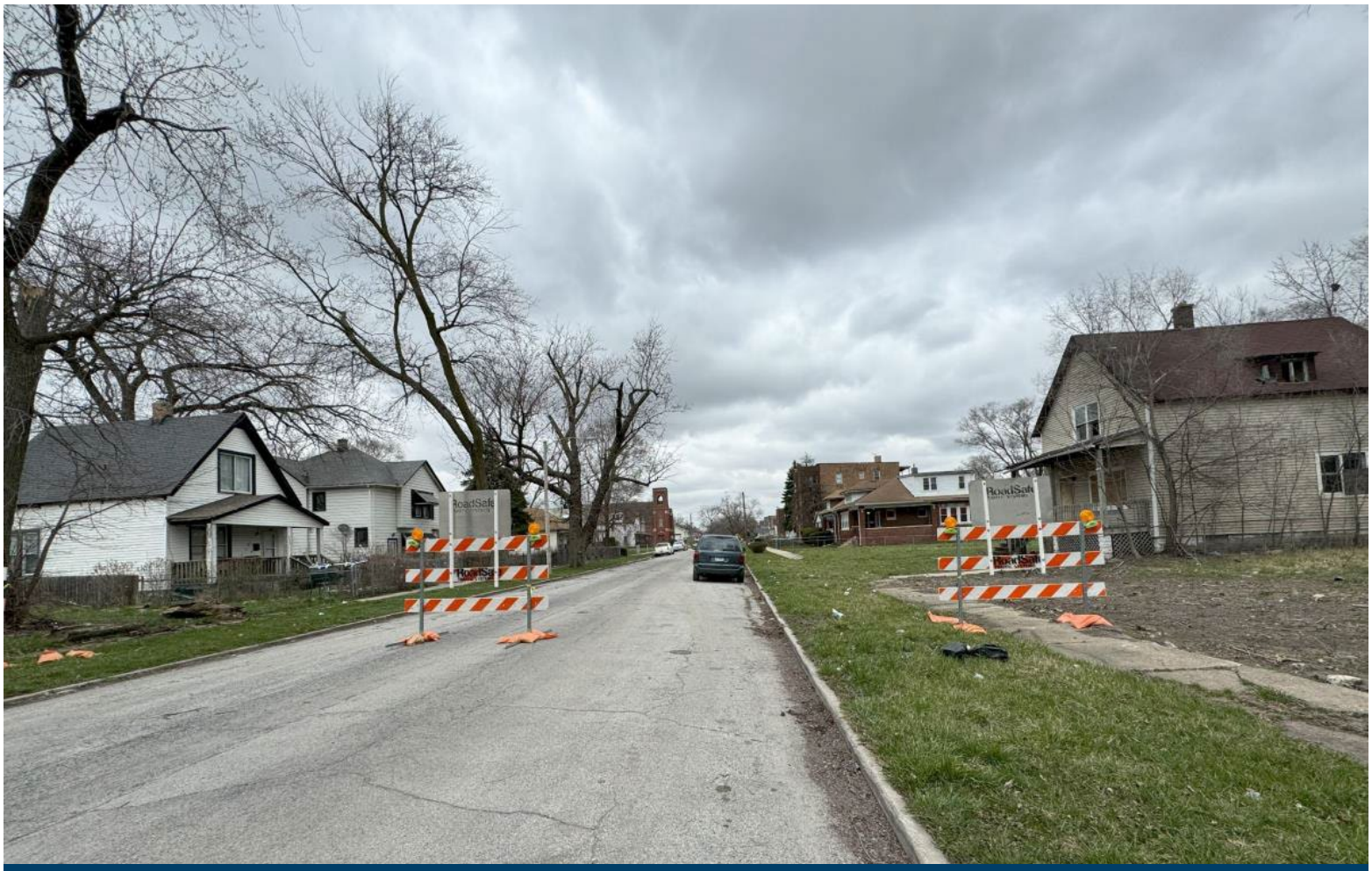

Draft Environmental Assessment

MWRD City of Harvey Stormwater Management Project

EMC-2022-BR-012-0015

Cook County, Illinois

November 2024 – DRAFT FOR REVIEW

FEMA

Federal Emergency Management Agency
Region 5
Department of Homeland Security
536 South Clark Street, Sixth Floor
Chicago, IL 60605

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Acronyms and Abbreviations

ACM	Asbestos-Containing Material
APE	Area of Potential Effects
BMP	Best Management Practice
BRIC	Building Resilient Infrastructure and Communities
CAA	Clean Air Act
CBRS	Coastal Barrier Resources System
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
CWA	Clean Water Act
DHS	U.S. Department of Homeland Security
EA	Environmental Assessment
EJ	Environmental Justice
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAQ	Frequently-asked-questions
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GHG	Greenhouse gas
IDNR	Illinois Department of Natural Resources
IDOT	Illinois Department of Transportation
IEMA	Illinois Emergency Management Agency
IEPA	Illinois Environmental Protection Agency

IGPA	Illinois Groundwater Protection Act
IL SHPO	State Historic Preservation Office
ILCS	Illinois Compiled Statutes
LBP	Lead-Based Paint
MBTA	Migratory Bird Treaty Act
MWRD	Metropolitan Water Reclamation District of Greater Chicago
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM	Particulate Matter
R1	Single Dwelling
RCRA	Resource Conservation and Recovery Act
RGA	Richard Grubb and Associates
SC-GHG	Social Cost of Greenhouse Gas Emissions
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Daily Maximum Load
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code

USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WMO	Watershed Management Ordinance
$	U.S. Dollars
<	Less Than

SECTION 1. Introduction

1.1. Project Authority

The Illinois Emergency Management Agency (Applicant) and the Metropolitan Water Reclamation District of Greater Chicago (MWRD, Subapplicant) propose to implement stormwater management measures to mitigate potential future flood damage and loss within the City of Harvey. The MWRD applied to the Federal Emergency Management Agency (FEMA) through the Illinois Emergency Management Agency (IEMA) for a grant under FEMA's Building Resilient Infrastructure and Communities (BRIC) program. The BRIC program is authorized under Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, 42 United States Code (U.S.C.) § 5133, as amended by the Disaster Recovery Reform Act of 2018.

This environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §§ 4321–4370h; the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [C.F.R.] Parts 1500 to 1508); the U.S. Department of Homeland Security's (DHS) Directive No. 023-01, rev. 1, *Implementation of the National Environmental Policy Act* (October 31, 2014); DHS Instruction Manual No. 023-01-001-01, rev. 1, *Implementation of the National Environmental Policy Act* (November 6, 2014); FEMA Directive No. 108-01, *Environmental Planning and Historic Preservation Responsibilities and Program Requirements* (August 22, 2016); and FEMA Instruction 108-01-1, *Instruction on Implementation of the Environmental and Historic Preservation Responsibilities and Program Requirements* (August 22, 2016). FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this EA is to analyze the potential environmental impacts of the proposed project and alternatives, including a No Action alternative. FEMA will use the findings in this EA to determine whether to prepare an Environmental Impact Statement for the proposed project or to issue a Finding of No Significant Impact (FONSI).

In accordance with federal laws and FEMA regulations, the EA process for a proposed federal action must include an evaluation of alternatives and a discussion of the potential environmental impacts. As part of this NEPA review, the requirements of other environmental laws and executive orders (EOs) are addressed.

1.2. Project Location

The project area is in the City of Harvey in Cook County, Illinois. The City of Harvey is south of the City of Chicago and the Little Calumet River. The project would involve improvements over a 126-acre project area bounded by 152nd Street to the north, Center Avenue to the east, 154th Street to the south, and South Wood Street to the west. General project coordinates are 41.611047, -87.652735. The general project location is shown in Figure 1-1.

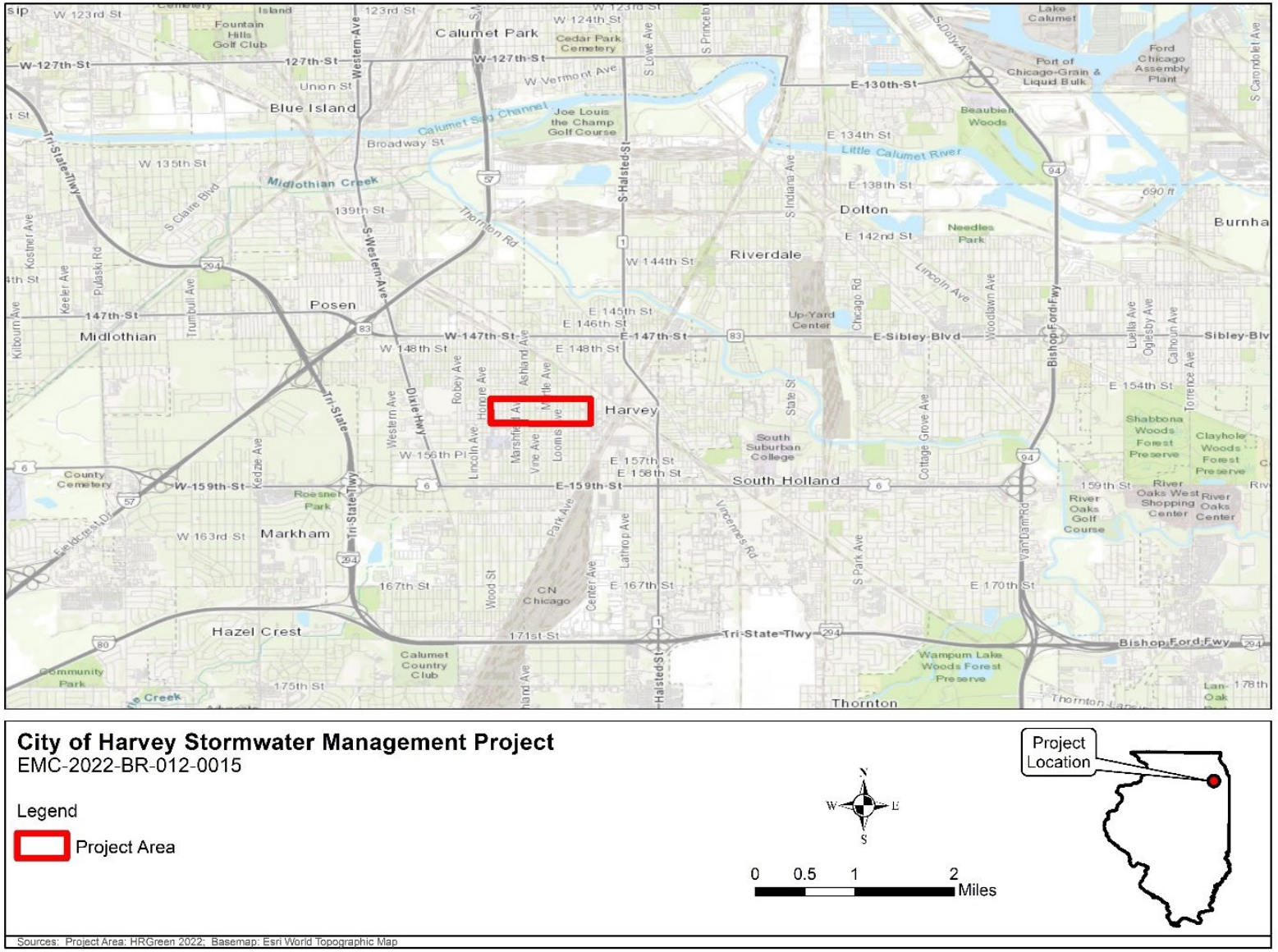

Figure 1-1. General Project Location

1.3. Purpose and Need

The objective of the BRIC grant program is to support states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The program's guiding principles are supporting communities through capability and capacity building, encouraging and enabling innovation, promoting partnerships, enabling large infrastructure projects, maintaining flexibility, and providing consistency. The purpose of the proposed project is to reduce flood hazards and protect people and property within the City of Harvey.

This project is needed because the city has a history of widespread flooding, particularly in the northeast part of the city along the CSX railroad. Stormwater runoff generated within the project area and vicinity is primarily handled by a combined sewer system, which collects and conveys stormwater runoff and sanitary sewer flows through the same system of pipes. This system limits conveyance and flood storage capacity. During heavy rain events, the combined sewer system can become overwhelmed by excess water, resulting in shallow ponding and flooding in and near the project area. Flood events in the city have resulted in hazards and damage, including combined sewer backups into basements, overland flow into buildings, and nuisance street and yard flooding (HRGreen 2021).

Climate change is increasing the frequency of flooding throughout Illinois. Over the last half century, the average annual precipitation in the Midwest has generally increased by 5 to 10 percent. Additionally, rainfall during the four wettest days of the year has increased by about 35 percent, and the amount of water flowing in most streams during the worst flood of the year has increased by more than 20 percent. These patterns are expected to continue to increase over the next century, increasing the risk of future flooding (U.S. Environmental Protection Agency [EPA] 2016). *See* Section 7 for references listed by author or agency and year of publication. Flood risk reduction measures are needed to reduce the risk of precipitation-induced flooding within and adjacent to the project area.

SECTION 2. Alternatives Analysis

NEPA requires FEMA to evaluate alternatives to the Proposed Action and describe the environmental impacts of each alternative. NEPA also requires an evaluation of the No Action alternative, which is the future condition without the project. This section describes the No Action alternative, the Proposed Action, and alternatives that were considered but dismissed.

2.1. Alternative 1 – No Action

The No Action alternative is included to describe potential future conditions if no action is taken to reduce flood risks. Under the No Action alternative, MWRD would not receive FEMA funds for comprehensive hazard mitigation or flood risk management. Under the No Action alternative, a detention basin and stormwater improvements would not be implemented within the City of Harvey. This alternative would not result in any additional increase in the flood storage capacity in the project area, nor separation of stormwater and wastewater sewer lines. Stormwater runoff would continue to be conveyed through combined sewer systems, limiting flood storage capacity, and risking combined sewer overflows and sewer backups into basements. Structures and roadways within and surrounding the project area would remain at risk of inundation and damage from flooding. Additionally, flood risk in the project area would worsen because of the effects of climate change, as discussed in Section 1.3.

2.2. Alternative 2 – Proposed Action

Under the Proposed Action, MWRD proposes to construct a new stormwater system and detention basin in the City of Harvey, which is in Cook County, Illinois. The Proposed Action would include the construction of an approximately 3.4-acre detention basin to store 23-acre-feet of stormwater until it is released into the new stormwater sewer. The Proposed Action would also separate the combined sewer system in the 126-acre project area into separate pipes for stormwater and sewer flows and install related ancillary stormwater infrastructure, such as catch basins, inlets, and maintenance hole covers within the rights-of-way throughout the project area. The new stormwater sewer would drain into the Illinois Department of Transportation's (IDOT) large diameter storm sewer system, the Wood Street Sewer System, which is treated at the Calumet Water Reclamation Plant and discharged into the Little Calumet River (MWRD 2023a). The components of the Proposed Action are discussed in more detail in Section 2.2.1 and Section 2.2.2.

The Proposed Action would require approximately 6 acres of disturbance over the 126-acre project area for both the detention basin and storm sewer updates (Figure 2-1). Soil erosion and sediment control measures would be implemented before any land disturbance and in accordance with state and county requirements. Specifically, construction of the Proposed Action would comply with the General National Pollution Discharge Elimination System (NPDES) Permit for Stormwater Discharges from Construction Site Activities (Permit No. ILR10) (the General Construction Stormwater Permit), which is required for construction disturbance of 1 acre or more. In accordance with the General Construction Stormwater Permit, a stormwater pollution prevention plan (SWPPP) would be

developed for the Proposed Action, which would require the implementation during construction of measures to reduce pollutants in stormwater discharges and erosion and sedimentation from construction activities. Example control measures include minimizing areas of exposed soil and installing erosion controls such as silt fencing.

The Proposed Action would take approximately 23 months to construct and would reduce flood-related damage from the 100-year flood event for approximately 690 structures within the city.

2.2.1. STORMWATER DETENTION BASIN

A naturalized stormwater detention basin would be constructed along Myrtle Avenue between 153rd and 154th streets to provide an additional 23-acre-feet of stormwater storage capacity. The detention basin would be approximately 3.4 acres in area and 10 feet deep, with small areas in the center of the basin being up to 15 feet deep. An 8-foot-wide path would be constructed around the perimeter of the pond. To construct the detention basin, 15 existing structures along Myrtle Avenue and the Myrtle Avenue roadway between 153rd and 154th streets would be demolished and removed. Additionally, approximately 114 trees would be removed. The site would be accessed from 153rd and 154th streets and equipment would likely be staged along existing streets and paved areas. Excavated materials would be hauled off-site to a designated disposal location.

The slopes of the detention basin would be stabilized with geotextile fabric and bedding, erosion control blankets, and plantings. Emergent wetland plants, including plants that could be submerged in water, would be installed at or below the water levels of the pond. These plants would include species such as river bulrush (*Scirpus fluviatilis*) and brown fox sedge (*Carex vulpinoidea*). A wet mesic prairie seed mix, including species such as swamp milkweed (*Asclepias incarnata*) and switch grass (*Panicum virgatum*), would be planted slightly above the water level. The upper slopes of the pond would be planted with a mesic prairie seed mix, including species such as prairie dropseed (*Sporobolus heterolepis*) and butterfly weed (*Asclepias tuberosa*). The plantings would provide increased stormwater attenuation and natural pollutant removal for the pond. The area surrounding the detention pond, bounded by 153rd Street to the south, 154th Street to the north, and alleyways to the east and west, would be covered with 6 inches of topsoil and reseeded. Figure 2-1 shows the proposed detention basin and open space area.

Non-Federal Action

The proposed location of the detention basin currently includes 31 parcels, of which 16 are vacant and 15 contain residential buildings. MWRD would fund the acquisition of the 31 parcels before implementation of the FEMA-funded project. Thus, acquisition of the structures is considered a non-federal action. The Proposed Action would include the demolition of the 15 structures. Parcels and buildings to be acquired and demolished are shown in Figure 2-2.

2.2.2. STORM SEWER UPGRADES

Approximately 1,900 feet of 18-inch to 36-inch storm sewers would be constructed along 153rd Street between Myrtle Avenue and Center Avenue to convey stormwater to the newly

constructed detention basin. Additionally, approximately 2,250 feet of 24-inch to 36-inch storm sewers would be built along 153rd Street between Wood Street and Myrtle Avenue to connect with the IDOT storm sewer system. A control structure would be installed at the west end of the storm sewer system at 153rd and Wood streets to limit flows to the storm sewer to 20 cubic feet per second and ensure efficient operation of the storm sewer system and detention basin.

Additionally, approximately 700 feet of low-flow 12-inch storm sewers would be built along Vine Avenue between 153rd and 152nd streets to connect a low point of the proposed storm sewer system to the city's existing combined sewer system to the north of the project area; stormwater from the detention basin and a portion of the western side of the project area would be channeled through the Vine Avenue pipe into the existing sewer system. Approximately 5,000 feet of 12-inch to 18-inch storm sewer improvements would be constructed along the following side streets between 153rd and 154th streets: Paulina Avenue, Marshfield Avenue, Ashland Avenue, Vine Avenue, Myrtle Avenue, Loomis Avenue, Lexington Avenue, and Turlington Avenue. The maximum ground disturbance depth for storm sewer improvements would be approximately 15 feet. Equipment would be staged along existing roadways.

Most runoff in the project area would be directed by the new storm sewer improvements to flow into the proposed detention basin. Once stormwater has reached the capacity of the detention basin drain, runoff would exit the basin and flow west to Vine Avenue and then north to drain into a 36-inch storm sewer running along 152nd Street. Figure 2-1 shows proposed storm sewer improvements in the project area.

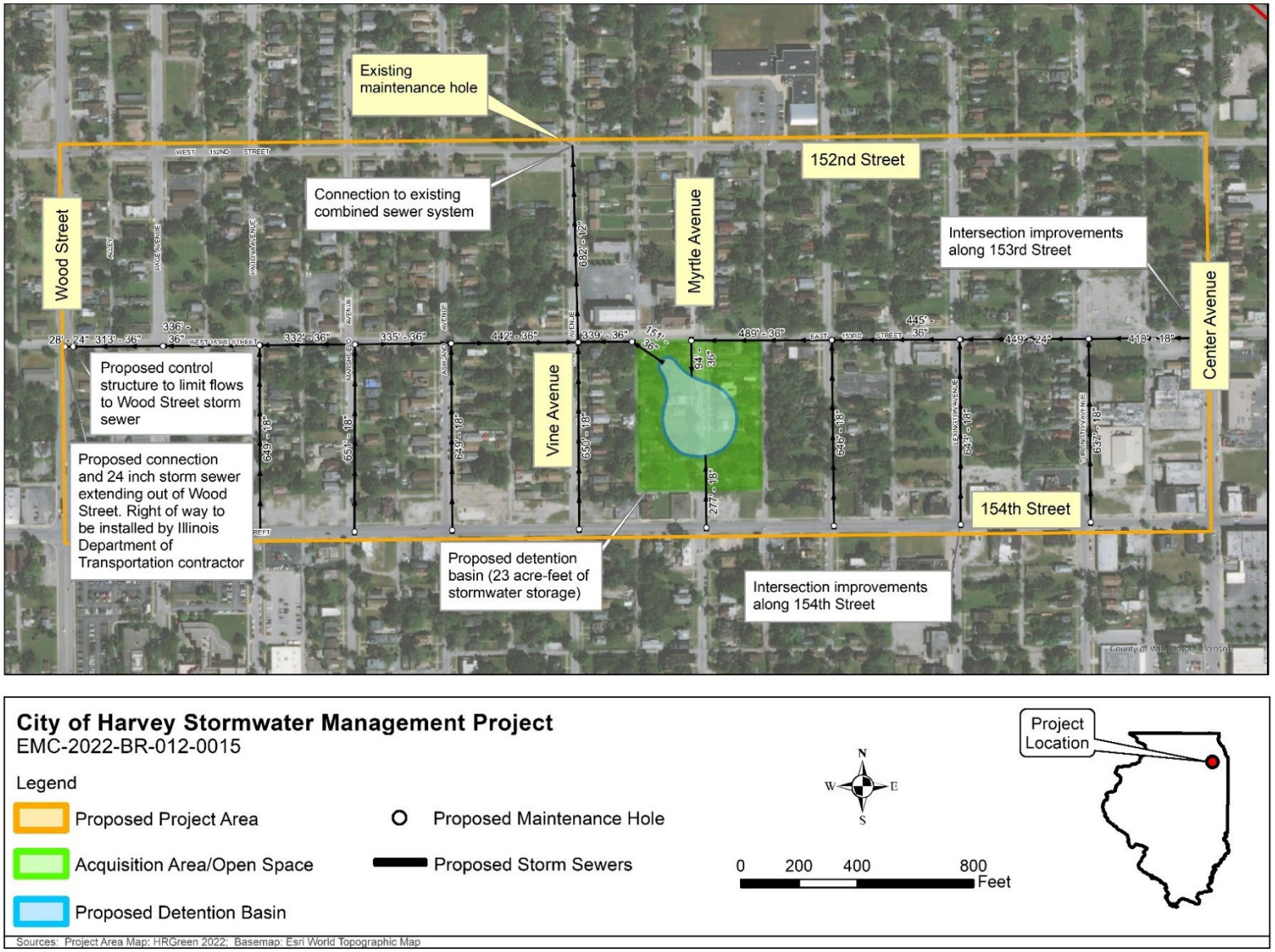

Figure 2-1. Project Area and Features

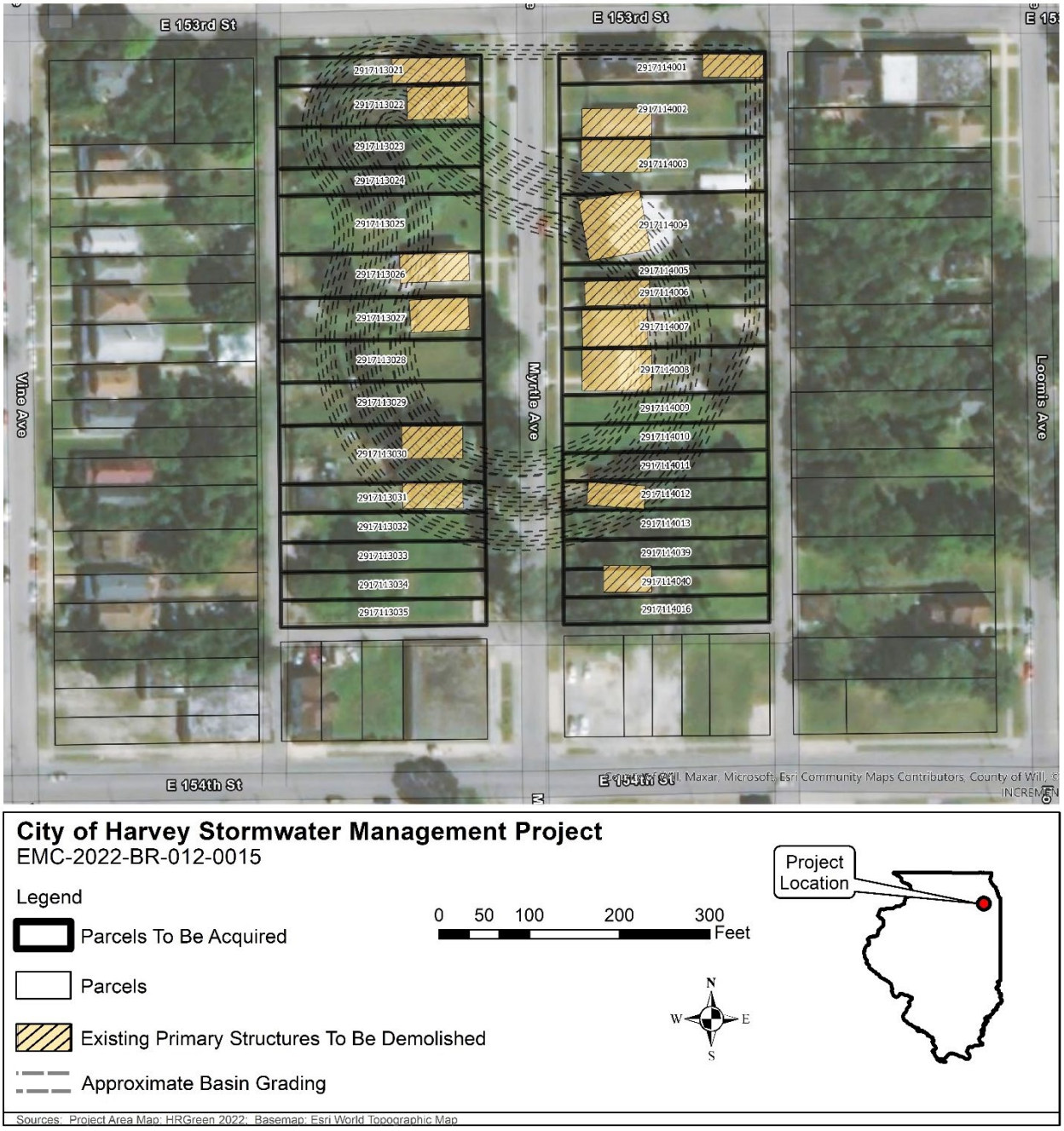

Figure 2-2. Proposed Parcels and Buildings to be Acquired and Demolished

2.3. Alternatives Considered but Eliminated from Further Consideration

2.3.1. 2022 FLOOD STUDY

The City of Harvey and MWRD considered additional alternatives to the Proposed Action based on the objectives to reduce surface flooding for the 25-year, 50-year, and 100-year storm events; maximize the reduction of impacted structures from these flood events; and eliminate or reduce basement sewer backups during a 10-year storm event. As a result of the study, two alternatives to the Proposed Action were identified. The alternatives included a stormwater conveyance-only alternative and a stormwater storage-only alternative implemented in the project area and vicinity (HRGreen 2022a).

