	70
Superfund Proximity (site count/km distance)	0.019	0.095	16	0.13	9	0.13	17
RMP Proximity (facility count/km distance)	1.1	0.71	79	0.83	76	0.74	79
Hazardous Waste Proximity (facility count/km distance)	0.079	2.4	4	2.4	9	5	10
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.00073	0.43	43	2.4	54	9.4	64
Demographic Indicators							
Demographic Index	32%	26%	72	28%	69	36%	53
People of Color Population	9%	21%	44	25%	36	39%	19
Low Income Population	55%	32%	83	30%	86	33%	84
Linguistically Isolated Population	4%	1%	88	2%	81	4%	68
Population With Less Than High School Education	10%	10%	62	10%	63	13%	54
Population Under 5 years of age	6%	6%	55	6%	54	6%	52
Population over 64 years of age	17%	16%	59	16%	62	15%	66

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

Appendix H. USFWS Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
Phone: (614) 416-8993 Fax: (614) 416-8994

In Reply Refer To: May 10, 2022
Project Code: 2022-0040455
Project Name: Russells Point Storm Sewer Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

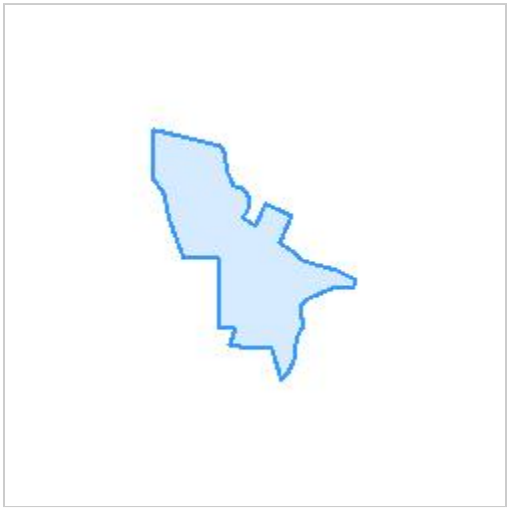
Ohio Ecological Services Field Office
4625 Morse Road, Suite 104
Columbus, OH 43230-8355
(614) 416-8993

Project Summary

Project Code: 2022-0040455
Event Code: None
Project Name: Russells Point Storm Sewer Improvements
Project Type: New Constr - Below Ground
Project Description: The project will improve the stormwater sewer system for the Village of Russells Point to increase conveyance of stormwater and to reduce the amount of stormwater that enters into the Village's sanitary sewer system. The project would install new storm sewer pipeline throughout the Village, approximately 14,884 linear feet in total. Some currently existing storm sewer pipes will be replaced, approximately 3,585 linear feet in total. All work will occur along roads and in other developed parts of the Village. Any tree removal required for this project will only occur from October 1 to March 31 to mitigate potential adverse effects to listed bats. Best management practices such as silt fencing will be utilized to mitigate potential impacts related to soil erosion.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@40.46863555,-83.89596925076088,14z



Counties: Logan County, Ohio

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Copperbelly Water Snake *Nerodia erythrogaster neglecta* Population: Indiana north of 40 degrees north latitude, Michigan, Ohio No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7253	Threatened
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Clams

NAME	STATUS
Rayed Bean *Villosa fabalis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5862

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	Army Corps of Engineers
Name:	Max Headlee
Address:	600 Dr. Martin Luther King Jr. Place
Address Line 2:	Rm 708
City:	Louisville
State:	KY
Zip:	40202
Email	max.r.headlee@usace.army.mil
Phone:	5023156866

From: Ohio, FW3
To: Headlee, Max R CIV USARMY CELRL (USA)
Subject: [Non-DoD Source] Storm Sewer Improvements at the Village of Russells Point, Logan County, Ohio
Date: Friday, May 13, 2022 1:51:16 PM
Attachments: image.png
image.png

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994

Project Code # 2022-0040455

Dear Mr. Headlee,

The U.S. Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) to avoid impacts to the endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

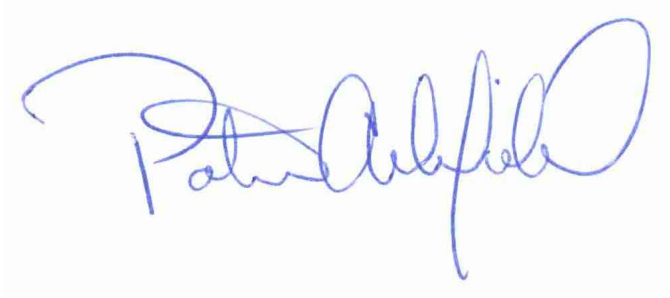
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant

species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Patrice M. Ashfield
Field Office Supervisor