The conveyance-only alternative would include the installation of additional conveyance pipes and relief sewers to separate storm flows from going into combined sewers via available outlets. The study found that the effectiveness of this alternative would be directly dependent on the available capacity of the five major trunk sewers underneath the CSX railroad bed that facilitate drainage for the study area. Any proposed conveyance improvements would need to connect into these trunk sewers to accommodate flow downstream into the combined sewer or Little Calumet River. However, there is a lack of capacity in these trunk sewers, which limits flood conveyance capacity. The results from this alternative concept analysis indicate that there would be only a marginal reduction in flooding for a 25-year storm event. Thus, it does not meet the city's primary objectives for flood reduction. The City of Harvey and MWRD determined that a conveyance-only option was not a viable alternative by itself to address flooding in the project area.

The storage-only alternative would include the construction of detention basins throughout the study area to reduce flooding. Because of the lack of capacity in the trunk sewers leaving the study area, the construction of detention basins would be necessary to provide enough storage to attenuate peak flood flows to reduce the stress on existing trunk sewers. However, any detention basin construction would still need to connect with the existing combined sewer system and trunk lines. Therefore, it was determined that implementing the storage-only alternative without conveyance improvements was not a viable alternative to reduce flood risk in the project area.

2.3.2. INSTALLATION OF GREEN INFRASTRUCTURE

MWRD considered implementing bioswales and rain gardens throughout the city to provide increased flood storage. However, these green infrastructure measures would not adequately address Harvey's flooding challenges because they are smaller and shallower in depth than traditional surface detention ponds and would therefore provide less flood storage for large rain events as compared to a detention basin. Further, green infrastructure measures would not address sewer overflows from combined sewers. Thus, this alternative was dismissed from further consideration.

2.3.3. INSTALLATION OF BACKFLOW VALVES

MWRD also considered installing backflow valves to help prevent combined sewers that are overwhelmed by storm events from backing up into basements. However, backflow valves do not address overland flooding issues or provide increased flood storage. Additionally, property owners would be responsible for maintaining these valves, increasing the financial and time burden on residents. Thus, this alternative was dismissed from further consideration.

2.3.4. ALTERNATIVE LOCATIONS FOR THE DETENTION POND

MWRD evaluated alternative locations for the detention basin that would not require residential displacement, primarily city-owned and vacant parcels such as the Dixie Square Mall or Lowell-Longfellow School site. The area bounded by 152nd Street on the north, Center Street on the east, 154th Street on the south, and Wood Street on the west was one of the areas identified during the study for a potential detention basin. This location is one of the areas in Harvey where significant flooding occurs repeatedly. The evaluation found that the basin needs to be in the general area of Myrtle Avenue between 153rd and 154th streets to allow flow by gravity into the IDOT Wood Street storm sewer system. Moving the detention basin to areas that would not require displacement, such as the Dixie Square Mall or Lowell-Longfellow School site, would not relieve flooding in the project area. Also, because of utility conflicts and existing topography of the area, the Dixie Square Mall and Lowell-Longfellow School site would not be suitable locations to address flooding in the project area. Therefore, MWRD did not find any alternative locations within the project area that would achieve the same flood control benefits as the Proposed Action and that would not require some displacement.

SECTION 3. Affected Environment and Consequences

This section describes the environment potentially affected by the alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts. When possible, quantitative information is provided to establish potential impacts; the significance of potential impacts is based on the criteria listed in Table 3.1. The study area generally includes the project area and access and staging areas needed for the Proposed Action. If the study area for a particular resource category is different from the project area, the differences will be described in the appropriate subsection.

As discussed in Section 2.2., MWRD would fund the acquisition of 31 parcels before implementation of the FEMA-funded project. Impacts from the non-federal action are analyzed in Section 3.5.4, Land Use and Zoning, and Section 3.5.5, Environmental Justice. The non-federal action is not expected to have impacts on any other physical, biological, or socioeconomic resource and is thus not analyzed in any other impact section.

Table 3.1. Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
Negligible	The resource area would not be affected, or changes or benefits would either be nondetectable or have impacts that would be slight and local if detected. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse impacts.
Moderate	Changes to the resource would be measurable and have either localized or regional-scale impacts/benefits. Impacts would be within or below regulatory standards, but historic conditions would be altered on a short-term basis. Mitigation measures would be necessary to reduce any potential adverse impacts.
Major	Changes would be readily measurable and would have substantial consequences on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse impacts would be required to reduce impacts, though long-term changes to the resource would be expected.

3.1. Resources Considered and Dismissed

Based on a preliminary screening of resources and the project's geographic location, the following resources do not require a detailed assessment:

- *Seismic Hazards.* EO 13717, *Establishing a Federal Earthquake Risk Management Standard*, does not apply because there is low seismic risk in the project area based on seismic hazard maps developed by the U.S. Geological Survey ([USGS] 2018). *See Section 7 for references listed by author or agency and year of publication*.

- *Farmland Soils.* The U.S. Census Bureau (2010) designated the City of Harvey as part of the Chicago Urbanized Area. Therefore, the Farmland Protection Policy Act of 1981, 7 U.S.C. §§ 4201 *et seq.*, is not applicable to the No Action or Proposed Action alternatives, and no further compliance work is necessary (7 C.F.R. § 658.2[a]).

- *Coastal Barrier Resources System (CBRS).* The Coastal Barrier Resources Act, 16 U.S.C. §§ 3501–3510, is not applicable because the project is not within or near a CBRS unit (U.S. Fish and Wildlife Service [USFWS] 2019a).

- *Coastal Zone Management.* The Coastal Zone Management Act, 16 U.S.C. §§ 1451–1464, ch. 33, enacted in 1972, is not applicable. Although the project area is near the coastal zone, which is east of the City of Harvey and north of the city along the Little Calumet River (Illinois Department of Natural Resources [IDNR] 2011), the law does not apply because the project area is not within the coastal zone.

- *Sole-Source Aquifers.* There are no sole-source aquifers regulated by the Safe Drinking Water Act of 1974, 42 U.S.C. §§ 300f *et seq.*, near the project area (EPA 2024f).

- *Essential Fish Habitat.* The Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801 *et seq.,* does not apply because there are no Habitat Areas of Particular Concern and no essential fish habitat areas identified in the project area according to the National Oceanic and Atmospheric Administration Essential Fish Habitat Mapper (National Marine Fisheries Service [NMFS] 2021).

- *Wild and Scenic Rivers.* The Wild and Scenic Rivers Act, 16 U.S.C. §§ 1271 *et seq.*, is not applicable because there are no federally designated wild and scenic rivers in the project area based on a review of the National Wild and Scenic Rivers System website maintained by the National Park Service (National Wild and Scenic Rivers System 2024).

3.2. Physical Environment

3.2.1. GEOLOGY, TOPOGRAPHY, SOILS

Soils in the project area were identified using the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey (accessed June 2024). Most of the project area consists of Milford-Martinton complex silty clay loam, followed by silty clays and loams. These soil types drain poorly and are characterized by slopes ranging from 0 to 6 percent (NRCS 2024). Underlying bedrock in the project area is more than 6 feet underground and consists of the Wilhelmi formation and Oneota dolomite along the Kanakee Arch (Illinois State Geological Survey 2005).

Bedrock in the Chicago area is not near the ground surface and is typically buried by clay (Hudson 2004; University of Illinois Urbana Champaign 2010); historical accounts indicate that bedrock is about 80 feet below ground surface (Dubey 2017). Topography in the project area was determined using USGS topographic maps. The project area topography is flat and the elevation in the project area is static at around 600 feet (USGS 2024).

Alternative 1 – No Action

Under the No Action alternative, there would be no construction-related short-term adverse impact on soils, geography, or topography. However, in the long term, the risk of flooding would not be reduced. Periodic flooding would not be expected to affect geology or alter topography because of the gentle slopes in the area. However, floodwaters would cause debris and sediment deposits on the ground surface that could physically damage soil and smother and kill vegetation. Loss of vegetation could contribute to erosion in the flooded area. The No Action alternative would have minor long-term adverse impacts on soils in the project area and vicinity, depending on the extent, frequency, and duration of flood events.

Alternative 2 – Proposed Action

The Proposed Action would have minor short-term adverse impacts on soils and topography during the construction period, which is expected to last up to 36 months. The Proposed Action area would require earthwork and grading over approximately 3.4 acres for the detention pond and open space area around the pond. Stormwater improvements would be installed throughout the remainder of the 126-acre project area, as shown in Figure 2-1. These grading activities would disturb approximately 6 acres in total and would have the potential to expose soils to erosion.

Erosion and sediment control measures would be implemented in accordance with national, state, and county requirements. Specifically, construction of the Proposed Action would comply with the General Construction Stormwater Permit, as discussed in Section 2.2, which is required for construction disturbance of one or more acres. In accordance with the General Construction Stormwater Permit, the county would develop a SWPPP for the Proposed Action, which would require implementation of measures to reduce pollutants in stormwater discharges and prevent sediment from leaving the construction site. Example control measures would include minimizing areas of exposed soil and installing erosion controls.

The maximum ground disturbance depth would be 15 feet for installation of the detention pond and storm sewer improvements and approximately 10 feet for structure demolition, including basement removal. Bedrock in the area is expected to be deep and below the excavation levels for the project. Thus, construction of the conveyance improvements and demolition of structures would not impact geology.

The Proposed Action would have minor long-term benefits on soils from the reduced risk of flooding and associated risk of sediment and debris deposition that could kill vegetation. Additionally, the Proposed Action would include planting wetland vegetation in the detention basin, as discussed in Section 2.2.1. Wetland plants are adapted to soils that are saturated for a significant part of the

growing season and would reduce soil erosion by holding soil in place with their roots during floods (EPA n.d.). The Proposed Action would also have negligible long-term benefits on topography from reshaping the detention basin area to provide increased flood storage.

3.2.2. WATER RESOURCES AND WATER QUALITY

Water resources include surface water, groundwater, stormwater, and drinking water (wetlands are evaluated in Section 3.3.2). Water quality is the condition of a water body as it relates to beneficial uses such as recreation, scenic enjoyment, human health, and aquatic habitat. Water quality is regulated by both the Clean Water Act (CWA) and Illinois state statutes. It is monitored for physical, chemical, and biological factors (EPA 2024d).

The CWA of 1977, 33 U.S.C. §§ 1251 *et seq.*, regulates the discharge of pollutants into water, with various sections falling under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and EPA or as delegated to the state. Section 303(d) of the CWA requires states to identify waters where current pollution control technologies alone cannot meet the water quality standards set for that water body. Under Section 303(d), states must develop Total Daily Maximum Loads (TMDLs) for impaired water bodies. A TMDL establishes the maximum amount of a pollutant or contaminant allowed in a water body and serves as a planning tool. The Illinois Environmental Protection Agency (IEPA) manages the TMDL List and the Inventory of Impaired Waters for the state of Illinois in accordance with Section 303(d) of the CWA.

Under Section 402 of the CWA, regulation of both point and nonpoint pollutant sources, including stormwater runoff, has been delegated to the state and is administered by IEPA. The state issues a General Construction Stormwater Permit, and projects must request authorization to work under this permit when there would be more than 1 acre of ground disturbance. As part of this NPDES permit, a SWPPP is required.

Section 404 of the CWA establishes USACE permit requirements for discharge of dredged or fill materials into waters of the United States. USACE administers Section 404 of the CWA. Activities that require a Section 404 permit also usually require a Section 401 certification. IEPA administers Section 401 of the CWA and issues water quality certifications for federally permitted activities to ensure they will not violate state water quality standards.

The Illinois Groundwater Protection Act (IGPA), 415 Ill. Comp. Stat. § 55/1 *et seq.*, protects groundwater as a natural and public resource, with special provisions targeting drinking-water wells. The IGPA applies to activities that have the potential to impact groundwater quality, such as hazardous waste handling and storage, solid waste disposal, and pesticide and fertilizer use (IEPA 1988). For these activities, the IGPA requires minimum setback zones of 200 to 400 radial feet around community water-supply wells and prohibits new potential primary and secondary sources of contamination and new potential routes of contamination within these areas. Maximum setback zones of 1,000 feet may be required around community water-supply wells depending on factors such as the regulated activity or the regional groundwater gradient (IEPA 1995, 2024a).

The MWRD of Greater Chicago, Ill., Watershed Management Ordinance (WMO) (as amended May 2, 2024) provides uniform minimum stormwater management regulations for Cook County, excluding the City of Chicago. The WMO covers the construction of stormwater and sewer systems, drainage, and detention basins, and it requires measures related to floodplain management, erosion and sediment control, and protection of wetland and riparian areas. The WMO requires that erosion and sediment control measures are included in the development site plan and that development cannot increase flood elevations or decrease conveyance capacity on other properties, increase flood velocity, impair hydrologic function, or degrade water quality (MWRD 2024b).

The project area is within the Little Calumet River watershed, in Hydrologic Unit Code 071200030405, and lies west of Lake Michigan (USGS 2024). The project area does not contain any surface water resources (USFWS 2024h). However, stormwater runoff within the project area flows south through the Calumet Union Drainage Ditch, and then to the Little Calumet River. The Calumet Union Drainage Ditch is approximately 1 mile south of the project area and the Little Calumet River about 1.4 miles northeast of the project site (MWRD 2024a). The Little Calumet River is listed in the 303(d) list of impaired waters. Sources of impairment include bacteria and other microbes, degraded habitat, metals, nitrogen and/or phosphorus, pesticides, and sediment (EPA 2024d). Thus far, no improvements to stormwater quality in the project area have been conducted since the original storm sewer system was installed prior to the 1900s.

There are no public or private water well systems in the project area. There is one water well directly south of the project area, about 135 feet south of East 154th Street and 120 feet west of Center Avenue. A potential aquifer less than 50 feet below ground surface and major rock aquifer less than 500 feet below ground surface underlie the project area (Illinois State Geologic Survey 2024). As mentioned in Section 3.1, there are no sole-source aquifers underlying or near the project area (EPA 2024f).

Alternative 1 – No Action

Under the No Action alternative, there would be no construction-related short-term impact on surface water or groundwater quality. The No Action alternative would not reduce the risk of flooding in the project area. During flood events, floodwaters near the project area could carry sediments and pollutants, such as oils and grease from roadways, into surface waters such as Calumet Union Drainage Ditch and the Little Calumet River. Further, flooding in the project area could result in sewer backups, as has happened during previous storm events, resulting in water quality contamination and human exposure to contaminated floodwaters. The Little Calumet River is listed in the 303(d) Impaired Waters list with issues such as bacteria and microbes, sediments, and fertilizers. Flooding in the project area would continue to contribute to these impairments. The No Action alternative could result in pollutants percolating into and thereby contaminating groundwater supply. Thus, the No Action alternative would have a minor to moderate long-term adverse impact on surface water and groundwater quality depending on the duration and scale of flooding.

Alternative 2 – Proposed Action

Although there are no surface waters within the project area, the Proposed Action could have minor short-term adverse impacts on the quality of nearby surface waters from construction-related activities, which could result in the release of pollutants or sediments into stormwater that would flow into these waters. Construction activities would be temporary, and MWRD would manage construction to prevent pollutants from entering stormwater runoff and surface waters. MWRD would implement a SWPPP before construction, and all construction activities would be conducted in accordance with the NPDES Illinois General Construction Stormwater Permit and MWRD WMO. No in-water work would occur as part of the Proposed Action; therefore, a CWA Section 404 permit and 401 water quality certifications would not be required.

There are no public or private water wells in the project area. There is one water well directly south of the project area, south of East 154th Street. Because of the nature of the Proposed Action activities, and because the well is over 100 feet away from the project area and is a noncommunity rather than a community well, the IGPA-required setbacks would not apply (IEPA 1995, 2024a). A potential aquifer less than 50 feet below the ground surface underlies the project area. Because of the water quality controls mentioned previously, construction would have negligible short-term adverse impacts on groundwater quality.

The Proposed Action would have minor to moderate long-term benefits on water quality by increasing flood storage and decreasing the rate of flow of runoff to the Calumet Union Drainage Ditch and Little Calumet River. By increasing flood storage within the project area, the Proposed Action would reduce the risk of flooding within residential and business districts in and near the project area and would thus reduce the risk that floodwaters would transfer sediments and pollutants, such as oils from roadways or fecal matter from sewer backups, into surface waters. Additionally, the detention basin would be planted with native wetland plants to provide increased stormwater attenuation and natural pollutant removal, further benefitting water quality (EPA n.d.).

3.2.3. FLOODPLAIN MANAGEMENT (EXECUTIVE ORDER 11988)

EO 11988, *Floodplain Management*, requires federal agencies to minimize occupancy and modification of the floodplain. Specifically, EO 11988 prohibits federal agencies from funding construction in the 100-year floodplain (1-percent annual chance of flood) unless there are no practicable alternatives. FEMA's regulations for complying with EO 11988 are found in 44 C.F.R. Part 9.

As discussed in Section 3.2.2, the MWRD WMO provides uniform minimum stormwater management regulations for Cook County and requires measures related to floodplain management, erosion and sediment control, and protection of wetland and riparian areas. The WMO requires that erosion and sediment control measures are included in the development site plan and that development cannot increase flood elevations or decrease conveyance capacity on other properties, increase flood velocity, impair hydrologic function, or degrade water quality (MWRD 2024b).

The Illinois Rivers, Lakes, and Streams Act (615 Ill. Comp. Stat. § 5/4.9 *et seq.*) requires permits for any construction within a floodway in Cook, DuPage, Kane, Lake, McHenry, and Will counties. All projects within designated floodways are subject to the Floodway Construction in Northeastern Illinois regulations (17 Illinois Administrative Code [Ill. Admin. Code] Part 3708). Permits for floodway construction are issued by IDNR and require project proponents to follow conditions for specific project types, such as utility and storm sewer outfall and outlet channel projects. According to the regulations, authorized projects must not increase the elevation of the floodway, result in erosion, or result in aboveground structures in the floodway.

According to Flood Insurance Rate Map Panels 17031C0732J and 17031C0731J, both effective August 19, 2008, most of the project area is within an area of minimal flood hazard (Zone X). The northeastern part of the project area is in Zone AH, which is an area with a 1-percent annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet (FEMA 2024a) (Figure 3-1).

Despite being categorized mainly as a low-risk flood zone per FEMA mapping, between 2010 and 2020, city residents filed 57 National Flood Insurance Program (NFIP) claims per 10,000 people, whereas the remaining areas of the Calumet region filed 6 NFIP claims per 10,000 people over the same time period (Center for Neighborhood Technology 2021). As discussed in Section 1.3, the area is prone to flooding because it is relatively flat or topographically depressed (allowing water to pool) and is heavily urbanized (i.e., there is a high proportion of impervious surface cover in the project vicinity). Additionally, originally installed combined sewer infrastructure does not have the capacity needed to handle the increased population and increased heavy rain events.

Alternative 1 – No Action

The No Action alternative would have no short-term impact on floodplains because construction would not occur. In the long term, floodplain storage capacity would not be increased. Thus, the risk of flooding would not be reduced, and because of climate change, flood events would increase in intensity and duration (as discussed in Sections 2.1 and 3.2.5). Natural functions of floodplains including maintenance of water quality (as discussed in Section 3.2.2) and habitat values (as discussed in Sections 3.3.1 and 3.3.2) would be adversely affected by flooding. The project area and vicinity would continue to be at risk of loss of life and property damage, such as combined sewer backups into basements, during future storm events. Therefore, the No Action alternative would have moderate long-term adverse impacts from periodic flooding and impacts on people and property near the project area.

Alternative 2 – Proposed Action

The Proposed Action would result in minor short-term adverse impacts on the 100-year floodplain because of construction in the floodplain. As shown in Figure 3-1, the northeast part of the project area is within the 100-year floodplain (Zone AH). Construction activities could cause an accidental release of hazardous waste (e.g., fuels) from equipment use and ground-disturbing activities could cause erosion. Further, there is a potential for unknown contamination to be present and exposed during excavation and grading activities. Because the Proposed Action would involve more than

1 acre of ground disturbance, a General Construction Stormwater Permit would be required, as discussed in Sections 3.2.1 and 3.2.2. This permit would require implementation of measures to reduce pollutants in stormwater discharges and erosion and sedimentation from construction activities. Because there would be no construction in the floodway, a permit from IDNR for floodway construction, per the Illinois Rivers, Lakes, and Streams Act, would not be required.

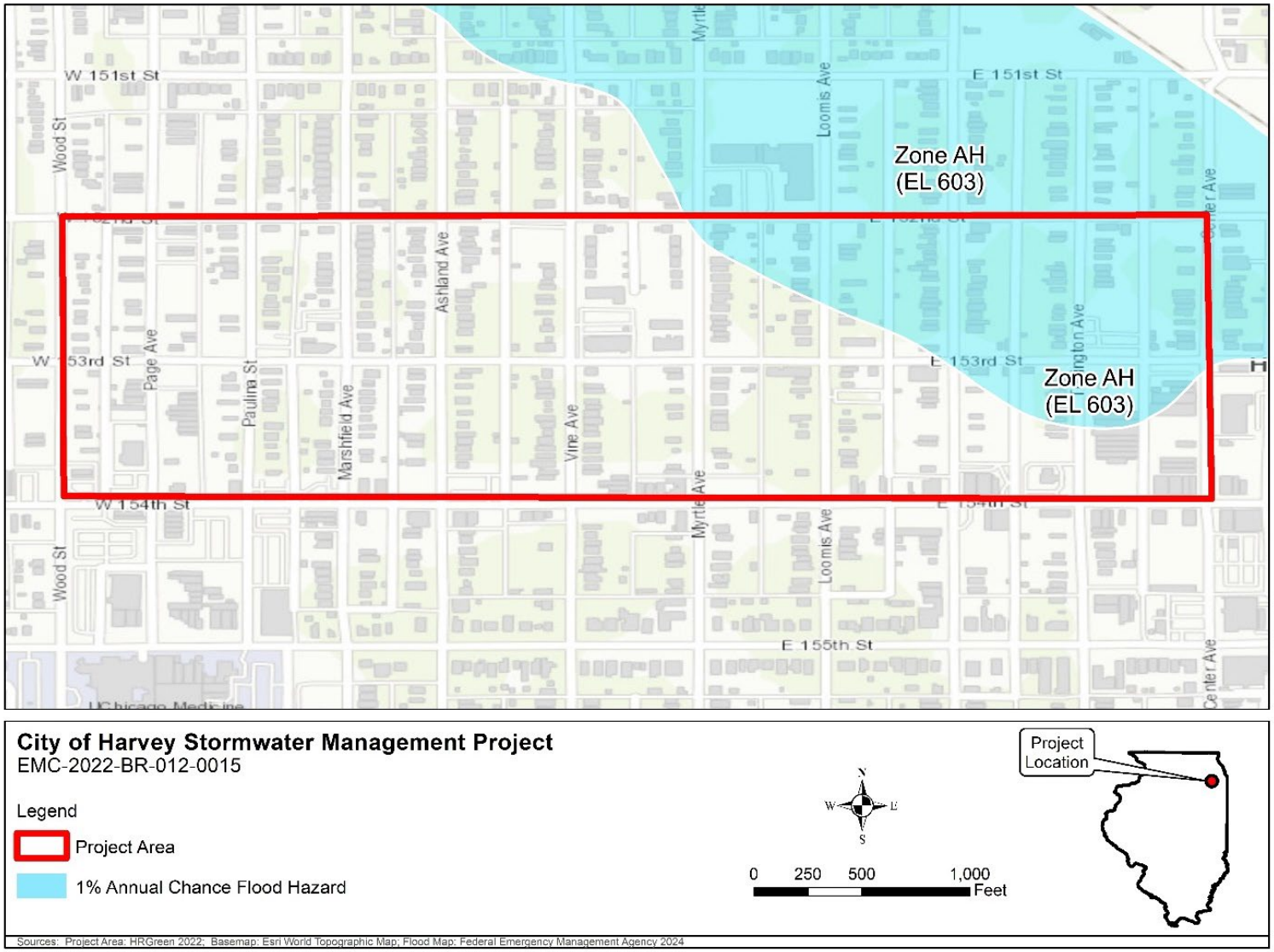

Figure 3-1. Project Area Floodplains

The Proposed Action could result in minor long-term adverse impacts on floodplains because of disturbance and excavation of the floodplain that would alter the path of water during high-water events. Additionally, trees, vegetation, concrete, and other materials would be removed from the site during grading activities, which could result in exposed soils that could erode within the floodplain. Removal of trees would temporarily reduce habitat functions of the floodplain. MWRD would obtain a General Construction Stormwater Permit, which requires implementation of measures to reduce erosion and sedimentation from construction activities. Excavated materials would be hauled off-site to a licensed location and would not be stored or disposed of in the floodplain. MWRD would conduct any activities that would occur within the floodplain in accordance with Cook County's Floodplain Management Regulations and the MWRD WMO, which requires that new development cannot increase flood elevations or velocities. MWRD would coordinate with the local floodplain administrator and IDNR about any necessary permits to conduct activities within the floodplain.

The Proposed Action would result in moderate long-term benefits on floodplains and would reduce the risk of loss of life and property damage from flooding. By increasing floodwater storage capacity by 23 acre-feet with the addition of the detention basin, adding approximately 4,850 feet of new storm sewers, and improving approximately 5,000 feet of existing storm sewers, the Proposed Action would reduce flood risks in the project area and vicinity. According to the hydraulic modeling conducted for the Proposed Action (HRGreen 2022b), implementation of the Proposed Action would reduce flood risk in the immediate project area and remove 107 homes from the 25-year floodplain and 108 homes from the 100-year floodplain. Under the 100-year flood event, the Proposed Action would reduce the depth and duration of flooding as well as the frequency of sewer backups for 690 structures in the project area and vicinity (HRGreen 2022b). Both reductions would be beneficial toward human health and property. Further, the detention basin would be planted with wetland plants that would provide increased stormwater attenuation and natural pollutant removal, therefore supporting the natural values and functions of floodplains (EPA n.d.).

The eight-step decision-making process for floodplains is included in Appendix A.

3.2.4. AIR QUALITY

The Clean Air Act (CAA), as amended, 42 U.S.C. §§ 7401 *et seq*., requires EPA to establish National Ambient Air Quality Standards (NAAQS) for six pollutants harmful to human and environmental health, namely ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter (PM), which includes coarse PM that is less than 10 micrometers in diameter and fine PM that is less than 2.5 micrometers in diameter (40 C.F.R. Part 50). Fugitive dust, which is considered a component of PM, can also affect air quality. Fugitive dust is released into the air by wind or human activities, such as construction, and can have human and environmental health impacts. Federally funded actions in nonattainment and maintenance areas for these pollutants are subject to conformity regulations (40 C.F.R. Parts 51 and 93) to ensure that emissions of air pollutants from planned federally funded activities would not cause any violations of the NAAQS, increase the frequency or severity of NAAQS violations, or delay timely attainment of the NAAQS or any interim milestone. Under the general conformity regulations, a determination for federal actions is required for each criteria pollutant or precursor in nonattainment or maintenance areas where the action's

direct and indirect emissions have the potential to emit one or more of the six criteria pollutants at rates equal to or exceeding the prescribed de minimis rates for that pollutant.

EPA's Green Book provides detailed information about area NAAQS designations, classifications, and nonattainment statuses. According to the Green Book (updated September 30, 2024), Cook County is currently in moderate nonattainment status for 8-hour ozone, and it is in maintenance status for sulfur dioxide and lead; all other criteria pollutants (carbon monoxide, PM, and nitrogen dioxide) are in attainment (EPA 2024c).

Alternative 1 – No Action

Under the No Action alternative, temporary construction-related emissions would not occur because the storm sewer upgrades and detention basin would not be constructed. Therefore, there would be no short-term impacts on air quality.

In the long term, floodplain storage capacity would not be increased. Thus, the risk of flooding would not be reduced. Periodic flood events could result in road closures, causing diversion of vehicles away from flooded areas. Construction equipment would be used to repair flood damage. Emissions from equipment used for flood-related repairs and additional vehicle emissions generated by flood-related road detours (i.e., longer trips result in more emissions) could result in negligible emissions of criteria pollutants within this nonattainment area. These emissions would be temporary, localized, and unlikely to result in a NAAQS exceedance. Therefore, there would be a negligible long-term adverse impact on air quality from emissions resulting from equipment used for flood-related repairs and additional vehicle emissions generated by flood-related road detours.

Alternative 2 – Proposed Action

Under the Proposed Action, construction of the detention basin and storm sewer upgrades would have minor short-term adverse impacts on air quality. During construction, on-site construction equipment and off-site construction-related hauling and delivery and worker commute vehicles would produce emissions that could increase the levels of some pollutants, including carbon monoxide, volatile organic compounds, nitrogen dioxide, ozone, and PM. On-site construction equipment would be predominantly diesel-fueled. EPA mandates the use of ultralow sulfur diesel fuel for all highway and nonroad diesel engines; thus, sulfur dioxide emitted from the Proposed Action's construction activities would be negligible. On-site earthmoving, excavation, demolition, grading, and other ground-disturbing activities would generate dust and would be the primary construction-related sources of PM. Off-site hauling and delivery vehicles would be predominantly diesel-fueled while worker commute vehicles would be predominantly gasoline-fueled. Gasoline engines produce relatively high levels of carbon monoxide as compared to other combustion sources. Construction of the Proposed Action would take up to 23 months, so vehicle and equipment use and ground-disturbing activities in the project area, would be temporary and localized.

Applicable best management practices (BMPs) from EPA's Construction Emission Control Checklist (included in Appendix B) would be implemented to mitigate air quality impacts. BMPs include, but are not limited to, the following:

- Keep vehicles and equipment idling times as short possible.
- Regularly maintain diesel engines to keep exhaust emissions low. Follow the manufacturer's recommended maintenance schedule and procedures.
- Cover or wet areas of exposed soils to reduce fugitive dust.
- Prevent spillage of soil and excavated material, and limit speeds to 15 miles per hour when hauling material and operating non-earthmoving equipment on areas of exposed soil within the project area. Limit speed of earthmoving equipment to 10 miles per hour.

Because of the short-term nature of air quality impacts and implementation of BMPs, the potential emissions from implementation of the Proposed Action would be below the de minimis rates for the General Conformity Rule. Therefore, the project would not require a conformity determination.

There would be no long-term impacts on air quality from implementation of the Proposed Action, as it would not include a long-term source of permanent emissions. The Proposed Action would reduce the risk of future flooding damage, thereby reducing the need for future repair construction work and associated air quality impacts. Therefore, the Proposed Action would result in a negligible long-term beneficial air quality impact.

3.2.5. CLIMATE

Climate change is defined by EPA as any changes in the measures of global or regional climate patterns lasting for an extended period, including major changes in temperature, precipitation, or wind patterns that occur over several decades or longer. Anthropogenic climate change is climate change attributable to human activities, most typically consisting of human-caused increased levels of atmospheric greenhouse gases (GHGs). Climate change exacerbates existing environmental stressors and disrupts natural, economic, and social systems through extreme temperature fluctuations and changes to weather patterns.

CEQ published the *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change* on January 9, 2023 (88 Fed. Reg. 1196). This guidance provides best practices for climate change analyses in the context of NEPA, including the consideration of GHG emissions and climate change impacts during the identification of alternatives, quantification of a proposed action's projected GHG emissions or reductions using best available data, and contextualization of GHG emissions based on their social cost, a metric that translates an individual action's GHG emissions into a dollar value representing the costs of global climate change-related damage. The social cost of GHG emissions (SC-GHG) is based on the action's contribution to total global GHG emissions and the anticipated total global damages that may be anticipated to result from climate change (88 Federal Register 1196). SC-GHG estimates represent the societal value or cost of GHG emissions changes resulting from actions that impact cumulative global emissions in a small or marginal way. EPA's Report on the SC-GHG was published in November 2023 (EPA 2023a). The report provided new estimates for SC-GHG, which reflect recent advances in the scientific

literature on climate change and its economic impacts. The report incorporates recommendations made by the National Academies of Science, Engineering, and Medicine. EPA offers three discount rate paths (1.5 percent, 2 percent, and 2.5 percent) to account for the relationship between economic growth and discounting, recognizing the uncertainty surrounding discount rates over long time horizons (EPA 2023a). For this analysis, the median discount rate of 2 percent was used.

According to U.S. Climate Data, which collects data on average climate conditions in cities around the country, the temperature in Park Forest, Illinois, about 9 miles south of the City of Harvey, ranges from an average low of 16 degrees Fahrenheit in January to an average high of 84 degrees Fahrenheit in July. The area receives an average of approximately 41 inches of precipitation annually, which falls throughout the year. The highest precipitation levels occur in late spring and summer, and the lowest occur in winter. The area receives an average of approximately 28 inches of snowfall annually, which falls throughout winter and early spring. The highest snowfall levels occur in winter (U.S. Climate Data 2024).

The climate across the United States is changing, including in the Midwest. Between 1900 and 2010, temperatures increased in the region by over 1.5 degrees Fahrenheit. Temperatures are projected to continue increasing across the Midwest at an accelerating rate. In addition to increasing temperatures, climate change is intensifying storm systems and leading to greater precipitation across the region. U.S. Global Change Research Program projections indicate that precipitation will continue to increase, particularly in the winter and spring seasons (EPA 2014).

Alternative 1 – No Action

Under the No Action Alternative, temporary construction related GHG emissions would not occur because the detention basin and storm sewer upgrades would not be constructed.

However, as described previously, climate change is anticipated to increase the frequency and intensity of precipitation events in the Midwest, resulting in higher-intensity storm systems and increased frequency of flooding and storm events. Thus, the No Action alternative would not effectively protect against climate change. As mentioned in Section 3.2.4, periodic flood events could result in road closures, causing traffic congestion and diversion of vehicles away from flooded areas. Equipment use for flood-related repairs and additional vehicle emissions generated by flood-related road detours (i.e., longer trips result in more emissions) could result in negligible additional emissions of greenhouse gases. Because the No Action alternative would result in intermittent emissions from the use of construction equipment for flood-related repairs and would not improve community resilience to climate change, it would have moderate long-term adverse impacts related to climate change.

Alternative 2 – Proposed Action

Under the Proposed Action, construction of the detention basin and storm sewer upgrades would have minor short-term adverse construction impacts related to GHG emissions. The Proposed Action would result in temporary GHG emissions from the operation of vehicles and equipment with diesel and gasoline engines. Table 3.2 presents a breakdown of GHG emissions from the anticipated

construction activity of the Proposed Action. Construction of the Proposed Action is expected to produce approximately 2,980 metric tons of GHG emissions. These GHG emissions are comparable to emissions from other common sources and are roughly equivalent to the GHGs generated by the operation of 709 gasoline-powered passenger vehicles driven for one year or the electrical demand of 588 homes over one year (EPA 2023b). Applicable BMPs implemented to mitigate air quality impacts would also serve to reduce GHG emissions from construction. Reductions associated with these BMPs are not accounted for in the Proposed Action GHG emission or social cost estimates. A detailed breakdown of assumptions, GHG, and SC-GHG calculations is provided in Appendix B.

Table 3.2. Short-Term Construction Greenhouse Gas Emissions

Equipment Type	Carbon Dioxide Emissions (metric ton)	Methane Emissions (metric ton)	Nitrogen Dioxide Emissions (metric ton)	CO_2e[1] Emissions (metric ton)
On-road	476	<1	<1	482
Off-road	2,494	<1	<1	2,499
Total[2]	**2,970**	**<1**	**<1**	**2,981**

Notes:

[1] CO_2e is the mass of carbon dioxide emissions with the same global warming potential as one unit of mass of another GHG.

[2] Totals may not be exact because of rounding.

< = Less than.

The total SC-GHG were estimated, in millions of adjusted 2023 U.S. dollars ($), based on projected GHG emissions from construction. The total SC-GHG for the Proposed Action were estimated to be approximately $717,000, as shown in Table 3.3. Social costs represent an estimate of the dollar value of global climate-related damage attributable to the project's incremental contribution to global GHG emissions. These costs would be borne by global populations most vulnerable to climate change impacts, including historically underserved populations, and may or may not necessarily be borne by populations living and working near the project area. Table 3.3 summarizes the SC-GHG for the construction activity anticipated from the Proposed Action. Appendix B provides a detailed breakdown of the SC-GHG calculations and additional details on assumptions.

Table 3.3. Social Cost of Greenhouse Gas in Millions of 2023 Dollars

GHG[1]	Proposed Action SC-GHG in Millions of Adjusted 2023 Dollars[2]
Emissions in 2025	
Carbon Dioxide	$0.401
Methane	<$0.001
Nitrous Oxide	$0.001

GHG[1]	Proposed Action SC-GHG in Millions of Adjusted 2023 Dollars[2]
Emissions in 2026	
Carbon Dioxide	$0.313
Methane	<$0.001
Nitrous Oxide	$0.001
Total social cost of GHG[3]	**$0.717**

Notes:

[1] *The social cost of GHG is a global damage cost estimate and may not represent project-related climate-damage costs or cost reductions to communities in the project area specifically. While projections are based on the best available science at the time of publication, social cost of GHG estimates may underestimate actual climate-damage costs because of various climate-damage categories not being considered (such as ocean acidification).*

[2] *U.S. Bureau of Labor Statistics does not have complete 2024 dollar-value data currently. Values from 2023 were used as a surrogate.*

[3] *Total may not be exact because of rounding.*

The BMPs described in Section 3.2.4 would be implemented to reduce emissions from equipment use. GHG-generating construction activities would be temporary and would last up to 23 months. Thus, the Proposed Action would have minor short-term adverse impacts related to GHG emissions during construction.

The Proposed Action would not include a new long-term source of GHG emissions. However, the Proposed Action would include long-term GHG emission benefits, as the planting of vegetation in the detention basin would result in the sequestration of carbon emissions. There are uncertainties in estimating the precise quantities of carbon which would be sequestered by an individual vegetated detention basin; thus, this benefit has not been quantified in this analysis (EPA 2023c). In the long term, the Proposed Action would be expected to result in benefits with respect to GHG and climate change impacts and would not exacerbate climate impacts on underserved communities. The Proposed Action would strengthen the City of Harvey's resilience to climate change impacts, particularly increased precipitation events, by providing increased flood storage. The Proposed Action's anticipated reduction in costs associated with flood-related damage would provide more long-term benefit than the action's relatively small short-term construction-related social costs. Thus, the Proposed Action would result in minor to moderate long-term benefits by increasing community resilience to climate change impacts.

3.3. Biological Environment

3.3.1. TERRESTRIAL AND AQUATIC ENVIRONMENT

IDNR is responsible for the conservation of wildlife resources in the state through the implementation of a suite of wildlife management laws; these include the Wildlife Code (520 Ill. Comp. Stat. § 5/2.37), Wildlife Habitat Management Areas Act (520 Ill. Comp. Stat. § 20), and the Wildlife Conservation Measures and Practices regulations (17 Ill. Admin. Code, Part 635). IDNR

developed the Illinois Wildlife Action Plan, which is designed to maintain and improve conditions of Species in Greatest Conservation Need and their habitats (IDNR 2005, 2022). Section 250.220 of the Illinois Administrative Code, Special Application of Herbicides to Control Invasive Plants on Public Lands, is part of the Illinois Pesticide Act (415 Ill. Comp. Stat. § 60) and regulates herbicide use on publicly owned land.

EO 13112, *Invasive Species*, requires federal agencies to prevent the introduction of invasive species and provide for their control to minimize the economic, ecological, and human health impacts caused by invasive species. Invasive plants can alter an area's diversity for both plant and animal life by dominating areas where they have become established and crowding out native vegetation (U.S. Forest Service 2023).

The project area is in the Chicago Lake Plain Region, which was historically characterized by a mosaic of bluestem prairie and oak-hickory forest (EPA 2006). Before the region was developed, a mixture of northern swamp forests dominated by pin oak, wet prairies, bulrush-cattail marshes, and low sand dune prairies with black and white oak occurred in the area (EPA 2006). However, almost all the natural areas within the region have since been replaced by agricultural, residential, commercial, and industrial land uses, though some state parks and natural areas preserve the original character of the area.

The project area is in a suburban development that was established in 1891 (City of Harvey 2024a). Consequently, the project area is currently dominated by introduced and invasive plant species, which have reduced the overall plant diversity in the project area and created a low-quality habitat. Invasive plants known to occur in Cook County such as the lesser celandine (*Ficaria verna*), Japanese honeysuckle (*Lonicera japonica*), and common buckthorn (*Rhamnus cathartica*) were originally introduced as ornamentals and may occur in the project area (Cook County Forest Preserves 2024). Invasive insects including the emerald ash borer (*Agrilus planipennis*) have been known to occur in Cook County and have the potential to pose threats to native hardwood trees and shrubs in the area (Cook County Forest Preserves 2024).

Native plant species such as box elder (*Acer negundo*), prairie willow (*Salix humilis*), blue-eyed grass (*Sisyrinchium sp.*), and white prairie clover (*Dalea candida*) have been known to occur near the project area (iNaturalist 2024a). Urban-adapted native animal species including the gray squirrel (*Sciurus carolinensis*), opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), common garter snake (*Thamnophis sirtalis*), and Northern paper wasp (*Polistes fuscatus*) have also been found in the project vicinity and may occur within or near the project area (iNaturalist 2024a). Many bird species are also frequently observed in the project vicinity; a list of some that may use the project area for nesting or foraging is presented in Section 3.3.4 (Cornell Lab of Ornithology 2024).

There are no wetlands, and therefore no wetland-specific plant or animal species, in the project area or vicinity (USFWS 2024h). Similarly, there are no surface waters in the project area, and therefore, no fish or aquatic plants or wildlife occur in the project area.

Alternative 1 – No Action

Under the No Action alternative, no construction would occur; therefore, there would be no impact on habitats in the short term.

Because the vegetative diversity and quality within the project area is already low and dominated by introduced and invasive species, the No Action alternative would not drastically alter the existing condition in the long term. However, because no flood mitigation measures would be implemented under this alternative, pollutants and sediments on the ground within the project area would continue to be carried into the existing combined wastewater and separate stormwater systems as floodwaters drain away. The combined wastewater system in Harvey experiences overflows into local water bodies, such as the Little Calumet River, when stormwater levels exceed capacity at wastewater reclamation plants. The separate stormwater system in Harvey has designated outflows that discharge stormwater directly into local water bodies. Both systems can contribute pollutants to habitats during storms and flood events (MWRD 2023b, MWRD 2023c). Therefore, the No Action alternative would have negligible to minor long-term adverse impacts on aquatic and terrestrial resources in the project area vicinity.

Alternative 2 – Proposed Action

Construction of the Proposed Action would temporarily affect terrestrial resources because all vegetation within the proposed detention basin area would be removed primarily via mechanical means. This would include removing approximately 114 trees. If herbicides are used, the Subapplicant would adhere to all applicable state and federal regulations for herbicide application, reducing the potential for impacts on nontarget vegetation and wildlife from herbicide exposure. There is potential for direct harm to wildlife resulting from heavy equipment in the project area, which could cause physical injury and disturbance or lead to the expansion of invasive species that thrive in newly disturbed areas (Lozon and MacIsaac 1997). However, because of the degraded suburban habitat, it is unlikely that the area supports many individuals or a high diversity of species. Also, some wildlife species expected to be present in the project area are mobile and could move away from construction equipment and other disturbances. Construction of the stormwater improvements would primarily occur in existing rights of way and would not cause disturbance for a long duration at any one point. Construction-related noise and activity disturbances would be short term (23 months), and wildlife species in the project area are generally very accustomed to urban levels of noise and activity given the residential and industrial land uses that surround Harvey. Further, measures to reduce impacts from construction noise would be implemented, as discussed in Section 3.5.1. Therefore, the Proposed Action would have minor short-term adverse impacts on terrestrial habitats, plants, and wildlife in the project area.

No aquatic environments exist within or near the project area, so no impacts on aquatic environments would occur from construction.

In the long term, the Proposed Action would include constructing a 3.4-acre naturalized stormwater detention basin lined with native wetland plantings, as described in Section 2.2, to store and slowly release stormwater. The detention basin would improve water quality and habitat diversity in the

area by adding aquatic habitat. However, the area surrounding the basin would be reseeded with IDOT's Class 1 lawn mixture, which is made up of non-native turf grasses. Although the turf grasses would not contribute native habitat to the area, they would not result in a net loss of native species considering the existing degraded suburban habitat. Also, converting the existing combined wastewater system into a separate system under the Proposed Action would not improve or deteriorate terrestrial or aquatic habitats in the long-term. Overall, the addition of the native wetland plantings and aquatic habitat as part of the stormwater basin under the Proposed Action would create a marginally more diverse plant community, which could support a more diverse array of native wildlife species. Therefore, the Proposed Action would have negligible long-term benefits on terrestrial habitats as well as the diversity and availability of aquatic habitats in the area.

3.3.2. WETLANDS (EXECUTIVE ORDER 11990)

EO 11990, *Protection of Wetlands*, requires federal agencies to consider alternatives to work in wetlands, and it limits potential impacts on wetlands if there are no practicable alternatives. FEMA regulation 44 C.F.R. Part 9, *Floodplain Management and Protection of Wetlands*, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990. EO 11990 prohibits FEMA from funding activities in a wetland unless no practicable alternative is available.

According to a review of the USFWS National Wetlands Inventory, there are no wetlands within or adjacent to the project area (USFWS 2024h). The nearest wetland feature is about 1.1 miles west of the site and is a freshwater emergent wetland that is part of the Markham Prairie nature preserve. Other surface waters near the project area are discussed in Section 3.2.2.

Alternative 1 – No Action

In the absence of flooding, the No Action alternative would have no impact on wetlands because there are no wetlands in or adjacent to the project area. In the long term, periodic flood events would continue to inundate the residential areas and result in deposition of sediments and other pollutants in the project area and into the stormwater system. Thus, the No Action alternative could have negligible impacts on water quality in wetlands farther from the project area.

Alternative 2 – Proposed Action

There is one wetland about 1 mile west of the project site, which is not expected to be impacted by any construction activities because of the distance from the project area. Because there are no wetlands present in or near the project area, there would be no direct short-term impacts on wetlands from construction of the Proposed Action.

The Proposed Action would enhance the project area's ability to filter contaminants from stormwater and manage floodwaters. A naturalized 3.4-acre stormwater detention basin, planted with native wetland vegetation, would store, filter, and gradually release stormwater. This process would reduce pollutant loads that could enter the stormwater system and would improve the quality of discharged water. The detention basin would be planted with wetland vegetation and the surrounding area would be seeded, as outlined in Section 2.2. The detention basin would not be expected to support the development of wetlands as the water level fluctuations in the basin would not be similar to

water level fluctuations in natural wetlands. Therefore, implementation of the Proposed Action would not impact wetlands.

Although the stormwater detention basin would not be a wetland, it would provide some water quality treatment that currently does not exist in the project area, as discussed in Section 3.2.2.

3.3.3. THREATENED AND ENDANGERED SPECIES

The Endangered Species Act (ESA) of 1973, 16 U.S.C. §§ 1531–1544, provides a framework for the conservation of endangered and threatened species and their habitats. The lead federal agencies for implementing the ESA are U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Federal agencies are required to ensure that actions they fund, authorize, or carry out are not likely to jeopardize the continued existence of any listed species (including plant species) or result in the destruction or adverse modification of designated critical habitats for such species. The ESA also prohibits any action that causes a "take" of any listed species. The term "take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, capture, or collect, or to attempt to engage in any such conduct." In addition, the Illinois Endangered Species Protection Act of 1972 (520 Ill. Comp. Stat. § 10) prohibits the possession, take, sale, offer for sale, gift, or other disposal of any animal or product thereof of any animal species that occurs on the Illinois list of threatened and endangered species.

The USFWS Information for Planning and Conservation system was consulted on May 21, 2024, to obtain the list of USFWS managed species that may potentially occur in or near the project area. Four federally listed wildlife species and two plant species are identified as having the potential to occur near the project area: northern long-eared bat (*Myotis septentrionalis*), rufa red knot (*Calidris canutus rufa*), eastern massasauga rattlesnake (*Sistrurus catenatus*), Hines's emerald dragonfly (*Somatochlora hineana*), eastern prairie fringed orchid (*Platanthera leucophaea*), and leafy prairie clover (*Dalea foliosa*) (USFWS 2024c). The potential for these species to occur within the project area is described below. No designated critical habitat occurs within the project area.

The northern long-eared bat overwinters in caves or tunnels October through April, migrating short distances to summer roosts in forest habitats from mid-March through mid-May (USFWS 2016a, 2022). In the summer, the bats typically roost in trees, although they have also been found in structures like buildings and bridges (USFWS 2016a). Although existing trees and vacated structures in the project area could serve as roosting sites, the northern long-eared bat is generally only found in this type of less suitable habitat when it is directly adjacent to prime habitat. The northern long-eared bat's prime habitat is large, contiguous forests, which are absent near the project area (USFWS 2022). The habitat in and near the project area is less suitable, highly developed, suburban landscapes. Because prime forest habitat is absent near and within the project area and suburban areas are generally unsuitable habitat for the species, it is unlikely that the bat occurs in the project area (USFWS 2023b, 2022). Additionally, there have been no recorded occurrences of the species near the project area (Illinois Natural Heritage Database 2024). Overall, there is low potential for the northern long-eared bat to occur in the project area.

The rufa red knot is a shorebird with recorded populations along the Great Lakes shoreline (USFWS 2024d). This species typically remains along the shoreline where it breeds, roosts, raises its young, and forages for food (USFWS 2024d). Although the project area is within 15 miles of the shore of Lake Michigan, there have been no recorded occurrences of the species near the project area (Illinois Natural Heritage Database 2024). Furthermore, the project area lacks suitable shoreline or marsh habitats. Therefore, the rufa red knot is not expected to occur in the project area.

The eastern massasauga is a rattlesnake that lives in shallow wetlands and connected uplands in the Great Lakes region (USFWS 2024a). The snake overwinters in wetland burrows from October through March and migrates to its upland summer habitat when the weather warms in the spring (USFWS 2016b). The summer habitat for the eastern massasauga consists of early successional stage forests with low canopies (USFWS 2016b). No suitable wetland or forest habitat exists within or near the project area. Furthermore, there have been no recorded occurrences of the species near the project area (Illinois Natural Heritage Database 2024). Therefore, the eastern massasauga rattlesnake is not expected to occur in the project area.

Hine's emerald dragonfly occurs in spring fed wetlands, wet meadows, and marshes dominated by grasslike plants (USFWS 2024b). The species relies on slow-moving aquatic systems for nurseries and is primarily found in shallow groundwater-fed areas with grassy vegetation. Critical habitat has been designated for this species along the nearby Calumet Sag Channel and Des Plaines River (USFWS 2010). However, no suitable wetland or meadow habitat exists in the project area. Additionally, there have been no recorded occurrences of the species near the project area (Illinois Natural Heritage Database 2024). Therefore, the Hine's emerald dragonfly is not expected to occur in the project area.

The eastern prairie fringed orchid occurs in sunny, wet to mesic prairie habitats, and wetland communities throughout the Great Lakes region (USFWS 2024e). Suitable habitat includes sedge meadows, fens, and marsh edges that are grass or sedge dominated with a low occurrence of invasive species (USFWS 2024e). One observation of the orchid was documented on iNaturalist in 2022 about one block from the project area (iNaturalist 2024b). However, the observation did not occur in the specific location in which the pin is posted. iNaturalist obscures observations of endangered species by randomizing the location of an observation within a buffer around the actual location of the species occurrence. Therefore, it is unknown exactly where the orchid was observed. Based on desktop research, the orchid seems to have occurred under wetland prairie-like conditions that do not occur within the project area but do occur just outside of the City of Harvey. Therefore, it is likely that the orchid observation occurred in a nearby prairie or nature preserve rather than in a developed community. Because the Proposed Action is in a developed suburban environment that does not contain suitable habitat for the species, the eastern prairie fringed orchid is not expected to occur in the project area.

The leafy prairie clover occurs in open prairie habitats with thin calcareous soil (U.S. Forest Service 2024). In Illinois, the species is restricted to the rare dolomite prairie community, which has soil characterized by thin glacial debris, dolomite bedrock at or near the surface, and a high magnesium content (IDNR 2016; U.S. Forest Service 2024). The closest known dolomite prairie community is the

Lockport Prairie Nature Preserve near Lockport, which is about 26 miles west of Harvey (IDNR 2016). Because Harvey is a developed suburban environment, the leafy prairie clover is not expected to occur in the project area.

Overall, there are no official records of threatened or endangered species within the project area (Illinois Natural Heritage Database 2024). Additionally, there is no suitable habitat or designated critical habitat within or near the project area (USFWS 2024c, 2024f).

Alternative 1 – No Action

No construction or other actions to improve stormwater management within Harvey would occur under the No Action alternative. Therefore, no short or long-term impacts on federally listed species would occur.

Alternative 2 – Proposed Action

The Proposed Action activities would have no effect on the northern long-eared bat, rufa red knot, eastern massasauga, Hine's emerald dragonfly, eastern prairie fringed orchid, and leafy prairie clover because there is no suitable habitat for these species in or near the project area and they would not be expected to occur in the area. Therefore, no short or long-term impacts on federally listed species would occur.

A No Effect Memo is included in Appendix C.

3.3.4. MIGRATORY BIRDS AND BALD AND GOLDEN EAGLES

A migratory bird is any species or family of birds that lives, reproduces, or migrates within or across international borders at some point during their annual life cycle. The Migratory Bird Treaty Act (MBTA) of 1918, as amended, 16 U.S.C. §§ 703–712, protects migratory birds and their nests, eggs, and body parts from harm, sale, or other injurious actions. All native birds, including common species, are protected by the MBTA.

The project area is within the Mississippi Flyway, and many migratory bird species could forage, roost, or nest in vegetated areas within the project area between April 1 and October 10. Migratory birds with potential to occur in the project area include, but are not limited to, the black-billed cuckoo (*Coccyzus erythropthalmus*), bobolink (*Dolichonyx oryzivorus*), cerulean warbler (*Dendroica cerulea*), and red-headed woodpecker (*Melanerpes erythrocephalus*). Other migratory birds commonly found in the project vicinity include the Canada goose (*Branta canadensis*), chimney swift (*Chaetura pelagica*), European starling (*Sturnus vulgaris*), red-winged blackbird (*Agelaius phoeniceus*), and American robin (*Turdus migratorius*) (Cornell Lab of Ornithology 2024). The nesting season for migratory birds in the project area is generally April through August (USFWS 2024c).