Appendix I. Ohio SHPO Coordination

In replies, please use
2021-LOG-52118

January 24, 2022

Mr. Montana Martin
Department of the Army
Corps of Engineers
Louisville District
600 Dr. Martin Luther King Jr Place
Louisville, KY 40202

RE: Storm Sewer Improvements the Village of Russells Point, Logan County, Ohio

Dear Mr. Martin:

This is in response to the receipt, on January 10, 2022, of a Phase I Cultural Resource Management Survey for the Proposed Storm Sewer Improvements the Village of Russells Point, Logan County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

According to the information submitted and our files, the SHPO previously reviewed and commented on the aforementioned project, which was submitted by Mr. Jeff Weidner of the Village of Russells Point. Based on a review of the project information and a copy of our October 20, 2021 letter, the Corps has determined that the project is an undertaking as described in 36 CFR 800. Furthermore, the Corps has determined that the undertaking will have no effect on historic properties. According to your letter dated January 10, 2022, the scope of the project has not changed since the original submission to our office, therefore the SHPO concurs with the Corps' findings.

The SHPO office agree the proposed project will no effect to any historic properties and no further work is necessary. No further coordination is necessary unless the project changes or new or additional historic properties are discovered during the implementation of the project. In such a situation, the SHPO should be contacted as per 36 CFR 800.13. Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs.

If you have any questions, please contact me by email at dgagliano@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Dawn Walter Gagliano, Project Reviews Manager
Resource Protection and Review

Ser. No. 1091584

Appendix J. Public Comments

From:	Baker, Barbara - NRCS, Columbus, OH
To:	Headlee, Max R CIV USARMY CELRL (USA)
Subject:	[Non-DoD Source] Russell"s Point Project
Date:	Tuesday, December 21, 2021 3:28:03 PM
Attachments:	NRCSEasements_ArmyCorpsProposedProjectArea.cpg NRCSEasements_ArmyCorpsProposedProjectArea.dbf NRCSEasements_ArmyCorpsProposedProjectArea.prj NRCSEasements_ArmyCorpsProposedProjectArea.sbn NRCSEasements_ArmyCorpsProposedProjectArea.sbx NRCSEasements_ArmyCorpsProposedProjectArea.shp NRCSEasements_ArmyCorpsProposedProjectArea.shp.xml NRCSEasements_ArmyCorpsProposedProjectArea.shx NRCSEasements_ArmyCorpsProjectRequest.pdf

---

Max:

We received notification of the US Army Corp. of Engineers project near Russell's Point in Logan County, Ohio. The USDA, Natural Resources Conservation Service has several Agricultural Conservation Easement Program (ACEP) easements in the general area that should be avoided if at all possible. While it doesn't appear the plans impact our easements, I wanted to ensure the Corp. was aware of their location in the event an alternative path is found to be the best option. Attached is a pdf map of the easements and shape files if you wish to overlay them on your maps.

If you require more information please let me know. In the event you find the project will impact an easement we will need to work together determine a path forward.

I appreciate your notification of the project and any further information concerning the impact on any easements in the area.

Barbara

Barbara J. Baker, Ph.D.
Assistant State Conservationist for Natural Resources United States Department of Agriculture Natural Resources Conservation Service

200 North High Street, Room 522
Columbus, Ohio 43212
(614) 255-2502 - Office
(614) 406-0807 - Mobile

From:	Tim Smith
To:	Headlee, Max R CIV USARMY CELRL (USA)
Cc:	Christina Bramlage; Arie Pequignot
Subject:	[URL Verdict: Neutral][Non-DoD Source] EA for Russells Point, OH Storm Sewer Improvement Project
Date:	Monday, December 20, 2021 3:21:42 PM
Attachments:	image009.png image010.png image011.png image012.png

---

Max Headlee
U.S. Army Corps of Engineers
Louisville, KY

A review of our files has not revealed any adverse environmental factors known to our agency and being within our jurisdiction for the Storm Sewer Improvement Project Area for Russells Point, Ohio, as depicted in the Russells Point Potential Alternative Features Map received by our office on December 16, 2021.

310 South Main Street
Bellefontaine, Ohio
43311
Phone: 937-592-9040
FAX: 937-592-6746
www.loganhealth.org

Timothy M. Smith, REHS, MS
Director of Environmental Health
937-651-6212
tsmith@co.logan.oh.us