The Bald and Golden Eagle Protection Act of 1940, 16 U.S.C. §§ 668 *et seq.*, prohibits the take, possession, sale, or other harmful action of any golden eagle (*Aquila chrysaetos*) or bald eagle (*Haliaeetus leucocephalus*), alive or dead, including any part, nest, or egg (16 U.S.C. § 668(a)). Golden eagles are not likely to occur within the project area, because they nest on rocky cliffs and

typically avoid developed areas with high levels of human activity (USFWS 2023a). There are few recorded sightings of golden eagles in the region; the closest observation was about 8 miles west of the project area in February 2023 (Cornell Lab of Ornithology 2024). Bald eagles have not been observed in the project area but are identified regularly in the vicinity, particularly around parks and nature preserves (Cornell Lab of Ornithology 2024). The closest recorded sighting of a bald eagle was about 1 mile southwest of the project area in June 2022 (Cornell Lab of Ornithology 2024). Bald eagles in Illinois typically breed between February and mid-July and nest in tall trees adjacent to water bodies, which are not present in the project area (IDNR 2024, USFWS 2024g). The closest documented nest is on the Little Calumet River about 4 miles northeast of the project area (Cornell Lab of Ornithology 2024). However, because there is no suitable habitat for nesting, roosting, or foraging for bald eagles, they are not expected to occur in the project area.

Alternative 1 – No Action

Under the No Action alternative, there would be no construction and no removal of vegetation during the breeding season; therefore, there would be no short-term impacts on migratory birds or bald eagles. Because there would be no direct activities that would result in the destruction of eggs, nests, or birds, there would be no effect under the MBTA. Additionally, because there is no suitable habitat for eagles in the project area, there would be no effect under the Bald and Golden Eagle Protection Act. Therefore, the No Action alternative would have no short- or long-term impacts on migratory birds or bald eagles within the project area.

Alternative 2 – Proposed Action

Under the Proposed Action, vegetation that could support breeding migratory birds within the project area would be removed or disturbed by grading, excavation, and other construction activities. If these activities occur during the migratory bird breeding season, they could result in the destruction of nests, eggs, or young birds in nests. However, the project area is a highly modified suburban neighborhood, and therefore, currently provides only a marginal habitat for migratory birds. Given the potential for project work to affect migratory birds, the Proposed Action would be subject to the prohibitions of the MBTA. MWRD would be responsible for obtaining any permits necessary to comply with federal and state laws and adhering to permit conditions, which may include conducting pre-construction nesting bird surveys and avoiding work near active bird nests if vegetation disturbance were to occur during the nesting season. Given that MWRD would comply with the MBTA, the Proposed Action would have minor short-term adverse impacts on species protected under the MBTA.

Because there is no suitable habitat for eagles in the project area, there would be no short-term impact under the Bald and Golden Eagle Protection Act.

The Proposed Action would install native vegetation in and around the proposed detention basin and improve the quality and function of available nesting habitat for migratory bird species in the long term. In particular, the stormwater basin could benefit migratory birds, as it would be a water source and could develop into a marginal aquatic habitat over time. Thus, the Proposed Action would have minor long-term benefits on migratory birds. The Proposed Action would have no long-term impact on

bald eagles, because the revegetated project area would not substantially increase or decrease the available bald eagle nesting habitat in the area.

3.4. Hazardous Materials

Hazardous materials and wastes are regulated under several federal laws, including the EPA's regulations concerning Hazardous Waste Management System, 40 C.F.R. Part 260; the Resource Conservation and Recovery Act (RCRA) of 1976; the Solid Waste Act; the Toxic Substances Control Act; the Comprehensive Environmental Response, Compensation, and Liability Act as amended by the Superfund Amendments and Reauthorization Act; and the CAA of 1970. The RCRA, 42 U.S.C. §§ 6901 *et seq.*, administered by EPA, manages the generation, transportation, treatment, storage, and disposal of hazardous wastes. The Hazardous and Solid Waste Amendments of 1984, Pub. L. 98-616 (Nov. 8, 1984), 98 Stat. 3221, amended the RCRA and provided additional requirements for the disposal of hazardous waste. CERCLA, 42 U.S.C. §§ 9601 *et seq.*, also known as the Superfund Act, provides funds to remediate abandoned or uncontrolled hazardous waste sites, also known as Superfund sites. CERCLA also grants EPA with the authority to hold responsible parties accountable for hazardous waste releases at closed or abandoned waste sites. Further, Occupational Safety and Health Administration standards under the Occupational Safety and Health Act, 29 U.S.C. §§ 651 – 678, seek to minimize adverse impacts on worker health and safety (29 C.F.R. Part 1926). Evaluating hazardous substances and wastes includes consideration of whether any hazardous material would be generated by the proposed activity and/or already exists at or in the general vicinity of the site (40 C.F.R. § 312.10).

IEPA implements portions of the RCRA. Illinois state regulations pertaining to management of hazardous wastes are included in Title 35 Ill. Admin. Code, Parts 700-739. These regulations include standards for hazardous waste generators and require permits for the treatment, transportation, storage, and disposal of hazardous waste within the state.

A search conducted using EPA's NEPAssist website found that there are no active water dischargers, toxic release sites, or Superfund sites within the project area (EPA 2024e). There is one Toxic Substances Control Act (brownfield) site within the project area: a former crankshaft manufacturing site at 1460 South Wood Street. A Phase I Environmental Site Assessment was prepared for the site in 1999. The Phase I Environmental Site Assessment found potential impacts relative to soils, and no remediation activities have been recorded. Contaminants typically associated with crankshaft manufacturing include total petroleum hydrocarbons (like oil or grease) and iron metal chips and dust.

There is one hazardous waste generator and one air pollution site adjacent to the project area; these sites are located at 6 West 154th Street and 71 East 152nd Street, respectively. Within 0.3 miles of the project area, a buffer chosen to sufficiently capture the project area vicinity as discussed further in Section 3.5.5, there are nine hazardous waste generator sites, three industrial water dischargers, and one toxic release site. There are no Superfund sites, or brownfield sites (other than the one identified above), within 0.3 miles of the project area. The waste generator sites, water dischargers, and toxic release site are generally concentrated along the CSX rail corridor to the east of the project

area near Park Avenue. The nearest Superfund site is approximately 1.4 miles north of the project area at 14752 Spaulding Avenue (EPA 2024e).

Alternative 1 – No Action

No construction would occur under the No Action alternative; therefore, there would be no impacts related to hazardous materials either from the use of construction equipment or from the exposure of contaminated materials through ground-disturbing activities. Thus, the No Action alternative would have no short-term impacts related to hazardous materials. However, this alternative would not reduce the risk of flooding within the project area vicinity. During a flood event, contaminated materials in or near the project area could be disturbed if facilities containing hazardous materials are damaged. Thus, the No Action alternative would have minor long-term adverse impacts related to hazardous materials.

Alternative 2 – Proposed Action

The Proposed Action would include the temporary use of mechanical equipment such as excavators and trucks, which could release fuels, oils, and lubricants through inadvertent leaks and spills. However, the use of equipment in good condition and compliance with BMPs and conditions specified in the Illinois NPDES General Construction Stormwater Permit would reduce the impact of potential leaks and spills.

Construction activities for the Proposed Action would overlap the one recorded brownfield site at 1460 South Wood Avenue. As described above, soils in this area may contain oil, grease, other petroleum hydrocarbons, or iron chips or dust. Excavation activities could expose these materials or other previously undetected subsurface hazardous wastes or materials. If contamination is detected during construction, a licensed contractor would haul the contaminated soil to an appropriate permitted facility for disposal based on IEPA's list of solid waste treaters and recyclers (IEPA 2024b). The hazardous waste generator and air pollution site adjacent to the project area would not be affected by the Proposed Action, as excavation for stormwater improvements would be within the rights-of-ways of nearby streets.

The presence of structures constructed before the 1970s in the project area indicates that lead-based paint (LBP) and asbestos-containing materials (ACM) may have been used in the construction of the structures. Demolition activities would disturb LBP and ACM and could cause uncontrolled releases if not properly abated. If improperly handled and disposed of, LBP and ACM would have a significant adverse impact on human health. Before construction, surveys of structures would be completed to determine the presence of LBP or ACM in structures. Compliance with applicable federal, state, and local regulations and best practices regarding the identification, notification, handling, and disposal of LBP and ACM (consistent with the CAA's National Emission Standards for Hazardous Air Pollutants) would reduce potential adverse effects from unknown hazardous materials. Any hazardous materials discovered, generated, or used during implementation of the Proposed Action would be disposed of and handled in accordance with applicable local, state, and federal regulations.

Therefore, there would be a minor short-term adverse impact during construction related to hazardous materials from construction equipment use, the risk of inadvertent disturbance or release of known hazardous materials, and the potential disturbance or release of previously unknown hazardous materials.

The Proposed Action would neither generate new hazardous materials nor interfere with existing activities involving hazardous materials. The Proposed Action would reduce the risk of flooding within the project area vicinity, which would reduce the associated risk of floodwaters damaging facilities that handle and use hazardous materials and spreading contaminated materials in or near the project area and into nearby waterways. Therefore, the Proposed Action would have minor long-term benefits related to hazardous materials.

3.5. Socioeconomics

3.5.1. NOISE

The Noise Control Act of 1972 defines "noise" as an undesirable sound. Noise is regulated at the federal level by the Noise Control Act of 1972, 42 U.S.C. §§ 4901, *et seq.* Noise standards developed by EPA (1974) provide a basis for state and local governments' judgments in setting local noise standards.

Article IV, Noise, of the Cook County Code of Ordinances, prohibits the sale or lease of new equipment for which noise exceeds 80 A-weighted decibels at 50 feet from the source, but it does not contain any codes relative to noise generation. Title 9, Chapter 9-53, Noise Control, of the City of Harvey Municipal Code, regulates noise-generating activities within the city limits. The code prohibits construction in residential districts on weekends and between 10 p.m. and 6:30 a.m. on weekdays (unless otherwise authorized by emergency permit). The code also prohibits the use of pile drivers, pneumatic hammers, electric hoists, blowers, fans, generators, and similar equipment between the hours of 10 p.m. and 6:30 a.m. where noise is "plainly audible" by a residential district within 25 feet. In the case of the Proposed Action, construction activities would be plainly audible and therefore would be subject to the time limitation.

Assessment of noise impacts considers the proximity of the Proposed Action to sensitive receptors. A sensitive receptor is defined as an area of frequent human use that would benefit from a lowered noise level. Typical sensitive receptors include residences, schools, churches, hospitals, nursing homes, and libraries. The ambient noise level near the project site is typical for a suburban area, with some noise contributed from the industrial land uses that occur east of the project area. For the purposes of this noise analysis, the project area is shown in Figure 2-1 and bound by 152nd Street to the north, Center Avenue to the east, 154th Street to the south, and Wood Street to the west. The project area is in a residential district, surrounded on all sides by residential uses. Additional sensitive receptors in the project area include one school, 12 churches, a recovery center, and two community centers:

- Tiny Tots Early Learning Academy, associated with the Church of Jesus Christ Apostolic Church at 15323 Turlington Avenue
- Church of Jesus Christ Apostolic Church at 15323 Turlington Avenue
- New Beginnings Church at 119 East 154th Street
- Congregation of East Harvey at 117 East 154th Street
- Harvey Church of Christ at 15246 Marshfield Avenue
- Bishop Louis Henry Ford Memorial District Church of God in Christ at 15314 Page Avenue
- Whole Truth Pentecostal Church at 15314 Page Avenue
- Divine Mercy Southern Baptist Church at 15209 Page Avenue
- True Holiness Church of God at 15300 Loomis Avenue
- Saint Clement's Episcopal Church at 15245 Loomis Avenue
- Holy Bible Missionary Baptist Church at 15301 Lexington Avenue
- South Suburban Missionary Baptist Church at 15201 Lexington Avenue
- Catholic Charities Senior Services at 15300 Lexington Avenue
- Williams Aftercare Recovery Center at 15325 Page Avenue
- Harvey Community Center at 15320 Center Avenue
- Community and Economic Development Association Harvey at 53 East 154th Street

Alternative 1 – No Action

No construction would occur under the No Action alternative. Therefore, this alternative would have no short-term noise impacts. The No Action alternative would not alter existing conditions; there would continue to be periodic flooding from storm events that could damage infrastructure. Noise from flood-related repairs would be temporary, localized, and consistent with City of Harvey noise ordinance limitations on days and hours that work could occur. Nevertheless, repair construction work would be noticeable in the residential project area. Thus, minor long-term adverse periodic noise impacts would occur.

Alternative 2 – Proposed Action

Under the Proposed Action, construction activities would temporarily increase noise levels in the project vicinity. Construction of all project components would not occur simultaneously nor for the

same duration; linear sewer elements would be constructed sequentially, which would result in limited durations of localized temporary noise impacts that would move as the sewer components are constructed. Localized construction impacts for detention basin construction would occur for a longer duration than sewer construction. Residences, schools, and the churches in the project area would experience a temporary increase in noise levels from construction. Heavy machinery and equipment that would be used for the Proposed Action would be well maintained, have sound-control devices no less effective than those provided on the original equipment, and have muffled exhaust. Construction would proceed in compliance with the City of Harvey's noise ordinance, including limitations on days and hours that work could occur. With the implementation of these BMPs and compliance with the City of Harvey noise ordinance limitations on hours of work, the Proposed Action would have minor short-term adverse noise impacts in the project area.

The Proposed Action would not result in long-term noise impacts because it would not include a permanent source of noise. The Proposed Action would reduce the risk of future flooding damage, thereby reducing the need for future repair construction work and associated noise. Therefore, the Proposed Action would result in a minor long-term beneficial noise impact.

3.5.2. PUBLIC SERVICES AND UTILITIES

The project area is within the City of Harvey. Waste services in the city are provided by Groen Waste, a contracted waste company. Water and sewer services are provided by the City of Harvey Water Department and Public Works Department. Natural gas service is provided by NICOR (City of Harvey 2024b). As discussed in Section 1.3, stormwater runoff generated within the project area and vicinity is primarily handled by a combined sewer system, which limits conveyance and flood storage capacity, resulting in shallow ponding and flooding in and near the project area. In addition to combined sewers, other underground utilities within the project area include water mains, natural gas and electrical lines, telecommunication lines, and traffic signal conduits (HRGreen 2022a). Electric service is provided by Just Energy and Constellation Energy (Find Energy 2024). There are no parks or recreational facilities within the project area.

Alternative 1 – No Action

No construction would occur under the No Action alternative; therefore, no short-term impacts on public services and utilities would occur. In the long term, the No Action alternative would not mitigate the recurring flooding experienced within the project area vicinity; thus, residences and services within the project area vicinity would continue to experience disruptions during flood events. Therefore, the No Action alternative would have minor to moderate long-term adverse impacts on utilities and services depending on the severity of a flood event.

Alternative 2 – Proposed Action

Under the Proposed Action, excavation and grading activities have the potential to damage utilities, such as stormwater pipes, in the project area. The contractor would be responsible for the protection of all utilities. Therefore, construction of the Proposed Action would have negligible short-term adverse impacts on public services and utilities in the project area.

In the long term, the Proposed Action would separate the combined sewer in the project area into separate pipes for stormwater and sewer flows, thus increasing the capacity of the system to hold stormwater and reducing the risk of combined sewer overflows. Because the Proposed Action would reduce the risk of flooding in the project area and vicinity, it would also reduce the likelihood that utility infrastructure would be impacted and services disrupted by floodwaters and associated damage. Thus, the Proposed Action would result in improved storm sewer and sewer utility function in the long-term. Further, an 8-foot-wide path would be constructed around the perimeter of the pond, providing a recreational benefit. The area surrounding the detention basin could provide recreational opportunities in the future. Therefore, the Proposed Action would have moderate long-term benefits on public services and utilities.

3.5.3. TRAFFIC AND CIRCULATION

The primary east-west vehicle corridors in the project area are 152nd Street, 153rd Street, and 154th Street. Most north-south vehicle corridors in the project area are secondary roads; these include Page Avenue, Paulina Street, Marshfield Avenue, Ashland Avenue, Vine Avenue, Myrtle Avenue, Loomis Avenue, Lexington Avenue, Turlington Avenue, and Center Avenue. South Wood Street is an arterial north-south street on the western side of the project area. A heavy rail corridor is approximately 800 feet to the east of the closest point of the project area; this corridor supports CSX freight and the Metra Electric District electrified commuter rail, including a Metra station at East 154th Street (Metra Electric District 2024). Regionally, access to the project area vicinity is provided by the east-west U.S. Route 6 and the north-south Illinois Route 1.

Alternative 1 – No Action

The No Action alternative would not include construction and would therefore have no short-term impacts on traffic and circulation. Under the No Action alternative, the risk of flooding would not be reduced in the project area vicinity. Flooding from storm events would continue to cause shallow ponding and flooding in and near the project area, resulting in street flooding and damage. Periodic flooding could require road closures for safety and maintenance. Road traffic disruptions would adversely affect vehicular access for residents and emergency responders. Therefore, the No Action alternative would result in moderate recurring intermittent impacts on transportation over the long term.

Alternative 2 – Proposed Action

Under the Proposed Action, stormwater improvements would require brief closures of roadways to excavate and install pipes. Roadways that would be affected are described in Section 2.2. Further, construction truck trips could potentially increase traffic along 152nd Street, 153rd Street, 154th Street, and South Wood Street. Construction activities would be temporary, and the contractor would use traffic control devices, such as flag people and signs, to guide traffic as needed during construction and mitigate the effects of road closures. Placement and maintenance of traffic control devices would be in accordance with IDOT specifications and standards. Therefore, with implementation of these BMPs, the Proposed Action would have minor short-term adverse impacts on transportation.

In the long term, access along Myrtle Avenue between 153rd and 154th would be removed. However, this would not impact circulation in the area as only one block of roadway would be removed, and other adjacent north-south roadways, such as Vine Avenue and Loomis Avenue, would provide similar access. Implementation of the Proposed Action would reduce the risk of flooding in the project area, which would reduce the likelihood of road closures caused by flooding and associated damage. Thus, the Proposed Action would have minor long-term benefits on transportation.

3.5.4. LAND USE AND ZONING

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the Uniform Relocation Assistance Act), 42 U.S.C. §§ 4601 *et seq.*, mandates that certain relocation services and payments be made available to eligible residents, businesses, and nonprofit organizations displaced as a direct result of projects undertaken by a federal agency or with federal financial assistance. The Uniform Relocation Assistance Act provides for uniform and equitable treatment for persons displaced from their homes or businesses and establishes uniform and equitable land-acquisition policies.

Land uses within the project area are regulated under the City of Harvey Municipal Code, Title 16, Zoning. Project area land uses include Single Dwelling (R1), Two Dwelling (R2), Multi-Dwelling (R3), Downtown Business District (DB), and Neighborhood Commercial (NC). Properties subject to demolition under the Proposed Action are all properties zoned Single Dwelling (R1). Most properties within the project area are residential; nonresidential uses (commercial and institutional) are primarily along 154th Street, with some Neighborhood Commercial (NC) uses along Page Avenue. Uses within the project area generally appear to be consistent with underlying zoning or vacant/unused.

Alternative 1 – No Action

The No Action alternative would not include construction and would therefore have no short-term impacts on land use or zoning. Under the No Action alternative, the risk of flooding would not be reduced in the project area vicinity. Periodic flooding would continue to affect the suitability of properties for their zoned use, and result in the continued underutilization of properties within the project area. No changes to the underlying land use or zoning would be required. Therefore, the No Action alternative would have a minor long-term adverse impact on land use and zoning.

Alternative 2 – Proposed Action

As discussed in Section 2.2, the proposed location of the detention basin currently includes 31 parcels, of which 16 are vacant and 15 contain residential buildings. MWRD would fund the acquisition of the 31 parcels before implementation of the FEMA-funded project. Thus, it is considered a non-federal action, as discussed in Section 2.2.1. MWRD would follow all federal Uniform Relocation Assistance Act requirements regarding acquisition, including offering relocation assistance and advisory services to impacted property owners and residents (both owners and renters of affected properties) (42 U.S.C. Chapter 61). All requirements would be followed, including but not limited to implementation of subsection 4622 - moving and related expenses; subsection

4623 - replacement housing for homeowner and mortgage insurance; subsection 4624 - replacement housing for tenants and certain others; subsection 4625 - relocation planning, assistance planning, and advisory services; and other procedural requirements. Actions and engagement relative to acquisition activities would be documented in accordance with the Uniform Relocation Assistance Act. MWRD's compliance with the Uniform Relocation Assistance Act would reduce potential displacement impacts by ensuring that affected residents would be appropriately informed and fairly treated during the acquisition process.

The Proposed Action would require demolishing 15 residences currently zoned as Single Dwelling (R1). Demolition and construction activities would not necessitate a change to the underlying zoning or surrounding land use. Therefore, the Proposed Action would have no short-term adverse impacts on land use and zoning.

Implementation of the Proposed Action would reduce the risk of flooding in the project area, which would reduce the likelihood of stormwater overwhelming the combined sewer, resulting in sewer backups, property damage, and yard flooding in the project area. The Proposed Action would protect the existing residences and businesses in the project area and ensure that land uses in the project area can persist in a manner consistent with the underlying zoning. As discussed in Section 4, the detention pond may be accompanied by a future community park; if the community park becomes reasonably foreseeable, the zoning underlying the proposed park property may be updated to reflect the new open space use via a zoning change. The Proposed Action would have minor long-term benefits on land use and zoning.

3.5.5. ENVIRONMENTAL JUSTICE (EXECUTIVE ORDER 12898)

EO 14096 *Revitalizing Our Nation's Commitment to Environmental Justice for All* defines environmental justice (EJ) as the "just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other federal activities that affect human health and the environment." 88 Fed. Reg. 25251, 25253 (Apr. 26, 2023). EO 14096 builds upon EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which requires agencies to identify and address any disproportionately high and adverse human health or environmental effects its activities may have on minority or low-income populations. EPA defines people of color as individuals who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino (i.e., all people other than non-Hispanic, white alone individuals) (EPA 2024b). Low-income populations are measured as households with an income that is less than or equal to twice the federal poverty level.

The study area for the EJ analysis represents the area where project-related impacts would occur, potentially causing disproportionately high and adverse impact on neighboring minority and low-income populations. It also represents the area that would generally stand to benefit from reductions in flooding under the Proposed Action. The study area for the EJ analysis of the proposed project includes the project area (Figure 1-1) and access and staging areas as well as any areas that could be affected by the project impacts. This is represented by the project area and a 0.3-mile buffer. The

study area includes approximately 4,500 residents of the City of Harvey's 20,300 total residents, or approximately 20 percent of the population.

In accordance with EO 12898, *Environmental Justice: Interim Guidance for FEMA EHP Reviewers* (September 2023), EJ populations are defined by demographic indicators and EJ indexes using the following criteria:

- The minority and/or low-income population of the affected environment equals or exceeds the 50th percentile in the state in which the affected environment is located.
- One or more of the EJ indexes in the affected environment equals or exceeds the 80th percentile in the state in which the affected environment is located.

Demographic indicators are based on population size within the study area and EJ indexes combine environmental indicators with socioeconomic indicators to identify areas where there may be a disproportionate exposure to environmental pollution. Table 3.4 and Table 3.5, respectively, show the demographic indicators and EJ indexes values within the affected environment. The complete EJScreen report is provided in Appendix D.

Table 3.4. Environmental Justice Population Demographic Indicators

Demographic Indicator	Percentile in State	EJ Population Present
People of color	92	**Yes**
Low income	92	**Yes**

Source: EPA 2024a

Table 3.5. Environmental Justice Indexes

EJ Index	Index Percentile in State	EJ Population Present[1]
National Air Toxics Assessment (NATA) Air Toxics	0	No
NATA Respiratory	36	No
NATA Diesel PM	79	No
PM 2.5	94	**Yes**
Ozone	55	No
Lead Paint	62	No
Traffic	46	No
Risk Management Plan Sites	87	**Yes**

EJ Index	Index Percentile in State	EJ Population Present[1]
Treatment and Disposal	73	No
National Priorities List	79	No
Underground Storage Tanks	86	**Yes**
Wastewater Discharge	55	No

Source: EPA 2024a

Notes:

[1] *Index equals or exceeds the 80th percentile compared to the average of Illinois; therefore, an EJ population is present.*

As shown in Table 3.4 and Table 3.5, the study area meets the criteria for containing EJ populations based on thresholds for people of color, low-income populations, and EJ indexes for PM 2.5, proximity to Risk Management Plan Sites, and proximity to underground storage tanks. EJ indexes greater than the 80th percentile compared to the statewide average indicate that the EJ population of the study area has a greater exposure to air pollutants such as PM and is in closer proximity to risk management plan sites and underground storage tanks than most other non-EJ populations within Illinois. Risk management plan sites are those which handle (currently or formerly) hazardous substances, and underground storage tanks are buried tanks that are (currently or formerly) used to store petroleum or other hazardous substances; proximity to these sites represents a potential health risk to nearby residents due to the potential risk of exposure to hazardous substances from environmental releases.

The EJ population demographic indicators for the EJ study area are very similar to the demographic indicators for the City of Harvey. The City of Harvey is approximately 52 percent low income and 97 percent people of color (EPA 2024a).

Alternative 1 – No Action

No construction would occur under the No Action alternative; therefore, no short-term impacts on EJ communities would occur. Under the No Action alternative, existing EJ populations in the study area would remain vulnerable to flooding and flood-related hazards caused by the overwhelmed combined sewer system. Impacts from stormwater overwhelming the combined sewer would directly affect the population within the study area. Potential direct impacts include property damage, property loss, or personal injury or harm; potential indirect impacts would include damage to roadways, which could disrupt transportation and access for emergency services or employment. These impacts would affect all residents in the EJ study area but would disproportionately impact EJ populations because they have fewer resources to withstand, prepare for, recover from, and make repairs after flood events (EPA 2021).

Under the No Action alternative, there would be no reduction in flood risk, and stormwater would continue to periodically overwhelm the existing combined sewer system. Because the residents in the study area constitutes an EJ population, there would be a disproportionately high and adverse impact on EJ populations.

Alternative 2 – Proposed Action

Under the Proposed Action, short-term construction impacts related to air quality, hazardous materials, noise, and traffic would adversely impact all residents within the study area. The City would implement BMPs to reduce these impacts, as discussed in Sections 3.2.4, 3.4, 3.5.1, and 3.5.3. BMPs would be implemented prescriptively based on identified impacts and not on the composition of the adjacent population. The residents in the study area constitute an EJ population that would experience short-term construction impacts. Therefore, the Proposed Action would have minor short-term adverse impacts on EJ populations but would not have disproportionately high and adverse impacts because of the short duration of these impacts and implementation of BMPs.

As discussed in Sections 2.2 and 3.5.4, MWRD would fund the acquisition of the 31 parcels to facilitate the construction of the detention basin. Of these 31 parcels, 16 are vacant and 15 contain residential buildings. No businesses would be displaced. Voluntary acquisitions are proceeding and MWRD is currently coordinating with owners and renters of properties to be acquired; all communications and negotiations are being conducted in accordance with the Uniform Relocation Assistance Act requirements. Should it become necessary, the City would use eminent domain to acquire properties. However, eminent domain would not be used until after FEMA grant funding is approved for the Proposed Action.

To mitigate these potential impacts, FEMA, the City, and MWRD have completed the following in compliance with EO 12898: *Environmental Justice Fact Sheet* (FEMA 2024b). They have identified measures to minimize, mitigate, or avoid impacts; engaged with potentially affected communities throughout the analysis, including identifying potential effects and mitigation measures; and monitored communities' needs and preferences. More information on these efforts is discussed below.

As described in Section 3.5.4, property acquisition would proceed in compliance with the federal Uniform Relocation Assistance Act requirements, including offering relocation assistance and advisory services to impacted property owners and residents (both owners and renters of affected properties). Communication with homeowners and residents regarding acquisition would proceed in accordance with the requirements in code and would be documented. All requirements would be followed, including but not limited to implementation of subsection 4622 - moving and related expenses; subsection 4623 - replacement housing for homeowner and mortgage insurance; subsection 4624 - replacement housing for tenants and certain others; subsection 4625 - relocation planning, assistance planning, and advisory services; and other procedural requirements.

In addition to feasibility considerations, FEMA, in coordination with the City and MWRD, has engaged the public on the project purpose and Proposed Action. Section 5.1 discusses the public engagement efforts, which included publication of an informational website with documents and materials about the project, public mailings, published notices in newspapers, invitation to the public to provide comments, distribution of a phone number for voice messages, development and publication of a frequently-asked-questions (FAQ) document that addresses the main concerns voiced in public comments received thus far, and procedural engagement activities associated with the NEPA review, such as distribution of the scoping document. Main concerns expressed in public comments include,

but are not limited to, clarifying the purpose and need for the project and providing more rationale as to why the Proposed Action is the most effective strategy and why the Myrtle Street location was chosen instead of other locations that would not require residential displacement. Section 1.3 discusses the purpose and need for flood risk reduction in the project area and vicinity. Section 2.3 provides rationale on why other locations that do not require residential displacement are not feasible for flood risk reduction. The location of the Proposed Action and associated property acquisition (non-federal action) and property demolition under the Proposed Action are necessary to achieve flooding reduction benefits to the project area and vicinity. The frequently-asked-questions document that addresses main concerns from public comments is included in Appendix E.

In the long term, the Proposed Action would mitigate flooding of residential and nonresidential structures and roadways in the project area and vicinity. As discussed in Section 3.2.3, the Proposed Action would reduce the depth and duration of flooding as well as the frequency of sewer backups for 690 structures in the City under the 100-year flood event. As discussed above, the City's demographic characteristics and characteristics of the benefit area are substantially similar to that of the EJ study area and likewise include EJ populations. Therefore, the Proposed Action would have a moderate long-term benefit on EJ populations within the study area by reducing the exposure of the overburdened EJ community to flood hazards and associated impacts, such property damage, road closures, sewer backups, and contaminated stormwater runoff.

3.5.6. PUBLIC HEALTH AND SAFETY

Safety and emergency services sites include fire stations, police stations, and human health facilities. Police and fire service is provided by the City of Harvey. Harvey Police Station 2 is within the project area at 131 East 154th Street, and access to the station is on East 154th Street and Turlington Avenue. There are no fire stations within the project area; the nearest fire station is approximately 1,400 feet south of the project area at 15600 Center Avenue. Access to the station is on Center Avenue.

The nearest hospital to the project area is the University of Chicago Medicine’s Ingalls Memorial Hospital. The hospital’s main address is 1 Ingalls Drive at the intersection of Dreesen Street and Page Avenue, approximately 675 feet south of the project area. There are no private practice health facilities within the project area.

Alternative 1 – No Action

Under the No Action alternative, existing conditions would not change relative to public health and safety. No short-term impacts on existing public health services or emergency services would occur as there would be no construction. However, under the No Action alternative, the existing public health and safety services would remain vulnerable to flooding and property damage, which could make services unavailable during an emergency when they may be most needed. Periodically flooded streets and resulting road damage may also impact emergency response times and limit access to public health and safety facilities. Further, periodic flooding could result in combined sewer backups into basements, creating unsafe conditions for residents. Therefore, the No Action alternative would have a moderate long-term adverse impact on public health and safety.

Alternative 2 – Proposed Action

Under the Proposed Action, construction activities have the potential to impact public health and safety from heavy construction equipment use. All construction activities would be completed by qualified personnel trained in the proper use of equipment, including all safety precautions. The contractor would use appropriate signage and barriers before construction activities to secure construction areas and prevent public access to work zones.

The Harvey Police Station 2 at 131 East 154th Street is on the southern edge of the project area. MWRD would implement traffic control measures to ensure direct or alternative access remains uninterrupted during the construction period as necessary. Further, the main police station for the city at 15301 Dixie Highway would not be affected by the Proposed Action. Access to and from the fire station and hospital outside the project area would remain unaffected. During the construction period, fire and emergency response vehicle mobility would potentially be affected by lane closures on certain streets; however, traffic BMPs as described in Section 3.5.3, would reduce mobility impacts, and emergency vehicles would remain able to use lights and sirens for priority access in emergency response events. Therefore, there would be a negligible short-term adverse impact related to public health and safety.

Under the Proposed Action, the long-term, periodic risk of flooding and associated public health and safety concerns would be reduced. Emergency response services, such as fire and police, would experience improved accessibility and emergency response times during storm events because fewer roadways would be flooded, or they would be flooded to a lesser depth and/or duration. The reduced risk of property and roadway damage from sewer backups would benefit public health and safety. Likewise, the risk of flooding or ponding directly or indirectly causing injury to project area residents would be reduced. To ensure the public's safety around the detention basin, MWRD would construct a shallow water shelf around the perimeter of the detention basin that would be approximately 10-feet wide and 1-foot deep when the basin is at its normal water level. MWRD would also incorporate other safety measures into the design as necessary to ensure the public's safety. Therefore, the Proposed Action would have a moderate long-term benefit on public health and safety.

3.6. Historic and Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, 54 U.S.C. §§ 300101–307108, requires that federal agencies consider the potential effects on cultural resources of actions it proposes. Cultural resources are defined as prehistoric or historic archaeology sites; historic standing structures; historic landscapes, districts, objects, and artifacts; cultural properties of historic or traditional significance—referred to as Traditional Cultural Properties—that may have religious or cultural significance to federally recognized Indian tribes; or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources listed, eligible for listing, or potentially eligible for listing in the National Register of Historic Places (NRHP) are subject to protection from adverse impacts resulting from a federally funded undertaking.

Pursuant to 36 C.F.R. § 800.4(a)(1), the Area of Potential Effects (APE) is defined as the geographic area(s) within which the undertaking may directly or indirectly affect cultural resources. Within the APE, impacts on cultural resources are evaluated for both historic structures (above-ground cultural resources) and archaeology (below-ground cultural resources). FEMA determined that the APE includes all construction-related impacts surrounding the proposed detention basin only. Proposed work in the street rights-of-way is considered to have a low potential to impact above-ground or below-ground historic properties. No cultural resources survey was required within those areas.

The APE for historic architecture includes physical and visual effects in and around the area of the proposed detention basin. This includes the 15 buildings proposed for demolition and approximately 38 buildings that surround the detention basin along 153rd Street to the north and 154th Street to the south and flanked by Vine Avenue to the west and Loomis Avenue to the east. The APE for archaeology is limited to all demolition and construction proposed within the detention basin location.

In addition to the NHPA, FEMA must also comply with other federal laws that relate to historic and cultural resources:

- The Archaeological and Historic Preservation Act of 1974, 54 U.S.C. ch. 3125, provides for the survey, recovery, and preservation of significant scientific, prehistoric, archaeological, or paleontological data when such data may be destroyed or irreparably lost because of a federal, federally licensed, or federally funded (in part or whole) project.

- The American Indian Religious Freedom Act of 1978, 42 U.S.C. § 1996, provides for the protection and preservation of American Indian sites, possessions, and ceremonial and traditional rites.

To comply with the NHPA, FEMA notified the Illinois State Historic Preservation Office (IL SHPO) on February 6, 2024, informing them about the project scope and intent to complete cultural resources surveys.

In compliance with the NHPA, Secretary of the Interior (SOI)-qualified archaeologists and architectural historians conducted historic architectural and archaeological surveys in March 2024 to facilitate the Section 106 review steps of identifying historic properties and assessing potential effects of the project (Richard Grubb and Associates [RGA] 2024b). The objective of the architectural survey was to research and summarize the historical development of the survey area and to identify, document, and evaluate properties within the APE that are 45 years of age and above for potential listing in the NRHP either individually or as a contributing resource in a district. Tasks completed for the architectural survey included background research, field survey, completion of Illinois Survey Forms for 53 properties, and a historic architecture survey report (Appendix C).

A Phase IA archaeological survey was completed in May 2024 to assess the existing and historical conditions within the APE, research site development activities, and contextualize previous ground disturbance within the APE (RGA 2024a). The goal of the archaeological survey was to assess

whether the project area has low, medium, or high potential to contain archaeological resources. Tasks completed for the archaeological survey included background research, field pedestrian survey, and reporting.

3.6.1. HISTORIC STRUCTURES

From March 18 to March 21, 2024, SOI-qualified architectural historians from RGA completed a historic architecture survey. A total of 53 buildings over 45 years of age within the APE were documented and evaluated for eligibility to be listed in the National Register of Historic Places either individually or as contributing resources to a historic district. Additional research relevant to local history was conducted at the Harvey Library. When possible, historians also conducted interviews with neighborhood residents. Online data from the Cook County tax assessor and research gathered at the IL SHPO and the Illinois Historic and Architectural Resources Geographic Information System website indicated that all the buildings in the APE were over 45 years old and none were previously surveyed by the IL SHPO. None of the buildings had been previously listed in, or determined eligible for listing in, the NRHP.

Of the 53 individual buildings within the APE, 48 are single- or multiple-family dwellings, two are commercial buildings, one is a residential building with a commercial addition, and two are church complexes (the Ascension-St. Susanna School and Church Complex and True Holiness Church of God in Christ with its attached rectory).

After identification and evaluation of 53 total properties, 52 buildings were recommended not eligible for listing in the NRHP either individually or as part of a historic district (RGA 2024b). The collection of evaluated buildings are historically associated with the period of industrial expansion that caused an influx of residents to fill the city's new jobs. However, the evaluated buildings lack the requisite integrity of design, setting, materials, workmanship, feeling, and association to convey their historic associations with the origins and growth of the City of Harvey and as such, did not meet any of the criteria for listing and were determined not eligible for listing in the NRHP, either individually or as a district.

It was determined that the Ascension-St. Susanna School and Church Complex, which is located north of 153rd Street on Myrtle Avenue (i.e., north of the acquisition area), is eligible for listing in the NRHP. The Ascension-St. Susanna School and Church Complex is recommended eligible for listing in the NRHP for its significance under Criteria A and C for its association with Black history and racial integration during the Civil Rights era and for its architectural significance depicting nationally popular institutional architectural styles of the early 20th century. The 2.4-acre property includes a 1919 church, a 1926 school, a 1949 rectory, and a 1957 convent, all of which retain sufficient integrity for listing.

Alternative 1 – No Action

Under the No Action alternative, no construction would occur, so there would be no short-term impact on historic structures. However, the No Action alternative would not reduce the risk of flooding in the project area. During flood events, floodwaters near the project area could potentially

rise and impact the Ascension-St. Susanna School and Church Complex, which was determined eligible for listing in the NRHP. No other eligible historic structures were identified in the project area. Thus, the No Action alternative would have a minor to moderate long-term adverse impact on the identified historic structures depending on the extent, frequency, and duration of flood events in the area.

Alternative 2 – Proposed Action

The Proposed Action would have no short-term impact on historic structures identified in the project area. The historic architectural survey identified only the Ascension-St. Susanna School and Church Complex as eligible for listing in the NRHP. No other eligible historic properties are in the project area. The Proposed Action would not require any acquisition of permanent rights-of-way or easements, or temporary construction easements from the recommended NRHP boundary of the Ascension-St. Susanna School and Church Complex. The Proposed Action would not remove any of the character-defining architectural details from the interior or exterior of the buildings within the complex. Thus, the Proposed Action would not have a direct effect on the Ascension-St. Susanna School and Church Complex.

The Ascension-St. Susanna School and Church Complex was constructed as a component of a dense, urban neighborhood, and the proposed stormwater detention basin would be within the complex's viewshed to the south. The demolition of 15 dwellings on the basin site would further diminish the already damaged integrity of the urban setting of the NRHP-eligible church complex. However, of the 31 parcels on the basin site, 16 are presently vacant and 15 contain residential buildings. More than half of the buildings have been demolished and the historical view from the complex is already compromised. The Proposed Action would not further erode the setting of the Ascension-St. Susanna School and Church Complex to the extent that it would no longer be eligible for listing in the NRHP. Furthermore, the detention basin would not impact the Ascension-St. Susanna School and Church Complex's integrity of location, design, materials, workmanship, feeling, and association. FEMA determined that the project would result in no adverse effect to the identified resource. The IL SHPO concurred with FEMA's finding of No Adverse Effects on Historic Properties on October 6, 2024 (Appendix C).

The Proposed Action would have minor to moderate long-term benefits on the NRHP-eligible Ascension-St. Susanna School and Church Complex by increasing flood storage within the project area, therefore reducing the risk of flooding and associated damage to the historic property.

3.6.2. ARCHAEOLOGICAL RESOURCES

A Phase IA archaeological survey was conducted to assess the existing and historical conditions within the APE, to research site development activities, and to contextualize previous ground disturbance within the APE to assess if the APE has low, medium, or high potential to contain archaeological resources.

Historic aerial imagery shows the conditions in the APE changing throughout the late 20th century, with most, if not all, of the original outbuildings being demolished. Additionally, in the early 2000s,

approximately half of the original dwellings within the APE had been demolished (RGA 2024a). Each of the vacant parcels was walked over to assess the potential for intact buried historic or precontact deposits, and all were determined to have been graded and filled to a point where intact deposits are unlikely. Based on the pedestrian reconnaissance and background research, the APE is unlikely to contain intact cultural deposits or features relating to domestic disposal of refuse, such as privies and other landscape features, which could relate to early occupations before the advent of utilities, including indoor plumbing. Therefore, the APE is assessed to have a low sensitivity for historic archaeological resources to be present.

A review of archaeological site files in the Illinois Inventory of Archaeological Sites revealed that there are no precontact archaeological sites that have been registered within a 1-mile radius of the APE. In addition, the APE is outside the Illinois State Museum statewide area of high archaeological potential. Based on the results of the site file search and environmental setting, in addition to the extensive land alterations related to the development and subsequent demolition of structures within the neighborhood, the APE was assessed to have a low potential for precontact archaeological resources to be present.

FEMA consulted with the IL SHPO on September 13, 2024, with a determination that no further archaeological survey was required. The IL SHPO concurred on October 6, 2024 (Appendix C).

Alternative 1 – No Action

The No Action alternative would have no impact on known archaeological resources because no construction or ground disturbance activities would occur, and the potential to encounter intact archaeological sites in the APE was determined to be low.

Alternative 2 – Proposed Action

The Proposed Action would have no impact on any archaeological sites or resources because no significant cultural materials or archaeological sites were identified during the survey. The following project conditions, also included in Section 6.2, would provide protection in case of inadvertent discovery of archaeological sites:

- The contactor will monitor ground disturbance during the construction phase. Per the FEMA standard project condition, should human skeletal remains or historic or archaeological materials be discovered during construction, all ground-disturbing activities on the project site will cease and MWRD will notify the coroner's office (in the case of human remains), the recipient (IEMA), and FEMA. FEMA will notify the IL SHPO and the Office of the State Archaeologist. FEMA will then notify the Miami Tribe of Oklahoma and Pokagon Band of Potawatomi Indians Tribal Historic Preservation Offices.

- All borrow or fill material must come from pre-existing stockpiles or commercially procured material from a pre-existing source. If this is not the case, the subrecipient shall inform FEMA of the fill source so required agency consultations can be completed and FEMA approval will be required prior to beginning ground disturbing activities.

3.6.3. TRIBAL COORDINATION AND RELIGIOUS SITES

EO 13175*, Consultation and Coordination with Indian Tribal Governments*, directs federal agencies "to establish regular and meaningful consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes." 65 Fed. Reg. 67249 (Nov. 9, 2000).

Requests for information on the presence or absence of known archaeological and Native American religious sites within the proposed project area were submitted to federally recognized tribal nations with potential interests in the project. On November 15, 2023, FEMA notified the following tribal nations:

- Citizen Potawatomi Nation
- Delaware Tribe of Indians
- Forest County Potawatomi Community of Wisconsin
- Hannahville Indian Community
- Ho-Chunk Nation
- Prairie Band Potawatomi Nation
- Miami Tribe of Oklahoma
- Pokagon Band of Potawatomi Indians
- Shawnee Tribe

On August 20, 2024, FEMA sent a letter to the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan, who were identified more recently as being in the area of interest after the original 2023 notification.

FEMA sent a letter to each tribe with details about the project location and proposed activity and requested comments from each tribal government within 30 days of the date of the letter. FEMA received responses from two tribal nations. The Pokagon Band of Potawatomi Indians responded that they have made a determination that there will be no historic properties affected of significance to the Pokagon Band of Potawatomi Indians. However, if any archaeological resources are uncovered during this undertaking, work must stop and the tribe contacted immediately.

On December 13, 2023, the Miami Tribe of Oklahoma Tribal Historic Preservation Officer responded that they had "no objection to the above-referenced project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Illinois, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act, 25 U.S.C. §§ 3001 – 3013, or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery."

On October 7, 2024, the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan responded that they did not identify any information concerning the presence of any cultural resources significant to the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians within the APE. In the event of an encounter with unanticipated human remains, funerary objects, and artifacts, they request to be notified within 72 hours of the discovery. Tribal correspondence is included in Appendix C.

Alternative 1 – No Action

The No Action alternative would have no impact on known archaeological or Native American religious sites because no construction or ground disturbance activities would occur.

Alternative 2 – Proposed Action

The Proposed Action would have no impact on known archaeological or Native American religious sites. If any human or archaeological remains are encountered during project construction, work will stop immediately, and FEMA and IL SHPO will be notified. FEMA will then notify the Miami Tribe of Oklahoma, Pokagon Band of Potawatomi Indians Tribal Historic Preservation Offices, and the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians.

3.7. Comparison of Alternatives

Table 3.6 provides a summary of the potential environmental effects from implementing the No Action alternative, Proposed Action, and any applicable proposed mitigation.

Table 3.6. Summary of Environmental Impacts and Mitigation

Resource	No Action Impacts	Proposed Action Impacts	Mitigation
Geology, Topography, Soils	• No short-term impacts on soils, geology, or topography. • No long-term impacts on geology or topography. • Minor long-term adverse impacts on soils in the project area and vicinity, depending on the extent, frequency, and duration of flood events.	• Minor short-term adverse impacts on soils and topography from earthwork and grading. • No short- or long-term impacts on geology. • Minor long-term benefits on soils from the reduced risk of flooding and erosion. • Negligible long-term benefits on topography from reshaping the detention basin area.	Implement Conditions 1 and 3 in Section 6.2.
Water Resources and Water Quality	• No short-term impact on surface or groundwater quality. • Minor to moderate long-term adverse impact on surface water and groundwater quality from sedimentation and contaminants transferred by floodwaters into water bodies.	• Minor short-term adverse impact on surface water quality during construction from equipment use. • Negligible short-term adverse impact on groundwater quality from construction equipment use. • Minor to moderate long-term benefits on surface and groundwater quality from reduced risk of flooding and erosion as well as site restoration.	Implement Conditions 1 and 3 in Section 6.2.
Floodplain Management	• No short-term impact on the floodplain. • Moderate long-term adverse impacts from periodic flooding and impacts on people, property, and water quality.	• Minor short-term adverse impacts from construction in the floodplain. • Minor long-term adverse impacts from excavation in the floodplain that would alter the path of water. • Moderate long-term benefits on floodplains by increasing flood storage, reducing flood risk, and restoring the site with plants.	Implement Conditions 1, 3, and 4 in Section 6.2.

Resource	No Action Impacts	Proposed Action Impacts	Mitigation
Air Quality	• No short-term impact on air quality. • Negligible long-term adverse impacts from continued equipment emissions for flood-related road repairs and detours.	• Minor short-term adverse impacts from construction equipment emissions and exposed soils. • Negligible long-term benefits from reduced need for future repair work to address flood impacts.	Implement Condition 5 in Section 6.2.
Climate	• No short-term impact on climate. • Moderate long-term adverse impacts as climate change would increase flood risk and associated repairs, and community resilience to climate change would not be strengthened.	• Minor short-term adverse impacts from construction equipment GHG emissions. • Minor to moderate long-term benefits from restoration and increasing community resilience to climate change.	Implement Condition 5 in Section 6.2.
Terrestrial and Aquatic Environment	• No short-term impacts. • Negligible to minor long-term adverse impacts from periodic flooding and associated sediment and pollutant deposition in project area.	• Minor short-term adverse impacts on terrestrial environments from vegetation clearing and other construction activities. • No short-term impact on aquatic environments. • Negligible long-term benefits on terrestrial and aquatic environments from construction of the detention basin, restoration with native plants, and flood pollutant mitigation.	Implement Conditions 1, 3, 8, and 9 in Section 6.2.
Wetlands	• No short-term impacts. • Negligible long-term adverse impacts from periodic flooding and associated sediment and pollutant deposition in project area, which could affect wetlands in the vicinity.	• No short or long-term impacts as there are no wetlands in or near the project area.	Implement Conditions 1 and 3 in Section 6.2.
Threatened and Endangered Species	• No effect on listed species. • No short- or long-term impacts.	• No effect on listed species. • No short- or long-term impacts.	No conditions required.

Resource	No Action Impacts	Proposed Action Impacts	Mitigation
Migratory Birds and Bald and Golden Eagles	• No short- or long-term impacts.	• Minor short-term adverse impacts on migratory birds. • Minor long-term benefits on migratory birds from native plantings. • No short- or long-term impacts on bald eagles because there is no suitable habitat in the project area.	Implement Condition 6 and 9 in Section 6.2.
Hazardous Materials	• No short-term impacts. • Minor long-term adverse impacts from periodic flooding that could lead to the dispersal of hazardous materials.	• Minor short-term adverse impact from construction equipment use and the potential for inadvertent exposure of known or unknown hazardous materials. • Minor long-term benefit from reduced risk of flooding and dispersal of hazardous materials.	Implement Conditions 7 and 8 in Section 6.2.
Noise	• No short-term impacts. • Minor long-term periodic adverse impacts from flood-related repairs and construction.	• Minor short-term adverse impacts associated with construction. • Minor long-term beneficial impact from reduced flood risk and associated need of repair construction.	Implement Conditions 9 and 10 in Section 6.2.
Public Services and Utilities	• No short-term impacts. • Minor to moderate long-term adverse impacts from flood-related damage and service disruptions.	• Negligible short-term adverse impacts from construction. • Moderate long-term benefits from separating combined sewers and reducing the risk of flooding.	No conditions required.
Traffic and Circulation	• No short-term impacts. • Moderate recurring intermittent adverse impacts from flood-related road closures.	• Minor short-term adverse impact from construction traffic. • Minor long-term benefit from the reduction in road closures caused by flooding.	Implement Conditions 11 and 12 in Section 6.2.

Resource	No Action Impacts	Proposed Action Impacts	Mitigation
Land Use	• No short-term impacts. • Minor long-term adverse impacts from underutilization of properties.	• No short-term impact. • Minor long-term benefit from protection of existing uses.	Implement Conditions 13 and 14 in Section 6.2.
Environmental Justice	• No short-term disproportionately high and adverse impact. • Long-term disproportionately high and adverse impact on EJ populations from periodic flooding and cost of repairs.	• Minor short-term adverse impacts on EJ populations; however, impact would not be disproportionately high and adverse because of the short duration of these impacts and implementation of BMPs • Moderate long-term benefit on EJ populations from reduced flooding and flood hazards.	Implement Conditions 13 and 14 in Section 6.2.
Public Health and Safety	• No short-term impacts. • Moderate long-term adverse impacts from future flood events.	• Negligible short-term adverse impacts from construction. • Moderate long-term benefit from reducing the risk of flooding that would threaten life and property.	Implement Conditions 15 and 16 in Section 6.2.
Historic Structures	• No short-term impacts. • Minor to moderate long-term adverse impact on the identified historic structures from periodic future flood events.	• No short-term impact on historic structures. • Minor to moderate long-term benefits on the NRHP-eligible property by reducing the increased risk.	No conditions required.
Archaeological Resources	• No Impact	• No Impact	Implement Conditions 17 and 18 in Section 6.2.
Tribal and Religious Sites	• No Impact	• No Impact	Implement Condition 17 in Section 6.2.

SECTION 4. Cumulative Effects

This section addresses the potential cumulative effects associated with the implementation of the Proposed Action. As defined by the Code of Federal Regulations, cumulative effects are effects on the environment that result from the incremental effects of a proposed action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes those other actions (40 C.F.R. § 1508.1(i)(3) (2024)). CEQ's regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for federal projects. The Code also states that cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Other statutes also require federal agencies to consider cumulative effects. These include the CWA Section 404(b)(1) guidelines, the regulations implementing the conformity provisions of the CAA, the regulations implementing Section 106 of the NHPA, and the regulations implementing Section 7 of the ESA.

This EA reviews the potential for other flood improvement or construction projects to create cumulative effects in and near the project area. The Proposed Action is an effort to mitigate flood hazards within the City of Harvey. These flood hazards are a result of limited stormwater conveyance capacity from combined sewer systems, as discussed in Section 1.3. The Proposed Action would include the construction of a detention pond and stormwater conveyance improvements, as described in Section 2.2.

In September 2022, IDOT started construction on the Wood Street Sewer System, which includes improvements to the four-lane roadway and sewer system on Wood Street/Ashland Avenue that extends roughly 3 miles from 138th Street to 161st Street. As part of this project, IDOT is rebuilding the four-lane road, including constructing modernized traffic signals and turn lanes, new lighting, curbs and gutters, and a safer railroad crossing. The project also includes installation of a new storm sewer system (the Wood Street Sewer System) to address drainage and flooding issues (Ramos 2022). The project is expected to take two full construction seasons, and would be completed before the Proposed Action. IDOT and MWRD have coordinated on the designs of the Wood Street Sewer System improvements and IDOT plans to construct a sewer pipe that would allow for the sewer improvements constructed under the Proposed Action to easily connect to the Wood Street Sewer System.

The City and MWRD envision creating a community park around the detention basin constructed as part of the Proposed Action. The future community park would be developed with green infrastructure BMPs, such as bioswales and permeable pavement, to further reduce flooding and promote water quality. The park is also envisioned to include playground equipment, trails, and educational signage for green infrastructure. The new community park is not included in or part of the Proposed Action, would not be funded by FEMA, and it would be constructed after the Proposed Action is implemented.

In September 2023, Harvey submitted an application to the state to help finance this new public park around the detention basin, called the Central Park project. The proposed project included an amphitheater, fishing pond, dog park, and partly repurposed Ascension-St. Susanna Catholic School campus, owned by the city around the area of 153rd Street and Myrtle Avenue. The City would use the funds to appraise and purchase vacant land along 154th Street for the endeavor and relocate the Community Economic Development Association's Harvey office from the corridor. However, in June 2024, the City withdrew the application before the state made their funding decision (Dunne and McKee 2024). The City is open to a park at this site should funding become available.

This EA concludes that the Proposed Action would result in short-term, construction-related, negligible to minor adverse impacts on soil and topography, water quality, floodplains, air quality, climate, migratory birds, terrestrial and aquatic environments, hazardous materials, noise, public services and utilities, traffic and circulation, land use, EJ, and public health and safety. The cumulative projects discussed above may result in cumulative short-term adverse impacts if the timing of their construction overlaps. Any potential overlap in construction would only occur for a short duration. Additionally, the majority of construction of the Wood Street Sewer improvements would not overlap the project area location and construction of the community park would occur after the construction of the Proposed Action. This would reduce the chance for cumulative short-term adverse impacts related to construction.

The Proposed Action would result in negligible to moderate long-term benefits on soils and topography, water quality, floodplains, air quality, climate change, terrestrial and aquatic environments, wetlands, migratory birds, hazardous materials, public services and utilities, traffic and circulation, land use, EJ, public health and safety, and historic structures. The cumulative projects discussed above would result in cumulative long-term benefits on soils, water quality, floodplains, terrestrial and aquatic environments, migratory birds, hazardous materials, public services and utilities, EJ, and public health and safety when combined with the Proposed Action.

SECTION 5. Agency Coordination and Public Involvement

5.1. Public Engagement

The Proposed Action has been discussed at several city council meetings. A public notice was posted in the *Chicago Tribune* on February 23, 2024, and in the *Daily Southtown* on March 5, 2024. The notice provided information on the Proposed Action and potential impacts on floodplains.

Additionally, FEMA sent a direct mailer to all addresses within and near the project area that included a circular that summarized the project, a map of the project area, and the public notice. MWRD also posted the circular in local public libraries and on the City of Harvey website. FEMA created a project specific page on the FEMA National Environmental Policy Act Repository to house all public documents relevant to the Proposed Action at the following web address: https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey. Finally, a Spanish translation of these documents was provided to the City of Harvey for dissemination and posted on a Spanish repository site: Evaluación Ambiental para el Proyecto de Gestión de Aguas Pluviales de la Ciudad de Harvey, Condado de Cook, Illinois, EMC-2022-BR-012-0015, 2024 | FEMA.gov.

To date, FEMA has received 18 individual comments from the public on this project. FEMA compiled the main concerns expressed by the public, summarized in Section 3.5.5, and met with MWRD and the City of Harvey to discuss these concerns in March 2024. Based on input from MWRD and the City, FEMA developed an FAQ document, which responds to common questions that have been received since the circular was mailed and provides updates on the project review steps. The FAQ document was posted on FEMA's public-facing landing page on August 9, 2024.

The public notice, project circular, and FAQ document are included in Appendix E.

5.2. Scoping

A public scoping notice was published on FEMA's website at https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey on August 9, 2024, to notify and provide the public with an opportunity to comment on the Proposed Action, potential alternatives, and preliminary identification of environmental issues. The scoping notice was sent to the following entities:

- U.S. government agencies: Bureau of Indian Affairs, EPA Region 5, USACE Chicago District, U.S. Department of Agriculture National Resources Conservation Service, U.S. Department of Housing and Urban Development, and USFWS Illinois-Iowa Field Office.
- State agencies: Illinois Commerce Commission, IDNR Water Permitting, IDOT, IEMA, IEPA, IL SHPO, and Illinois National Flood Insurance Management Program State Coordinator

- Tribes: Citizen Potawatomi Nation, Delaware Tribe of Indians, Forest County Potawatomi Community of Wisconsin, Hannahville Indian Community, Ho-Chunk Nation, Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan, Miami Tribe of Oklahoma, Pokagon Band of Potawatomi Indians, Prairie Band Potawatomi Nation, and Shawnee Tribe

- Local agencies and communities: City of Harvey, MWRD, Cook County Division of Transportation, and Cook County Emergency Management and Regional Security

The scoping comment period closed on September 13, 2024. IDNR provided one comment letter concluding that the Proposed Action is not likely to have adverse effects on protected resources. However, IDNR recommended the following conservation measures be added to the Draft EA: limiting tree clearing to between November 1 and March 31 to protect birds and bats; implementing BMPs to prevent trash, debris, and sediment from entering waterways; planting native plant species as part of the project; implementing a long-term invasive species management program; and following the International Dark-Sky Association's guidance for any required lighting. These recommendations were incorporated into the Draft EA as applicable. Additionally, one member of the public responded with questions related to the acquisition of properties during the FEMA review period and the status of the environmental review. FEMA responded to these concerns and updated the Draft EA as applicable.

5.3. Draft Environmental Assessment Public Comment

This Draft EA will be made available for agency and public review and comment for a period of 30 days. Additionally, an Executive Summary of the Draft EA will be available in in both English and Spanish. The public engagement process will include a public notice with information about the Proposed Action in the *Chicago Tribune* and *Daily Southtown*. The Draft EA will be available on the MWRD's website at https://mwrd.org/public-notices. A hard copy of this EA will be available for review at the Harvey City Hall at 15320 Broadway Avenue, Harvey, Illinois 60426. Interested parties may request a mailed or emailed copy of the Draft EA via email to fema-r5-environmental@fema.dhs.gov.

This Draft EA reflects the evaluation and assessment of the federal government, the decision-maker for the federal action. The public is invited to submit written comments via email to fema-r5-environmental@fema.dhs.gov or via mail to the following:

Duane Castaldi
Regional Environmental Officer
FEMA Region 5
536 S. Clark Street, 6th Floor
Chicago, IL 60605

FEMA will consider any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. If no substantive comments are received from the public and/or agency reviewers, this EA will be assumed to be final and a FONSI will be issued by FEMA.

SECTION 6. Project Conditions and Permits

6.1. Permits

IEPA requires construction projects that disturb more than 1 acre of soil to obtain a Permit for Stormwater Discharges from Construction Site Activities (General NPDES Permit No. ILR10). The Proposed Action would disturb approximately 6 acres and would therefore exceed this threshold. No other permits are anticipated to be required.

Table 6-1 summarizes the necessary permits to implement the Proposed Action and their status.

Table 6-1. Permit Summary

Issuing Agency	Resource	Permit Title	Applicable Regulation/Law	Status
IEPA	Soils, Water Resources and Quality	Permit for Stormwater Discharges from Construction Site Activities (General NPDES Permit No. ILR10) or General Construction Stormwater Permit	CWA Section 402	Not complete. To be obtained by construction contractor following project award and before starting construction.

6.2. Project Conditions

MWRD is responsible for compliance with federal, state, and local laws and regulations, including obtaining any necessary permits before beginning construction activities, and adhering to any conditions laid out in those permits. Any substantive change to the scope of work will require re-evaluation by FEMA for compliance with NEPA and any other laws or EOs. Failure to comply with FEMA grant conditions may jeopardize federal funding.

GENERAL PROJECT CONDITIONS

1. MWRD is responsible for obtaining and complying with all required local, state, and federal permits and approvals.
2. If deviations from the proposed scope of work result in substantial design changes, the need for additional ground disturbance, additional removal of vegetation, or any other unanticipated changes to the physical environment, MWRD must contact FEMA so that the revised project scope can be evaluated for compliance with NEPA and other applicable environmental laws.

SOILS, WATER RESOURCES AND QUALITY, FLOODPLAIN MANAGEMENT, TERRESTRIAL AND AQUATIC ENVIRONMENT, AND WETLANDS

3. Place excavated material, excess fill, and debris in a licensed location that does not impact surface waters, wetlands, or the 100-year floodplain.
4. Conduct any activities that would occur within the floodplain in accordance with Cook County's Floodplain Management Regulations and the MWRD Watershed Management Ordinance (WMO). Coordinate with the local floodplain administrator and IDNR about any necessary permits to conduct activities within the floodplain.

AIR QUALITY AND CLIMATE

5. Implement applicable BMPs from EPA's Construction Emission Control Checklist (included in Appendix F).

MIGRATORY BIRDS

6. Implement a seasonal work restriction; tree and vegetation removal and thinning would only occur during the winter months (between November 1 and March 31).

HAZARDOUS MATERIALS

7. Before construction, complete surveys of structures to determine the presence of lead-based paint (LBP) or asbestos-containing material (ACM) in structures.
8. Handle and dispose of any hazardous materials in accordance with applicable local, state, and federal regulations.

NOISE

9. Keep heavy machinery and equipment well maintained. Use sound-control devices and mufflers.
10. Comply with Cook County and City of Harvey's noise ordinance.

TRAFFIC AND CIRCULATION

11. Use traffic control devices, such as flag people and signs, to mitigate and guide traffic as needed during construction.
12. Place and maintain traffic control devices in accordance with the IDOT specifications and standards.

ENVIRONMENTAL JUSTICE AND LAND USE AND ZONING

13. Implement conditions for air quality, hazardous materials, noise, traffic, and public health and safety.

14. MWRD and the City will follow all federal Uniform Relocation Assistance Act requirements regarding acquisition, including offering relocation assistance and advisory services to impacted property owners and residents (both owners and renters of affected properties). Document all communication regarding acquisition with homeowners and residents in accordance with the requirements in code. Follow all procedural requirements, including offering moving and related expenses, replacement housing for homeowners and tenants, mortgage insurance, relocation planning, assistance planning, and advisory services.

PUBLIC HEALTH AND SAFETY

15. Complete all construction activities with qualified personnel trained in the proper use of equipment, including all safety precautions.
16. Use appropriate signage and barriers before construction activities to alert pedestrians and motorists of project activities.

ARCHAEOLOGICAL RESOURCES AND TRIBAL AND RELIGIOUS SITES

17. The contractor will monitor ground disturbance during the construction phase. Per FEMA standard project condition, should human skeletal remains or historic or archaeological materials be discovered during construction, all ground-disturbing activities on the project site will cease and MRWD will notify the coroner's office (in the case of human remains), the recipient (IEMA), and FEMA. FEMA will notify the IL SHPO and the Office of the State Archaeologist. FEMA will then notify the Miami Tribe of Oklahoma, Pokagon Band of Potawatomi Indians Tribal Historic Preservation Offices, and the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians.
18. All borrow or fill material must come from pre-existing stockpiles or commercially procured material from a pre-existing source. If this is not the case, the subrecipient shall inform FEMA of the fill source so required agency consultations can be completed and FEMA approval will be required prior to beginning ground disturbing activities.

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SECTION 8. List of Preparers

The following is a list of preparers who contributed to the development of the MWRD City of Harvey Stormwater Management Project EA for FEMA. The individuals listed below had principal roles in the preparation of this document. Many others contributed, including senior managers, administrative support personnel, and technical staff, and their efforts in developing this EA are appreciated.

Federal Emergency Management Agency

Reviewers	Role in Preparation
Adams, Guenevere	Environmental Protection Specialist
Barnhart, Rachel	Historic Preservation Specialist, Structures
Nagle, Donna	Historic Preservation Specialist, Archaeology
Castaldi, Duane	Project Monitor, Regional Environmental Officer

CDM Smith

Preparers	Experience and Expertise	Role in Preparation
Argiroff, Emma	Environmental Planner	NEPA Documentation
Dovale, Carly	Environmental Scientist	NEPA Documentation
Egge, Matt	Environmental Planner	NEPA Documentation
Jones, Emma	Environmental Planner and Biologist	NEPA Documentation
Giordano, Brock	Management Specialist	NEPA Documentation, Technical Review, Cultural Resources
Pham, Nicholas	Environmental Engineer	NEPA Documentation, Air Quality
Stenberg, Kate	Ph.D., Senior Biologist, Senior Planner	Quality Control/Technical Review

This document was prepared by CDM Smith under Contract No.: 70FA6023A00000006, Task Order: 70FA6023F00000093.

Appendix A. Eight-Step Checklist for Floodplains

EXECUTIVE ORDER 11988
Floodplain Management Checklist (44 C.F.R. Part 9)

TITLE: MWRD City of Harvey Stormwater Management Project

PROPOSED ACTION:

The Metropolitan Water Resources District of Greater Chicago (MWRD, Subapplicant) proposes to construct a new stormwater system and detention basin in the City of Harvey in Cook County, Illinois. The purpose of the proposed project is to reduce flood hazards and protect people and property within the City of Harvey. This project is needed because the City has a history of widespread flooding, particularly in the northeast part of the City along the CSX railroad. Stormwater runoff generated within the project area and vicinity is primarily handled by a combined sewer system, which collects and conveys stormwater runoff and sanitary sewer flows together through the same system of pipes. This system limits conveyance and flood storage capacity, and during heavy rain events, the combined sewer system can become overwhelmed by excess water, resulting in shallow ponding and flooding in and near the project area. Flood events in the City have resulted in hazards and damage, including combined sewer backups into basements, overland flow into buildings, and nuisance street and yard flooding.[1]

The Proposed Action would include the construction of an approximately 3.4-acre detention basin to store stormwater flows until they are released into the new stormwater sewer (general project coordinates at the center of the detention basin: 41.611047, -87.652735). The new stormwater sewer would drain into the Illinois Department of Transportation's (IDOT) large diameter storm sewer system, the Wood Street Sewer System, which is treated at the Calumet Water Reclamation Plant and discharged into the Little Calumet River. The Proposed Action would also separate the combined sewer system into separate pipes for stormwater and sewer flows and install related ancillary stormwater infrastructure, such as catch basins, inlets, and maintenance hole covers within the rights-of-way throughout the project area. The Proposed Action would require approximately 6 acres of disturbance over the 126-acre project area. Project activities are described below.

- A naturalized stormwater detention basin would be constructed along Myrtle Avenue between 153rd Street and 154th Street to provide an additional 23-acre-feet of stormwater storage capacity. The detention pond would be approximately 3.4 acres in area and up to 15 feet deep. An 8-foot-wide path would be constructed around the perimeter of the basin. To construct the detention basin, 15 existing structures along Myrtle Avenue and the Myrtle Avenue roadway between 153rd and 154th streets would be demolished and removed. Additionally, approximately 114 trees would be removed. The site would be accessed from 153rd and 154th streets and equipment would likely be staged along existing streets and paved areas. Excavated materials would be hauled off-site to a designated disposal location. The detention basin would be

[1] 2021. Metropolitan Water Reclamation District of Greater Chicago Central Park Stormwater Detention Basin and Separate Storm Sewer Improvements in Harvey, CSA HR Green Job No. 201365 MWRD Contract 18-249-AF.

replanted with native wetland and mesic plants for erosion control, increased stormwater attenuation, and natural pollutant removal for the pond.

- Approximately 1,900 feet of 18-inch to 36-inch storm sewers would be constructed along 153rd Street between Myrtle Avenue and Center Avenue to convey stormwater to the newly constructed detention basin. Additionally, approximately 2,250 feet of 24-inch to 36-inch storm sewers would be built along 153rd Street between Wood Street and Myrtle Avenue to connect with the IDOT storm sewer system. Approximately 700 feet of low flow 12-inch storm sewers would be built along Vine Avenue between 153rd and 152nd streets to connect a low point of the proposed storm sewer system to the city's existing combined sewer system to the north of the project area; stormwater from the detention basin and a portion of the western side of the project area would be channeled through the Vine Avenue pipe into the existing sewer system.
- Approximately 5,000 feet of 12-inch to 18-inch storm sewers would be constructed along side streets between 153rd and 154th streets. The majority of runoff in the project area would be directed by the new storm sewer improvements to flow into the proposed detention basin. Once stormwater has reached the capacity of the detention basin drain, runoff would exit the basin and flow west to Vine Avenue and then north to drain into a 36-inch storm sewer running along 152nd Street. A control structure would be installed at the west end of the storm sewer system at 153rd and Wood streets to limit flows to the storm sewer to 20 cubic feet per second and to ensure efficient operation of the storm sewer system and detention basin.

APPLICABILITY: Actions which have the potential to affect floodplains or their occupants, or which are subject to potential harm by location in floodplains.

☒ **YES** ☐ **NO** The Proposed Action could potentially adversely affect the floodplain.

☐ **YES** ☒ **NO** The Proposed Action could potentially be adversely affected by the floodplain.

REMARKS: The Proposed Action would include constructing a 23-acre-foot stormwater detention basin and installing storm sewer improvements. The Proposed Action would have the potential to adversely affect the 100-year floodplain as it involves construction within the floodplain to create the detention basin and install stormwater conveyance improvements. The detention basin and storm sewer improvements would not be susceptible to impacts from flooding as the detention basin would be created to hold and convey floodwaters and the storm sewer improvements would be underground.

IF BOTH ANSWERS ARE NO, REVIEW IS COMPLETE; OTHERWISE CONTINUE WITH REVIEW.

Mark the review steps required per applicability: ☒ All 8 / ☐ 1, 4, 5, 8 (44 CFR Part 9.5(g)) / ☐ 1, 2, 4, 5, 8 (44 CFR Part 9.5(d))

CRITICAL ACTION: ☐ **YES** Review against 500 Year floodplain.
☒ **NO** Review against 100 Year floodplain

STEP 1: Determine whether the Proposed Action is in the 100-year floodplain, or, for critical actions, in the 500-year floodplain.

FLOOD HAZARD DATA:

☒ **YES** ☐ **NO** The project is located in a 100-year floodplain as shown in a FEMA FIRM.

☐ **YES** ☒ **NO** The project is located in a 500-year floodplain as shown in a FEMA FIRM.

☐ **YES** ☒ **NO** The project is located in a floodplain as mapped by a FEMA draft/preliminary study.

☐ **YES** ☒ **NO** The project is located in a floodplain as mapped by another Agency (State, Corps, USGS, NRCS, local community, etc.).

☐ **YES** ☒ **NO** The project is outside the floodplain but has potential to affect the floodplain, including support of floodplain development.

☐ **YES** ☒ **NO** The Proposed Action is subject to flooding based on evaluation from soil surveys, aerial photos, site visits and other available data.

☐ **YES** ☒ **NO** FEMA assumes the Proposed Action is subject to flooding based upon previous flooding of the facility/structure.

REMARKS: According to Flood Insurance Rate Map (FIRM) Panels 17031C0732J and 17031C0731J, both effective August 19, 2008, most of the project area is within an area of minimal flood hazard (Zone X). The northeastern portion of the project area is in Zone AH, which is an area with a 1 percent annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet.

WETLAND DATA:

☐ **YES** ☒ **NO** The Proposed Action is located in a wetland as mapped by the U.S. Fish and Wildlife Service's National Wetlands Inventory.

☐ **YES** ☒ **NO** The Proposed Action may be in a wetland based on evaluation from soil surveys, aerial photographs, site visit or other data.

☐ **YES** ☒ **NO** The Proposed Action is outside of a designated wetland but has potential to affect the wetland, including support or encouragement of wetland development.

REMARKS: According to a review of the USFWS National Wetlands Inventory on June 7, 2024, there are no wetlands within or near the project area. The nearest wetland feature is about 1.1 miles west of the site and is a freshwater emergent wetland that is part of the Markham Prairie. Further, although the stormwater detention basin would be planted with wetland plants, the basin

would not be expected to support the development of wetlands as the water levels would fluctuate unnaturally in the basin.

IF ANY ANSWER IS YES, CONTINUE WITH THE FOLLOWING STEPS; OTHERWISE REVIEW IS COMPLETE.

STEP 2: Notify the public at the earliest possible time of the intent to carry out an action in a floodplain and involve the affected and interested public in the decision-making process.

☐ Notice was provided as part of a disaster cumulative notice.
Publication: Click or tap here to enter text.
Date: Click or tap here to enter text.

☒ Project-specific notice provided.
Publication: *Chicago Tribune and Daily Southtown.*
Date: *February 23, 2024, and March 5, 2024*

☐ Per allowances noted at 44 CFR Part 9.12(d)6, this notice is understood to meet the requirements of both Steps 2 and 7.

STEP 3: Identify and evaluate practicable alternatives to locating the Proposed Action in a floodplain (including alternatives sites, actions and the "no action" option). If a practicable alternative exists outside the floodplain, FEMA must locate the action at the alternative site.

☐ **YES** ☒ **NO** Is there a practicable alternative site location outside of the floodplain / wetland?

REMARKS: There are no practicable alternative sites outside of the floodplain. A new storm sewer would need to be implemented in this area to separate stormwater and sewer flows and address flooding risks caused by combined sewers.

☐ **YES** ☒ **NO** Is there a practicable alternative action outside of the floodplain / wetland that will not affect the floodplain / wetland?

REMARKS: There are no practicable alternatives to the Proposed Action that are outside of the floodplain or wetlands. The City of Harvey and MWRD considered additional alternatives to the Proposed Action based on the objectives to reduce surface flooding for the 25-year, 50-year, and 100-year storm events, maximize the reduction of impacted structures from these flood events, and eliminate or reduce basement sewer backups during a 10-year storm event. The alternatives included a stormwater conveyance-only alternative, and a stormwater storage-only alternative implemented in the project area and vicinity (HRGreen 2022a).

The conveyance-only alternative would include installing additional conveyance pipes, relief sewers, and separating storm flows from going into combined sewers via available outlets. The study found that the effectiveness of this alternative would be directly dependent on the available capacity of the five major trunk sewers

underneath the CSX railroad bed that facilitate drainage for the study area. Any proposed conveyance improvements would need to connect into these trunk sewers to accommodate flow downstream into the combined sewer or Little Calumet River. However, there is a lack of capacity in these trunk sewers, which limits flood conveyance capacity. The results from this alternative concept analysis only indicate that there would be only a marginal reduction in flooding for a 25-year storm event. Thus, it does not meet the City's primary objectives for flood reduction. The City of Harvey and MWRD determined that a conveyance only option was not a viable alternative by itself to address flooding in the project area.

The storage-only alternative would include constructing detention basins throughout the study area to reduce flooding. Because of the lack of capacity in the trunk sewers leaving the study area, the construction of detention basins is necessary for providing storage to attenuate peak flood flows to reduce the stress on existing trunk sewers. However, any detention basin construction would still need to connect with the existing combined sewer system and trunk lines. Therefore, it was determined that implementing the storage-only alternative without conveyance improvements was not a viable alternative to reducing flood risk in the project area.

MWRD also considered implementing bioswales and rain gardens throughout the City to provide increased flood storage. However, these green infrastructure measures would not adequately address Harvey's flooding challenges because they are smaller and shallower in depth than traditional surface detention ponds, and would therefore provide less flood storage for large rain events as compared to a detention basin. Further, green infrastructure measures would not address sewer overflows from combined sewers.

MWRD considered installing backflow valves to help prevent combined sewers that are overwhelmed by storm events from backing up into basements. However, backflows valves do not address overland flooding issues or provide increased flood storage. Additionally, property owners would be responsible for maintaining these valves, increasing the financial and time burden on residents.

MWRD evaluated alternative locations for the detention basin that would not require residential displacement, primarily City-owned and vacant parcels such as the Dixie Square Mall or Lowell-Longfellow School site. Their evaluation found that the basin needs to be located in the general area of Myrtle Avenue between 153rd and 154th streets to allow flow by gravity into the Illinois Department of Transportation's Wood Street storm sewer system. Moving the detention basin to areas that would not require displacement, such as the Dixie Square Mall or Lowell-Longfellow School site, would not relieve flooding in the project area. Also, because of utility conflicts and existing topography of the area, the Dixie Square Mall and Lowell-Longfellow School site would not be

suitable locations to address flooding in the project area. Therefore, MWRD did not find any alternative locations within the project area that would achieve the same flood control benefits as the Proposed Action and that would not require some displacement.

☐ **YES** ☒ **NO** Is the No Action Alternative the most practicable alternative?

REMARKS: The No Action Alternative is not considered a practicable alternative to this project. Under the No Action alternative, MWRD would not receive FEMA funds for comprehensive hazard mitigation or flood risk management. Under the No Action alternative, a detention basin and stormwater improvements would not be implemented within the City of Harvey. Stormwater runoff would continue to be conveyed through combined sewer systems, limiting flood storage capacity, and risking combined sewer overflows and sewer backups into basements. Structures and infrastructure within and surrounding the project area would remain at risk of inundation and damage from flooding. Additionally, flood risk in the project area would worsen because of the effects of climate change.

IF ANY ANSWER IS YES, THEN FEMA SHALL TAKE THAT ACTION AND THE REVIEW IS CONCLUDED.

STEP 4: Identify the potential direct and indirect impacts associated with the occupancy or modification of floodplains and the potential direct and indirect support of floodplain development that could result from the Proposed Action. 44 C.F.R. Sec. 9.10.

☐ **YES** ☒ **NO** Is the Proposed Action based on incomplete information?

☒ **YES** ☐ **NO** Is the Proposed Action in compliance with the NFIP?

☐ **YES** ☒ **NO** Does the Proposed Action increase the risk of flood loss?

☐ **YES** ☒ **NO** Will the Proposed Action result in an increased base discharge or increase the flood hazard potential to other properties or structures?

☒ **YES** ☐ **NO** Does the Proposed Action minimize the impact of floods on human health, safety and welfare?

☐ **YES** ☒ **NO** Will the Proposed Action induce future growth and development, which will potentially adversely affect the floodplain?

☒ **YES** ☐ **NO** Does the Proposed Action involve dredging and/or filling of a floodplain?

☒ **YES** ☐ **NO** Will the Proposed Action result in the discharge of pollutants into the floodplain?

☒ **YES** ☐ **NO** Does the Proposed Action avoid long- and short-term adverse impacts associated with the occupancy and modification of floodplains?

☐ **YES** ☒ **NO** Will the Proposed Action result in any indirect impacts that will affect the natural values and functions of floodplains or wetlands?

☐ **YES** ☒ **NO** Will the Proposed Action forego an opportunity to restore the natural and beneficial values served by floodplains?

☒ **YES** ☐ **NO** Does the Proposed Action restore and/or preserve the natural and beneficial values served by floodplains?

☒ **YES** ☐ **NO** Will the Proposed Action result in an increase to the useful life of a structure or facility?

REMARKS: As discussed in Step 1, the northeast portion of the project area is within the 100-year floodplain (Zone AH). The Proposed Action would result in minor short-term adverse impacts on the 100-year floodplain because of construction in the floodplain. Construction activities could cause an accidental release of hazardous waste (e.g., fuels) from equipment use and ground-disturbing activities could cause erosion. Further, there is a potential for unknown contamination to be present and exposed during excavation and grading activities.

The Proposed Action could result in minor long-term adverse impacts on floodplains because of disturbance and excavation of the floodplain that would alter the path of water during high water events. Additionally, trees, vegetation, concrete, and other materials would be removed from the site during grading activities, which could result in exposed soils that could erode within the floodplain.

However, the Proposed Action would also result in moderate long-term benefits on floodplains. By increasing floodwater storage capacity by 23-acre-feet with the addition of the detention basin, adding approximately 4,850 feet of new storm sewers along 153rd Street and Vine Avenue, and improving approximately 5,000 feet of existing storm sewers, the Proposed Action would reduce flood risk in the project area and vicinity. According to the hydraulic modeling conducted for the Proposed Action, implementation of the Proposed Action would reduce flood risk in the immediate project area and remove 107 homes from the 25-year floodplain and 108 homes from the 100-year floodplain. Under the 100-year flood event, the Proposed Action would reduce the depth and duration of flooding as well as the frequency of sewer backups for 690 structures in the project area and vicinity.[2] Both reductions would be beneficial towards human health and property.

[2] HRGreen, Inc. 2022. Proposed Condition Damaged Structures – 25-Year and Proposed Condition Damaged Structures – 100-year.

Therefore, the Proposed Action would reduce the risk of loss of life and property damage from flooding.

STEP 5: Minimize the potential adverse impacts to or within floodplains identified under Step 4; restore and preserve the natural and beneficial values served by floodplains.

☒ **YES** ☐ **NO** For sites in the 100-Year floodplain, were flood hazard reduction techniques applied to the Proposed Action to minimize the flood impacts?

☒ **YES** ☐ **NO** Were avoidance and minimization measures applied to the Proposed Action to minimize the short and long-term impacts on the 100-Year floodplain?

☒ **YES** ☐ **NO** Were measures implemented to restore and preserve the natural and beneficial values of the floodplain?

REMARKS: MWRD would acquire all necessary permits and comply with permit requirements. Because the Proposed Action would involve more than 1 acre of ground disturbance, a state Permit for Stormwater Discharges from Construction Site Activities (General NPDES Permit No. ILR10) (i.e., General Construction Stormwater Permit) would be required. This permit would require development of a Stormwater Pollution Prevention Plan (SWPPP) and implementation during construction of measures to reduce pollutants in stormwater discharges erosion and sedimentation from construction activities.

Excavated materials would be hauled off-site to a licensed location and would not be stored or disposed of in the floodplain. MWRD would conduct any activities that would occur within the floodplain in accordance with Cook County's Floodplain Management Regulations and the MWRD Watershed Management Ordinance, which requires that new development cannot increase flood elevations or velocities. MWRD would coordinate with the local floodplain administrator and IDNR about any necessary permits to conduct activities within the floodplain.

The Proposed Action would result in moderate long-term benefits on floodplains and wetlands. By increasing floodwater storage capacity by 23 acre-feet with the addition of the detention basin, adding approximately 4,850 feet of new storm sewers, and improving approximately 5,000 feet of existing storm sewers, the Proposed Action would reduce flood risk in the project area and vicinity. Further, the detention basin would be planted with wetland plants that would provide increased stormwater attenuation and natural pollutant removal, therefore supporting the natural values and functions of floodplains.

STEP 6: Reevaluate the Proposed Action to determine first, if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others, and its potential to disrupt floodplain values and

second, if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5. FEMA shall not act in a floodplain unless it is the only practicable location.

☒ **YES** ☐ **NO** The action is still practicable at a floodplain site considering the exposure to flood risk and ensuing disruption of natural values.

☒ **YES** ☐ **NO** The floodplain site is the only practicable alternative.

☒ **YES** ☐ **NO** There is no potential for limiting the action to increase the practicability of previously rejected sites outside the floodplain and alternative actions.

☒ **YES** ☐ **NO** Minimization of harm to or within the floodplain can be achieved using all practicable means.

☒ **YES** ☐ **NO** The action in a floodplain clearly outweighs the requirement of E.O. 11988 and EO 11990.

REMARKS: There are no practicable alternatives to the Proposed Action that are located outside of the floodplain or wetland.

STEP 7: Prepare and provide the public with a finding and public explanation of any final decision that the floodplain is the only practicable alternative.

☐ Per allowances noted at 44 CFR Part 9.12(d)6, notice provided under Step 2 is understood to meet the requirements of both Steps 2 and 7.

☐ Notice was provided as part of a disaster cumulative notice.
Publication: Click or tap here to enter text.
Date: Click or tap here to enter text.

☒ Project-specific notice provided.
Publication: *Completed as part of the notice of availability for the Draft Environmental Assessment for the Proposed Action.*
Date: See above.

AFTER PROVIDING THE FINAL NOTICE, FEMA SHALL, WITHOUT GOOD CAUSE SHOWN, WAIT AT LEAST 15 DAYS BEFORE CARRYING OUT THE PROPOSED ACTION.

STEP 8: Review the implementation and post-implementation phases of the Proposed Action to ensure that the requirements stated in Section 9.11 are fully implemented. Oversight responsibility shall be integrated into existing processes (44 CFR §9.11).

☒ **YES** ☐ **NO** Was grant conditioned on review of implementation and post-implementation phases to ensure compliance with EO 11988 and EO 11990?

REMARKS: The Proposed Action is in compliance with the provisions outline in Section 9.11.

FAILURE TO COMPLY WITH CONDITIONS ENUMERATED IN THE RECORD OF ENVIRONMENTAL CONSIDERATION MAY JEOPARDIZE FEDERAL FUNDING.

Appendix B. Construction Emission Checklist and Calculations

U.S. Environmental Protection Agency
Construction Emission Control Checklist

Consider measure that apply to the proposed project from the following list.

Mobile and Stationary Source Diesel Controls

Purchase or solicit bids that require the use of vehicles that are equipped with zero-emission technologies or the most advanced emission control systems available. Commit to the best available emissions control technologies for project equipment in order to meet the following standards.

- On-Highway Vehicles: On-highway vehicles should meet, or exceed, the EPA exhaust emissions standards for model year 2010 and newer heavy-duty, on-highway compression-ignition engines (e.g., long-haul trucks, refuse haulers, shuttle buses, etc.).[6]
- Non-road Vehicles and Equipment: Non-road vehicles and equipment should meet, or exceed, the EPA Tier 4 exhaust emissions standards for heavy-duty, non-road compression-ignition engines (e.g., construction equipment, non-road trucks, etc.).[7]
- Locomotives: Locomotives servicing infrastructure sites should meet, or exceed, the U.S. EPA Tier 4 exhaust emissions standards for line-haul and switch locomotive engines where possible.[8]
- Marine Vessels: Marine vessels hauling materials for infrastructure projects should meet, or exceed, the latest U.S. EPA exhaust emissions standards for marine compression-ignition engines (e.g., Tier 4 for Category 1 & 2 vessels, and Tier 3 for Category 3 vessels).[9]
- Low Emission Equipment Exemptions: The equipment specifications outlined above should be met unless: 1) a piece of specialized equipment is not available for purchase or lease within the United States; or 2) the relevant project contractor has been awarded funds to retrofit existing equipment, or purchase/lease new equipment, but the funds are not yet available.

Consider requiring the following best practices through the construction contracting or oversight process:

- Establish and enforce a clear anti-idling policy for the construction site.
- Use onsite renewable electricity generation and/or grid-based electricity rather than diesel-powered generators or other equipment.
- Use electric starting aids such as block heaters with older vehicles to warm the engine.
- Regularly maintain diesel engines to keep exhaust emissions low. Follow the manufacturer's recommended maintenance schedule and procedures. Smoke color can signal the need for maintenance (e.g., blue/black smoke indicates that an engine requires servicing or tuning).
- Retrofit engines with an exhaust filtration device to capture diesel particulate matter before it enters the construction site.

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[6] http://www.epa.gov/otaq/standards/heavy-duty/hdci-exhaust.htm
[7] http://www.epa.gov/otaq/standards/nonroad/nonroad.htm
[8] http://www.epa.gov/otaq/standards/nonroad/locomotives.htm
[9] http://www.epa.gov/otaq/standards/nonroad/marineci.htm

- Repower older vehicles and/or equipment with diesel- or alternatively fueled engines certified to meet newer, more stringent emissions standards (e.g., plug-in hybrid-electric vehicles, battery-electric vehicles, fuel cell electric vehicles, advanced technology locomotives, etc.).

Fugitive Dust Source Controls

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative, where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Occupational Health

- Reduce exposure through work practices and training, such as turning off engines when vehicles are stopped for more than a few minutes, training diesel-equipment operators to perform routine inspection, and maintaining filtration devices.
- Position the exhaust pipe so that diesel fumes are directed away from the operator and nearby workers, reducing the fume concentration to which personnel are exposed.
- Use enclosed, climate-controlled cabs pressurized and equipped with high-efficiency particulate air (HEPA) filters to reduce the operators' exposure to diesel fumes. Pressurization ensures that air moves from inside to outside. HEPA filters ensure that any incoming air is filtered first.

Harvey, Illinois

Construction GHG Emissions Inventory

Assumptions

Construction Start Month	July 2024
Project Duration (months)[1]	36
Project Duration (days)	1095
Actual Number of Work Days	782
Hours in a Work Day	8
Project Duration (Work Hours)	6,257
Excavation Activity Volume (cubic yards)[2]	64,877
Volume of Hauling Truck[3] (cubic yards)	16
Number of Hauling Truck Round Trips/Project	4,055
Hauling Truck Trip Length (miles/one-way trip)[4]	2
Hauling Truck Trip Length (miles/round trip)	4
Concrete Volume Quantity (cubic yards)[5]	712
Volume of Vendor Concrete Truck (cubic yards)	8
Number of Vendor Concrete Truck Round Trips/Project	89
Additional Vendor Truck Round Trips/Project	245
Total Vendor Truck Round Trips/Project	334
Vendor Truck Trip Length (miles/one-way trip)[6]	20
Vendor Truck Trip Length (miles/round trip)	40
Number of Worker Round Trips/Work Day	1
Worker Trip Length (miles/one-way trip)[6]	20
Worker Trip Length (miles/round-way trip)	40

On-road Equipment

Construction Equipment	MOVES4 Source Use Type	Fuel Type	Quantity[7]	Duration (Days)	2025 Duration (Months)[1,8]	2026 Duration (Months)[1,8]	Atmospheric CO2 Emission Factor (grams/VMT)[9]	Methane (CH4) Emission Factor (grams/VMT)[9]	N2O Emission Factor (grams/VMT[9]	2025 Project Total CO2 Emissions (metric tons)	2025 Project Total CH4 Emissions (metric tons)	2025 Project Total N2O Emissions (metric tons)	2025 Project Total CO2e[11] Emissions (metric tons)
Worker Pickup Trucks	Passenger Truck	Diesel	66	782	NA	NA	223	0.015	0.007	231	<1	<1	233
Vendor Concrete Truck	Single Unit Short-haul Truck	Diesel	---	NA	NA	NA	499	0.126	0.056	3	<1	<1	3
Heavy Duty Dump Truck	Single Unit Short-haul Truck	Diesel	---	NA	NA	NA	499	0.126	0.056	4	<1	<1	4
									On-Road Totals	**238**	**<1**	**<1**	**241**

General Off-road Equipment

Construction Equipment	MOVES4 Equipment	Fuel Type	Quantity[7]	Activity (Hours per unit)	2025 Duration (Months)[1,8]	2026 Duration (Months)[1,8]	Atmospheric CO2 Emission Factor (g/hr)[9]	Methane (CH4) Emission Factor (g/hr)[9]	N2O[10] Emission Factor (g/hr)[9]	2025 Project Total CO2 Emissions (metric tons)	2025 Project Total CH4 Emissions (metric tons)	2025 Project Total N2O Emissions (metric tons)	2025 Project Total CO2e[11] Emissions (metric tons)
Bidding and award- GO/NO GO Milestone													
Mobilization													
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	4	348	2	0	13,047	0.399	0.371	18	<1	<1	18
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	3	348	2	0	82,755	0.323	0.301	86	<1	<1	86
Site preparation and erosion control													
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	5	348	2	0	82,755	0.323	0.301	144	<1	<1	144
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	348	2	0	16,611	0.275	0.256	6	<1	<1	6
Excavators	Excavators	Diesel	3	348	2	0	54,724	0.175	0.163	57	<1	<1	57
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	4	348	2	0	13,047	0.399	0.371	18	<1	<1	18
Construction detention basin													
Graders	Graders	Diesel	1	695	4	0	64,842	0.165	0.154	45	<1	<1	45
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	695	4	0	82,755	0.323	0.301	58	<1	<1	58
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	7	695	4	0	13,047	0.399	0.371	63	<1	<1	64
Excavators	Excavators	Diesel	1	695	4	0	54,724	0.175	0.163	38	<1	<1	38
Cranes	Cranes	Diesel	1	695	4	0	52,951	0.286	0.266	37	<1	<1	37
Forklifts	Rough Terrain Forklifts	Diesel	3	695	4	0	32,530	0.248	0.231	68	<1	<1	68
Generator Sets	Generator Sets	Diesel	1	695	4	0	12,118	0.331	0.308	8	<1	<1	8
Welders	Welders	Diesel	1	695	4	0	6,421	0.258	0.240	4	<1	<1	5
Pavers	Pavers	Diesel	1	695	4	0	40,396	0.244	0.227	28	<1	<1	28
Rollers	Rollers	Diesel	2	695	4	0	30,460	0.267	0.248	42	<1	<1	42
Paving Equipment	Paving Equipment	Diesel	2	695	4	0	22,815	0.287	0.267	32	<1	<1	32
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	695	4	0	7,509	0.249	0.232	10	<1	<1	11
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	695	4	0	16,611	0.275	0.256	12	<1	<1	12
Crawler tractor (bulldozer)	Crawler Tractor/Dozers	Diesel	2	695	4	0	82,755	0.323	0.301	115	<1	<1	115
Concrete Vibrator	Crushing/Proc. Equipment	Diesel	1	695	4	0	35,775	0.303	0.282	25	<1	<1	25
Hydraulic Hammer	Crushing/Proc. Equipment	Diesel	1	695	4	0	35,775	0.303	0.282	25	<1	<1	25
Hydromulcher	Crushing/Proc. Equipment	Diesel	1	695	4	0	35,775	0.303	0.282	25	<1	<1	25
Impact Hammer	Crushing/Proc. Equipment	Diesel	1	695	4	0	35,775	0.303	0.282	25	<1	<1	25
Vibratory Hammer	Crushing/Proc. Equipment	Diesel	1	695	4	0	35,775	0.303	0.282	25	<1	<1	25
Air Compressor	Air Compressors	Diesel	1	695	4	0	20,454	0.262	0.244	14	<1	<1	14
Other	Other Construction Equipment	Diesel	1	695	4	0	104,233	0.933	0.868	72	<1	<1	73
Construction green infrastructure													
Graders	Graders	Diesel	1	348	2	0	64,842	0.165	0.154	23	<1	<1	23
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	348	2	0	82,755	0.323	0.301	29	<1	<1	29
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	6	348	2	0	13,047	0.399	0.371	27	<1	<1	27
Excavators	Excavators	Diesel	1	348	2	0	54,724	0.175	0.163	19	<1	<1	19
Cranes	Cranes	Diesel	1	348	2	0	52,951	0.286	0.266	18	<1	<1	18
Forklifts	Rough Terrain Forklifts	Diesel	3	348	2	0	32,530	0.248	0.231	34	<1	<1	34
Generator Sets	Generator Sets	Diesel	1	348	2	0	12,118	0.331	0.308	4	<1	<1	4
Welders	Welders	Diesel	1	348	2	0	6,421	0.258	0.240	2	<1	<1	2

Harvey, Illinois
Construction GHG Emissions Inventory

Assumptions

Construction Start Month	July 2024
Project Duration (months)[1]	36
Project Duration (days)	1095
Actual Number of Work Days	782
Hours in a Work Day	8
Project Duration (Work Hours)	6,257
Excavation Activity Volume (cubic yards)[2]	64,877
Volume of Hauling Truck[3] (cubic yards)	16
Number of Hauling Truck Round Trips/Project	4,055
Hauling Truck Trip Length (miles/one-way trip)[4]	2
Hauling Truck Trip Length (miles/round trip)	4
Concrete Volume Quantity (cubic yards)[5]	712
Volume of Vendor Concrete Truck (cubic yards)	8
Number of Vendor Concrete Truck Round Trips/Project	89
Additional Vendor Truck Round Trips/Project	245
Total Vendor Truck Round Trips/Project	334
Vendor Truck Trip Length (miles/one-way trip)[6]	20
Vendor Truck Trip Length (miles/round trip)	40
Number of Worker Round Trips/Work Day	1
Worker Trip Length (miles/one-way trip)[6]	20
Worker Trip Length (miles/round-way trip)	40

On-road Equipment

Construction Equipment	MOVES4 Source Use Type	Fuel Type	Quantity[7]								
Worker Pickup Trucks	Passenger Truck	Diesel	66	231	<1	<1	233	461	<1	<1	466
Vendor Concrete Truck	Single Unit Short-haul Truck	Diesel	---	3	<1	<1	3	7	<1	<1	7
Heavy Duty Dump Truck	Single Unit Short-haul Truck	Diesel	---	4	<1	<1	4	8	<1	<1	8
				238	**<1**	**<1**	**241**	**476**	**<1**	**<1**	**482**

General Off-road Equipment

Construction Equipment	MOVES4 Equipment	Fuel Type	Quantity[7]								
Bidding and award- GO/NO GO Milestone											
Mobilization											
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	4	---	---	---	---	18	<1	<1	18
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	3	---	---	---	---	86	<1	<1	86
Site preparation and erosion control											
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	5	---	---	---	---	144	<1	<1	144
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	---	---	---	---	6	<1	<1	6
Excavators	Excavators	Diesel	3	---	---	---	---	57	<1	<1	57
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	4	---	---	---	---	18	<1	<1	18
Construction detention basin											
Graders	Graders	Diesel	1	---	---	---	---	45	<1	<1	45
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	---	---	---	---	58	<1	<1	58
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	7	---	---	---	---	63	<1	<1	64
Excavators	Excavators	Diesel	1	---	---	---	---	38	<1	<1	38
Cranes	Cranes	Diesel	1	---	---	---	---	37	<1	<1	37
Forklifts	Rough Terrain Forklifts	Diesel	3	---	---	---	---	68	<1	<1	68
Generator Sets	Generator Sets	Diesel	1	---	---	---	---	8	<1	<1	8
Welders	Welders	Diesel	1	---	---	---	---	4	<1	<1	5
Pavers	Pavers	Diesel	1	---	---	---	---	28	<1	<1	28
Rollers	Rollers	Diesel	2	---	---	---	---	42	<1	<1	42
Paving Equipment	Paving Equipment	Diesel	2	---	---	---	---	32	<1	<1	32
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	---	---	---	---	10	<1	<1	11
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	---	---	---	---	12	<1	<1	12
Crawler tractor (bulldozer)	Crawler Tractor/Dozers	Diesel	2	---	---	---	---	115	<1	<1	115
Concrete Vibrator	Crushing/Proc. Equipment	Diesel	1	---	---	---	---	25	<1	<1	25
Hydraulic Hammer	Crushing/Proc. Equipment	Diesel	1	---	---	---	---	25	<1	<1	25
Hydromulcher	Crushing/Proc. Equipment	Diesel	1	---	---	---	---	25	<1	<1	25
Impact Hammer	Crushing/Proc. Equipment	Diesel	1	---	---	---	---	25	<1	<1	25
Vibratory Hammer	Crushing/Proc. Equipment	Diesel	1	---	---	---	---	25	<1	<1	25
Air Compressor	Air Compressors	Diesel	1	---	---	---	---	14	<1	<1	14
Other	Other Construction Equipment	Diesel	1	---	---	---	---	72	<1	<1	73
Construction green infrastructure											
Graders	Graders	Diesel	1	---	---	---	---	23	<1	<1	23
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	---	---	---	---	29	<1	<1	29
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	6	---	---	---	---	27	<1	<1	27
Excavators	Excavators	Diesel	1	---	---	---	---	19	<1	<1	19
Cranes	Cranes	Diesel	1	---	---	---	---	18	<1	<1	18
Forklifts	Rough Terrain Forklifts	Diesel	3	---	---	---	---	34	<1	<1	34
Generator Sets	Generator Sets	Diesel	1	---	---	---	---	4	<1	<1	4
Welders	Welders	Diesel	1	---	---	---	---	2	<1	<1	2

General Off-road Equipment

Construction Equipment	MOVES4 Equipment	Fuel Type	Quantity[7]	Activity (Hours per unit)	2025 Duration (Months)[1,8]	2026 Duration (Months)[1,8]	Atmospheric CO2 Emission Factor (g/hr)[9]	Methane (CH4) Emission Factor (g/hr)[9]	N2O[10] Emission Factor (g/hr)[9]	2025 Project Total CO2 Emissions (metric tons)	2025 Project Total CH4 Emissions (metric tons)	2025 Project Total N2O Emissions (metric tons)	2025 Project Total CO2e[11] Emissions (metric tons)
Restoration- detention basin and green infrastructure													
Graders	Graders	Diesel	1	348	1	1	64,842	0.165	0.154	11	<1	<1	11
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	348	1	1	82,755	0.323	0.301	14	<1	<1	14
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	348	1	1	13,047	0.399	0.371	7	<1	<1	7
Excavators	Excavators	Diesel	1	348	1	1	54,724	0.175	0.163	10	<1	<1	10
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	348	1	1	16,611	0.275	0.256	3	<1	<1	3
Crawler tractor (bulldozer)	Crawler Tractor/Dozers	Diesel	2	348	1	1	82,755	0.323	0.301	29	<1	<1	29
Concrete Vibrator	Crushing/Proc. Equipment	Diesel	1	348	1	1	35,775	0.303	0.282	6	<1	<1	6
Hydraulic Hammer	Crushing/Proc. Equipment	Diesel	1	348	1	1	35,775	0.303	0.282	6	<1	<1	6
Hydromulcher	Crushing/Proc. Equipment	Diesel	1	348	1	1	35,775	0.303	0.282	6	<1	<1	6
Impact Hammer	Crushing/Proc. Equipment	Diesel	1	348	1	1	35,775	0.303	0.282	6	<1	<1	6
Vibratory Hammer	Crushing/Proc. Equipment	Diesel	1	348	1	1	35,775	0.303	0.282	6	<1	<1	6
Air Compressor	Air Compressors	Diesel	1	348	1	1	20,454	0.262	0.244	4	<1	<1	4
Other	Other Construction Equipment	Diesel	1	348	1	1	104,233	0.933	0.868	18	<1	<1	18
Restoration disturbed areas													
Graders	Graders	Diesel	1	348	1	1	64,842	0.165	0.154	11	<1	<1	11
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	348	1	1	82,755	0.323	0.301	14	<1	<1	14
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	348	1	1	13,047	0.399	0.371	7	<1	<1	7
Excavators	Excavators	Diesel	1	348	1	1	54,724	0.175	0.163	10	<1	<1	10
Construction of storm sewers													
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	2	869	0	5	82,755	0.323	0.301	---	---	---	---
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	869	0	5	16,611	0.275	0.256	---	---	---	---
Excavators	Excavators	Diesel	3	869	0	5	54,724	0.175	0.163	---	---	---	---
Pavers	Pavers	Diesel	1	869	0	5	40,396	0.244	0.227	---	---	---	---
Rollers	Rollers	Diesel	2	869	0	5	30,460	0.267	0.248	---	---	---	---
Paving Equipment	Paving Equipment	Diesel	2	869	0	5	22,815	0.287	0.267	---	---	---	---
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	869	0	5	13,047	0.399	0.371	---	---	---	---
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	869	0	5	7,509	0.249	0.232	---	---	---	---
Construction- restrictor structure/connections													
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	2	348	0	2	82,755	0.323	0.301	---	---	---	---
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	348	0	2	16,611	0.275	0.256	---	---	---	---
Excavators	Excavators	Diesel	3	348	0	2	54,724	0.175	0.163	---	---	---	---
Pavers	Pavers	Diesel	1	348	0	2	40,396	0.244	0.227	---	---	---	---
Rollers	Rollers	Diesel	2	348	0	2	30,460	0.267	0.248	---	---	---	---
Paving Equipment	Paving Equipment	Diesel	2	348	0	2	22,815	0.287	0.267	---	---	---	---
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	348	0	2	13,047	0.399	0.371	---	---	---	---
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	348	0	2	7,509	0.249	0.232	---	---	---	---
Restoration of parkway													
Graders	Graders	Diesel	1	348	0	2	64,842	0.165	0.154	---	---	---	---
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	348	0	2	82,755	0.323	0.301	---	---	---	---
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	348	0	2	13,047	0.399	0.371	---	---	---	---
Excavators	Excavators	Diesel	1	348	0	2	54,724	0.175	0.163	---	---	---	---
Roadway improvements													
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	2	348	0	2	82,755	0.323	0.301	---	---	---	---
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	348	0	2	16,611	0.275	0.256	---	---	---	---
Excavators	Excavators	Diesel	3	348	0	2	54,724	0.175	0.163	---	---	---	---
Pavers	Pavers	Diesel	1	348	0	2	40,396	0.244	0.227	---	---	---	---
Rollers	Rollers	Diesel	2	348	0	2	30,460	0.267	0.248	---	---	---	---
Paving Equipment	Paving Equipment	Diesel	2	348	0	2	22,815	0.287	0.267	---	---	---	---
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	348	0	2	13,047	0.399	0.371	---	---	---	---
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	348	0	2	7,509	0.249	0.232	---	---	---	---
Punchlist and final completion													
Grant management and closeout													
Off-Road Totals										**1,426**	**<1**	**<1**	**1,429**

Global Warming Potentials to Convert to CO2e

Greenhouse Gas	CO2	CH4	N2O
100-Year Global Warming Potential[12]	1	28	265

Source: IPCC Fifth Assessment Report Global Warming Potentials (Box 3.2, Table 1)

https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

Category	2025 CO2	2025 CH4	2025 N2O	2025 CO2e
Project Emissions	**1,664**	**<1**	**<1**	**1,670**
Monetized Value ($Millions)	**$0.40**	**<$0.01**	**<$0.01**	**N/A**

Project Social Cost Total[13] In 2023 US Dollars (2.0% Discount Rate) ($Millions)

Monetized Value ($)	**$401,291**	**$69**	**$1,383**	**N/A**

Project Social Cost Total[13] In 2023 US Dollars (2.0% Discount Rate) **$716,992**

Notes:

1. Project duration was obtained from the Subapplication File: FEMAGO - Subapplication.pdf
2. Excavation quantity was obtained from the Subapplication File: FEMAGO - Subapplication.pdf
3. 16 cubic yards is the industry standard for hauling truck capacity.

4. Envirite was assumed to be the primary disposal landfill. Envirite is a Subtitle C Landfill and the project may encounter hazardous materials.
5. 3,000 cubic yards of concrete were assumed based on the unit price of building concrete from the Engineer's Estimate.pdf.

6. 20 miles is the industry standard for trip distance. This is conservative considering the location of the project is within an urbanized area.
7. Quantities of equipment were based on similar projects pursued under the FEMA BRIC program and best engineering judgment.
8. The annual duration of each construction phase has been provided to reflect the corresponding emissions factor, where applicable. No detailed schedule was provided for Worker Pickup Trucks or Heavy Duty Dump or Concrete Trucks and the duration was assumed to be evenly distributed throughout the project duration.
9. The 2024 emission factors were used to conservatively estimate the project GHG emissions, as well as to represent the earliest year construction could commence.
10. MOVES does not calculate N2O Factors. Estimated N2O emission values are based on EPA 2024 GHG Emission Factors Hub, Table 5 Mobile Construction CH4 and N2O for Non-Road Vehicles.
11. CO2e is the mass of CO2 emissions with the same global warming potential as one unit of mass of another greenhouse gas.

12. The EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks complies with international GHG reporting standards under the United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC guidelines now require the use of the GWP values from the IPCC's Fifth Assessment Report (AR5), published in 2013. Available at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials
13. Social Cost of Greenhouse Gases was calculated using the EPA's online calculator tool. Available at: https://www.epa.gov/environmental-economics/scghg

General Off-road Equipment

Construction Equipment	MOVES4 Equipment	Fuel Type	Quantity[7]	2026 Project Total CO2 Emissions (metric tons)	2026 Project Total CH4 Emissions (metric tons)	2026 Project Total N2O Emissions (metric tons)	2026 Project Total CO2e[11] Emissions (metric tons)	Total CO2 Emissions (metric tons)	Total CH4 Emissions (metric tons)	Total N2O Emissions (metric tons)	Total CO2e Emissions (metric tons)
Restoration- detention basin and green infrastructure											
Graders	Graders	Diesel	1	11	<1	<1	11	23	<1	<1	23
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	14	<1	<1	14	29	<1	<1	29
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	7	<1	<1	7	14	<1	<1	14
Excavators	Excavators	Diesel	1	10	<1	<1	10	19	<1	<1	19
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	3	<1	<1	3	6	<1	<1	6
Crawler tractor (bulldozer)	Crawler Tractor/Dozers	Diesel	2	29	<1	<1	29	58	<1	<1	58
Concrete Vibrator	Crushing/Proc. Equipment	Diesel	1	6	<1	<1	6	12	<1	<1	12
Hydraulic Hammer	Crushing/Proc. Equipment	Diesel	1	6	<1	<1	6	12	<1	<1	12
Hydromulcher	Crushing/Proc. Equipment	Diesel	1	6	<1	<1	6	12	<1	<1	12
Impact Hammer	Crushing/Proc. Equipment	Diesel	1	6	<1	<1	6	12	<1	<1	12
Vibratory Hammer	Crushing/Proc. Equipment	Diesel	1	6	<1	<1	6	12	<1	<1	12
Air Compressor	Air Compressors	Diesel	1	4	<1	<1	4	7	<1	<1	7
Other	Other Construction Equipment	Diesel	1	18	<1	<1	18	36	<1	<1	36
Restoration disturbed areas											
Graders	Graders	Diesel	1	11	<1	<1	11	23	<1	<1	23
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	14	<1	<1	14	29	<1	<1	29
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	7	<1	<1	7	14	<1	<1	14
Excavators	Excavators	Diesel	1	10	<1	<1	10	19	<1	<1	19
Construction of storm sewers											
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	2	144	<1	<1	144	144	<1	<1	144
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	14	<1	<1	15	14	<1	<1	15
Excavators	Excavators	Diesel	3	143	<1	<1	143	143	<1	<1	143
Pavers	Pavers	Diesel	1	35	<1	<1	35	35	<1	<1	35
Rollers	Rollers	Diesel	2	53	<1	<1	53	53	<1	<1	53
Paving Equipment	Paving Equipment	Diesel	2	40	<1	<1	40	40	<1	<1	40
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	11	<1	<1	11	11	<1	<1	11
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	13	<1	<1	13	13	<1	<1	13
Construction- restrictor structure/connections											
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	2	58	<1	<1	58	58	<1	<1	58
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	6	<1	<1	6	6	<1	<1	6
Excavators	Excavators	Diesel	3	57	<1	<1	57	57	<1	<1	57
Pavers	Pavers	Diesel	1	14	<1	<1	14	14	<1	<1	14
Rollers	Rollers	Diesel	2	21	<1	<1	21	21	<1	<1	21
Paving Equipment	Paving Equipment	Diesel	2	16	<1	<1	16	16	<1	<1	16
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	5	<1	<1	5	5	<1	<1	5
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	5	<1	<1	5	5	<1	<1	5
Restoration of parkway											
Graders	Graders	Diesel	1	23	<1	<1	23	23	<1	<1	23
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	1	29	<1	<1	29	29	<1	<1	29
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	3	14	<1	<1	14	14	<1	<1	14
Excavators	Excavators	Diesel	1	19	<1	<1	19	19	<1	<1	19
Roadway improvements											
Rubber Tired Dozers	Crawler Tractor/Dozers	Diesel	2	58	<1	<1	58	58	<1	<1	58
Concrete/Industrial Saws	Concrete/Industrial Saws	Diesel	1	6	<1	<1	6	6	<1	<1	6
Excavators	Excavators	Diesel	3	57	<1	<1	57	57	<1	<1	57
Pavers	Pavers	Diesel	1	14	<1	<1	14	14	<1	<1	14
Rollers	Rollers	Diesel	2	21	<1	<1	21	21	<1	<1	21
Paving Equipment	Paving Equipment	Diesel	2	16	<1	<1	16	16	<1	<1	16
Tractors/Loaders/Backhoes	Tractors/Loaders/Backhoes	Diesel	1	5	<1	<1	5	5	<1	<1	5
Cement and Mortar Mixers	Cement & Mortar Mixers	Diesel	2	5	<1	<1	5	5	<1	<1	5
Punchlist and final completion											
Grant management and closeout											
				1,068	**<1**	**<1**	**1,070**	**2,494**	**<1**	**<1**	**2,499**

Global Warming Potentials to Convert to CO2e

Greenhouse Gas	CO2	CH4	N2O	2026 CO2	2026 CH4	2026 N2O	2026 CO2e	Total CO2	Total CH4	Total N2O	Total CO2e
100-Year Global Warming Potential[12]	1	28	265	**1,306**	**<1**	**<1**	**1,311**	**2,970**	**<1**	**<1**	**2,981**
Source: IPCC Fifth Assessment Report Global Warming Potentials (Box 3.2, Table 1)				**$0.31**	**<$0.01**	**<$0.01**	**N/A**	**$0.71**	**<$0.01**	**<$0.01**	**N/A**

https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

$313,113 **$59** **$1,076** **N/A** **$714,404** **$128** **$2,459** **N/A**

Notes:

1. Project duration was obtained from the Subapplication File: FEMAGO - Subapplication.pdf
2. Excavation quantity was obtained from the Subapplication File: FEMAGO - Subapplication.pdf
3. 16 cubic yards is the industry standard for hauling truck capacity.

4. Envirite was assumed to be the primary disposal landfill. Envirite is a Subtitle C Landfill and the project may encounter hazardous materials.
5. 3,000 cubic yards of concrete were assumed based on the unit price of building concrete from the Engineer's Estimate.pdf.

6. 20 miles is the industry standard for trip distance. This is conservative considering the location of the project is within an urbanized area.
7. Quantities of equipment were based on similar projects pursued under the FEMA BRIC program and best engineering judgment.
8. The annual duration of each construction phase has been provided to reflect the corresponding emissions factor, where applicable. No detailed schedule was provided for Worker Pickup Trucks or Heavy Duty Dump or Concrete Trucks and the duration was assumed to be evenly distributed throughout the project duration.
9. The 2024 emission factors were used to conservatively estimate the project GHG emissions, as well as to represent the earliest year construction could commence.
10. MOVES does not calculate N2O Factors. Estimated N2O emission values are based on EPA 2024 GHG Emission Factors Hub, Table 5 Mobile Construction CH4 and N2O for Non-Road Vehicles.
11. CO2e is the mass of CO2 emissions with the same global warming potential as one unit of mass of another greenhouse gas.

12. The EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks complies with international GHG reporting standards under the United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC guidelines now require the use of the GWP values from the IPCC's Fifth Assessment Report (ARS), published in 2013. Available at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials
13. Social Cost of Greenhouse Gases was calculated using the EPA's online calculator tool. Available at: https://www.epa.gov/environmental-economics/scghg

Harvey, Illinois

Additional Vendor Truck Trips

ITEM NO.	PAY ITEM #	PAY ITEM	UNITS	Currency	UNIT COST	QUANTITY	Currency	COST	Associated with Additional Vendor Trips?	Factor	Units	Round Trip Count
1	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	$	30	250	$	7500				
2	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	$	37.5	250	$	9375				
3	20101100	TREE TRUNK PROTECTION	EACH	$	130	50	$	6500				
4	20101400	NITROGEN FERTILIZER NUTRIENT	POUND	$	5	220	$	1100	Yes	1.5	tons/cu yd	1
5	20101500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	$	5	220	$	1100	Yes	1.5	tons/cu yd	1
6	20101600	POTASSIUM FERTILIZER NUTRIENT	POUND	$	5	220	$	1100	Yes	1.5	tons/cu yd	1
7	20200100	EARTH EXCAVATION	CU YD	$	50.25	48,866		2455516.5				
8	20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	$	44.25	1,222	$	54073.5				
9	66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	$	55	1,222	$	67210				
10	20800150	TRENCH BACKFILL	CU YD	$	35	11,029	$	386015				
11	21101615	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	$	5	11,832	$	59160				
12	25000312	SEEDING, CLASS 4A	ACRE	$	7500	0.59	$	4425				
13	25000110	SEEDING, CLASS 1A	ACRE	$	2250	1.85	$	4162.5				
14	25100115	MULCH, METHOD 2	ACRE	$	2250	1.85	$	4162.5				
15	25100630	EROSION CONTROL BLANKET	SQ YD	$	1.75	2,861	$	5006.75				
16	28000400	PERIMETER EROSION BARRIER	FOOT	$	2.75	2,500	$	6875				
17	28000500	INLET AND PIPE PROTECTION	EACH	$	150	104	$	15600				
18	28100201	STONE RIPRAP, CLASS A1	TON	$	40	27	$	1080	Yes	1.4	tons/cu yd	3
19	28100205	STONE RIPRAP, CLASS A3	TON	$	80	15	$	1200	Yes	1.4	tons/cu yd	2
20	28100207	STONE RIPRAP, CLASS A4	TON	$	100	71	$	7100	Yes	1.4	tons/cu yd	7
21	28200200	FILTER FABRIC	SQ YD	$	5	100	$	500				
22	44000100	PAVEMENT REMOVAL	SQ YD	$	15	2,139	$	32085				
23	44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	$	6	12,840	$	77040				
24	44201723	CLASS D PATCHES, TYPE IV, 6 INCH	SQ YD	$	50	5,925	$	296250				
25	54213663	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 18"	EACH	$	1000	1	$	1000	Yes	1	Units/Trip	1
26	54213681	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 36"	EACH	$	2000	2	$	4000	Yes	1	Units/Trip	2
27	60201105	CATCH BASINS, TYPE A, 4'-DIAMETER, TYPE 11 FRAME AND GRATE	EACH	$	3500	86	$	301000	Yes	0.5	Units/Trip	172
28	60218400	MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	$	3500	16	$	56000	Yes	0.5	Units/Trip	32
29	60221100	MANHOLES, TYPE A, 5'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	$	4750	1	$	4750	Yes	1	Units/Trip	1
30	60224446	MANHOLES, TYPE A, 7'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	$	10000	9	$	90000	Yes	1	Units/Trip	9
31	60224459	MANHOLES, TYPE A, 8'-DIAMETER, TYPE 1 FRAME, CLOSED LID	EACH	$	11500	9	$	103500	Yes	1	Units/Trip	9
32	XXXXXXXX	CONTROL STRUCTURE	EACH	$	15000	1	$	15000	Yes	1	Units/Trip	1
33	60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	$	25	11,785	$	294625				
34	67100100	MOBILIZATION	L SUM		120000	1	$	120000				
35	550A2320	STORM SEWERS, RUBBER GASKET, CLASS A, TYPE 1 12"	FOOT	$	67.5	1,972	$	133110				
36	550A2540	STORM SEWERS, RUBBER GASKET, CLASS A, TYPE 2 18"	FOOT	$	75	5,212	$	390900				
37	550A2560	STORM SEWERS, RUBBER GASKET, CLASS A, TYPE 2 24"	FOOT	$	100	465	$	46500				
38	550A2600	STORM SEWERS, RUBBER GASKET, CLASS A, TYPE 2 36"	FOOT	$	130	3,276	$	425880				
39	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM		130000	1	$	130000				
40	X1200093	WATER MAIN LOWERING, 12"	FOOT	$	125	180	$	22500				
41	Z0013798	CONSTRUCTION LAYOUT	L SUM	$	30000	1	$	30000				
42	X0324878	ADJUSTING SANITARY SEWER SERVICE LINE	EACH	$	1800	72	$	129600				
43	56300300	ADJUSTING WATER SERVICE LINES	FOOT	$	95	720	$	68400				
44	44000600	SIDEWALK REMOVAL	SQ FT	$	2.5	3,500	$	8750				
45	42400200	PORTLAND CEMENT CONCRETE SIDEWALK 5 INCH	SQ FT	$	7	3,500	$	24500				
46	35101582	AGGREGATE BASE COURSE, TYPE B 2"	SQ YD	$	5	393	$	1965	Yes			3
47	42400800	DETECTABLE WARNINGS	SQ FT	$	30	560	$	16800				
						CONSTRUCTION SUBTOTAL		5922916.75				

Note: Vendor trip factors and conversions are based on engineering judgment.

Reference: Estimated_Budget_for_Harvey_Stormwater_Project (1) (1).pdf

Harvey, Illinois

Disturbance Area Estimates

Disturbance Area Estimates[1]				
Project Component	**Basin Volume (acre-ft)**	**Basin Volume (ft^2-ft)**	**Depth (feet)**	**Disturbance Volume (ft^3)**
Detention Pond	23	1,001,884	N/A	1,001,884
Project Component	**Storm Sewer Length (feet)**	**Diameter Range (inch)[2]**	**Depth (feet)**	**Disturbance Volume (ft^3)**
Between Myrtle Avenue and Center Avenue	1,900	18" to 36"	15	190,000
Between Myrtle Avenue and Wood Street	2,250	24" to 36"	15	225,000
Vine Avenue	700	12"	15	37,800
Various Side Streets	5,500	12" to 18"	15	297,000
			Total Volume (ft^3)	1,751,684
Unit Conversion:			**Total Volume (cu yd)[3]**	**64,877**
1 acre =	43,560 ft^2			

Notes:

1. Disturbance volumes were listed in the FEMAGO - Subapplication.pdf file.
2. Assumed 5 feet disturbed width for pipes over 18 inches, and 3 feet disturbed width for pipes 18 inches or less.
3. Calculated total disturbed volume is consistent with Estimated_Budget_for_Harvey_Stormwater_Project (1) (1).pdf.

Harvey, Illinois

Emission Factors for On-road Construction Equipment

Construction Equipment	MOVES4 Source Use Type	MOVES4 Regulatory Class	MOVES4 Run Year	Fuel	Atmospheric CO2 Emission Factor (grams/VMT)	Methane (CH4) Emission Factor (grams/VMT)	N2O Emission Factor (grams/VMT)	CO2 Equivalent Calculated Emission Factor (grams/VMT)
Worker Pickup Trucks	Passenger Truck	LDT	2024	Aggregated	223	0.015	0.007	226
Heavy Duty Dump or Concrete Truck	Single Unit Short-haul Truck	HHD8	2024	Aggregated	499	0.126	0.056	517

Global Warming Potentials to Convert to CO2e

Greenhouse Gas	CO2	CH4	N2O
Global Warming Potential	1	28	265

Source: IPCC Fifth Assessment Report Global Warming Potentials (Box 3.2, Table 1)

https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

Note:
The EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks complies with international GHG reporting standards under the United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC guidelines now require the use of the GWP values from the IPCC's Fifth Assessment Report (AR5), published in 2013. Available at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials

Harvey, Illinois
Emission Factors for Non-road Construction Equipment

Construction Equipment	MOVES4 Equipment	MOVES4 Run Year	Fuel	Atmospheric CO2 Emission Factor (g/hr)	Methane (CH4) Emission Factor (g/hr)	N2O Emission Factor (g/hr)	CO2 Equivalent Emission Factor (g/hr)
Cement Mixer	Cement & Mortar Mixers	2024	Nonroad Diesel Fuel	7,509	0.249	0.232	7,578
Concrete/Industrial Saws	Concrete/Industrial Saws	2024	Nonroad Diesel Fuel	16,611	0.275	0.256	16,687
Crawler Crane	Cranes	2024	Nonroad Diesel Fuel	52,951	0.286	0.266	53,030
Crawler tractor (bulldozer)	Crawler Tractor/Dozers	2024	Nonroad Diesel Fuel	82,755	0.323	0.301	82,844
Concrete Vibrator	Crushing/Proc. Equipment	2024	Nonroad Diesel Fuel	35,775	0.303	0.282	35,859
Hydraulic Hammer	Crushing/Proc. Equipment	2024	Nonroad Diesel Fuel	35,775	0.303	0.282	35,859
Hydromulcher	Crushing/Proc. Equipment	2024	Nonroad Diesel Fuel	35,775	0.303	0.282	35,859
Impact Hammer	Crushing/Proc. Equipment	2024	Nonroad Diesel Fuel	35,775	0.303	0.282	35,859
Vibratory Hammer	Crushing/Proc. Equipment	2024	Nonroad Diesel Fuel	35,775	0.303	0.282	35,859
Excavator	Excavators	2024	Nonroad Diesel Fuel	54,724	0.175	0.163	54,772
Graders	Graders	2024	Nonroad Diesel Fuel	64,842	0.165	0.154	64,887
Air Compressor	Air Compressors	2024	Nonroad Diesel Fuel	20,454	0.262	0.244	20,527
Other	Other Construction Equipment	2024	Nonroad Diesel Fuel	104,233	0.933	0.868	104,490
Welder	Welders	2024	Nonroad Diesel Fuel	6,421	0.258	0.240	6,492
Asphalt Paver	Pavers	2024	Nonroad Diesel Fuel	40,396	0.244	0.227	40,463
Roller	Rollers	2024	Nonroad Diesel Fuel	30,460	0.267	0.248	30,533
Rough Terrain Forklifts	Rough Terrain Forklifts	2024	Nonroad Diesel Fuel	32,530	0.248	0.231	32,598
Tractor/loader/backhoe or Front end loader	Tractors/Loaders/Backhoes	2024	Nonroad Diesel Fuel	13,047	0.399	0.371	13,156
Generator Sets	Generator Sets	2024	Nonroad Diesel Fuel	12,118	0.331	0.308	12,208
Paving Equipment	Paving Equipment	2024	Nonroad Diesel Fuel	22,815	0.287	0.267	22,893

Notes:

* CO2e Factors calculated using IPCC Fifth Assessment Report Global Warming Potentials (Box 3.2, Table 1)
Available: https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

** Moves does not calculate N2O emissions. A ratio between N2O factor and CH4 factor was obtained from 2024 GHG Emission Factors Hub. Table 5 Mobile Combustion CH4 and N2O for Non-Road Vehicles.

Global Warming Potentials to Convert to CO2e

Greenhouse Gas	CO2	CH4	N2O
Global Warming Potential	1	28	265

Source: IPCC Fifth Assessment Report Global Warming Potentials (Box 3.2, Table 1)
https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf

Note:
The EPA's Inventory of U.S. Greenhouse Gas Emissions and Sinks complies with international GHG reporting standards under the United Nations Framework Convention on Climate Change (UNFCCC). UNFCCC guidelines now require the use of the GWP values from the IPCC's Fifth Assessment Report (AR5), published in 2013. Available at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials

Ratio of N2O/CH4 Diesel Equipment Emission Factors 0.93
2024 GHG Emission Factors Hub. Table 5 Mobile Combustion CH4 and N2O for Non-Road Vehicles.

Users should complete boxes colored in lavender, orange, and green.

Present Value Year	2024
Dollar Year	2023

Year	Emission Changes (metric tons) CO2	CH4	N2O	Years used in Annualization: 2 years — Please confirm this is correct
2020				
2021				
2022				
2023				
2024				
2025	1,664	0	0	✓
2026	1,306	0	0	✓
2027				
2028				
2029				
2030				
2031				
2032				
2033				
2034				
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2077				
2078				
2079				
2080				
Totals	2,970	0	0	

Year	Undiscounted, Monetized Value of Emission Changes, deflated to 2023 dollars: Undiscounted, Monetized Value of CO2 Emissions Changes (millions, 2023$) — Near-Term Ramsey Discount Rate: CO2 2.5%	CO2 2.0%	CO2 1.5%	Undiscounted, Monetized Value of CH4 Emissions Changes (millions, 2023$) — Near-Term Ramsey Discount Rate: CH4 2.5%	CH4 2.0%	CH4 1.5%	Undiscounted, Monetized Value of N2O Emissions Changes (millions, 2023$) — Near-Term Ramsey Discount Rate: N2O 2.5%	N2O 2.0%	N2O 1.5%
2020									
2021									
2022									
2023									
2024									
2025	$0.25	$0.41	$0.70	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2026	$0.20	$0.33	$0.55	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2027									
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Annual Unrounded SC-CO2, SC-CH4, and SC-N2O Values, 2020-2080 (in 2020$)									
Gas	CO2	CO2	CO2	CH4	CH4	CH4	N2O	N2O	N2O
Near-term Ramsey Discount Rate	2.50%	2.00%	1.50%	2.50%	2.00%	1.50%	2.50%	2.00%	1.50%
2020	117	193	337	1,257	1,648	2,305	35,232	54,139	87,284
2021	119	197	341	1,324	1,723	2,391	36,180	55,364	88,869
2022	122	200	346	1,390	1,799	2,478	37,128	56,590	90,454
2023	125	204	351	1,457	1,874	2,564	38,076	57,816	92,040
2024	128	208	356	1,524	1,950	2,650	39,024	59,041	93,625
2025	130	212	360	1,590	2,025	2,737	39,972	60,267	95,210
2026	133	215	365	1,657	2,101	2,823	40,920	61,492	96,796
2027	136	219	370	1,724	2,176	2,910	41,868	62,718	98,381
2028	139	223	375	1,791	2,252	2,996	42,816	63,944	99,966
2029	141	226	380	1,857	2,327	3,083	43,764	65,169	101,552
2030	144	230	384	1,924	2,403	3,169	44,712	66,395	103,137
2031	147	234	389	2,002	2,490	3,270	45,693	67,645	104,727
2032	150	237	394	2,080	2,578	3,371	46,674	68,895	106,316
2033	153	241	398	2,157	2,666	3,471	47,655	70,145	107,906
2034	155	245	403	2,235	2,754	3,572	48,636	71,394	109,495
2035	158	248	408	2,313	2,842	3,673	49,617	72,644	111,085
2036	161	252	412	2,391	2,929	3,774	50,598	73,894	112,674
2037	164	256	417	2,468	3,017	3,875	51,578	75,144	114,264
2038	167	259	422	2,546	3,105	3,975	52,559	76,394	115,853
2039	170	263	426	2,624	3,193	4,076	53,540	77,644	117,443
2040	173	267	431	2,702	3,280	4,177	54,521	78,894	119,032
2041	176	271	436	2,786	3,375	4,285	55,632	80,304	120,809
2042	179	275	441	2,871	3,471	4,394	56,744	81,714	122,586
2043	182	279	446	2,955	3,566	4,502	57,855	83,124	124,362
2044	186	283	451	3,040	3,661	4,610	58,966	84,535	126,139
2045	189	287	456	3,124	3,756	4,718	60,078	85,945	127,916
2046	192	291	462	3,209	3,851	4,827	61,189	87,355	129,693
2047	195	296	467	3,293	3,946	4,935	62,301	88,765	131,469
2048	199	300	472	3,378	4,041	5,043	63,412	90,176	133,246
2049	202	304	477	3,462	4,136	5,151	64,523	91,586	135,023
2050	205	308	482	3,547	4,231	5,260	65,635	92,996	136,799
2051	208	312	487	3,624	4,320	5,363	66,673	94,319	138,479
2052	211	315	491	3,701	4,409	5,466	67,712	95,642	140,158
2053	214	319	496	3,779	4,497	5,569	68,750	96,965	141,838
2054	217	323	500	3,856	4,586	5,672	69,789	98,288	143,517
2055	220	326	505	3,933	4,675	5,774	70,827	99,612	145,196
2056	222	330	510	4,011	4,763	5,877	71,866	100,935	146,876
2057	225	334	514	4,088	4,852	5,980	72,904	102,258	148,555
2058	228	338	519	4,165	4,941	6,083	73,943	103,581	150,235
2059	231	341	523	4,243	5,029	6,186	74,981	104,904	151,914
2060	234	345	528	4,320	5,118	6,289	76,020	106,227	153,594
2061	236	348	532	4,389	5,199	6,385	76,920	107,385	155,085
2062	239	351	535	4,458	5,280	6,480	77,820	108,542	156,576
2063	241	354	539	4,527	5,361	6,576	78,720	109,700	158,066
2064	244	357	543	4,596	5,442	6,671	79,620	110,857	159,557
2065	246	360	547	4,666	5,523	6,767	80,520	112,015	161,048
2066	248	363	550	4,735	5,604	6,862	81,419	113,172	162,539
2067	251	366	554	4,804	5,685	6,958	82,319	114,330	164,030
2068	253	369	558	4,873	5,765	7,053	83,219	115,487	165,521
2069	256	372	562	4,942	5,846	7,149	84,119	116,645	167,012
2070	258	375	565	5,011	5,927	7,244	85,019	117,802	168,503
2071	261	378	569	5,085	6,013	7,344	86,012	119,027	170,013
2072	263	382	573	5,160	6,099	7,444	87,006	120,252	171,523
2073	266	385	576	5,234	6,184	7,545	87,999	121,477	173,033
2074	269	388	580	5,309	6,270	7,645	88,992	122,702	174,543
2075	271	391	583	5,383	6,355	7,745	89,985	123,926	176,053
2076	274	394	587	5,458	6,441	7,845	90,978	125,151	177,563
2077	276	398	591	5,532	6,527	7,946	91,971	126,376	179,073
2078	279	401	594	5,607	6,612	8,046	92,964	127,601	180,582
2079	282	404	598	5,681	6,698	8,146	93,958	128,826	182,092
2080	284	407	601	5,756	6,783	8,246	94,951	130,050	183,602

Source: *EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances (https://www.epa.gov/system/files/documents/2023-12/epa_scghg_2023_report_final.pdf)*

GDP Deflator (used to convert from 2020$ to currency dollar year)													
Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
GDP index	91.481	93.185	94.771	96.421	97.316	98.241	100.000	102.291	104.008	105.381	110.213	117.973	122.273
2020 Deflator	0.868097665	0.884267562	0.899317714	0.914975185	0.923468177	0.932245851	0.948937664	0.970677826	0.986971086	1	1.045852668	1.119490231	1.16029455

Source: *Gross domestic product (implicit price deflator), Index 2017=100, Annual, Not Seasonally Adjusted; Federal Reserve Economic Data. Downloaded 03-13-24 (https://fred.stlouisfed.org/series/A191RD3A086NBEA)*

Emission Changes			
	Emissions Changes (metric tons)		
Year	CO2	CH4	N2O
2020			
2021			
2022			
2023			
2024			
2025	1,664	0	0
2026	1,306	0	0
2027			
2028			
2029			
2030			
2031			
2032			
2033			
2034			
2035			
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2051			
2052			

Constant discounting			
Number of years (N)	2		
Discount Rate	2.5%	2.0%	1.5%

Present and Annualized Values of CO2 Emission Changes (millions, 2023$)			
GHG	CO2	CO2	CO2
Discount Rate	2.5%	2.0%	1.5%
Present Value in 2024 (2023$)	$0.44	$0.71	$1.22
Annualized Value (2 Years, 2023$)	$0.23	$0.37	$0.62

Present and Annualized Values of CH4 Emission Changes (millions, 2023$)			
GHG	CH4	CH4	CH4
Discount Rate	2.5%	2.0%	1.5%
Present Value in 2024 (2023$)	$0.00	$0.00	$0.00
Annualized Value (2 Years, 2023$)	$0.00	$0.00	$0.00

Present and Annualized Values of N2O Emission Changes (millions, 2023$)			
GHG	N2O	N2O	N2O
Discount Rate	2.5%	2.0%	1.5%
Present Value in 2024 (2023$)	$0.00	$0.00	$0.00
Annualized Value (2 Years, 2023$)	$0.00	$0.00	$0.00

Total Present and Annualized Values of all GHG Emission Changes (CO2, CH4, and N2O) (millions, 2023$)			
GHG	Total	Total	Total
Discount Rate	2.5%	2.0%	1.5%
Present Value in 2024 (2023$)	$0.44	$0.72	$1.23
Annualized Value (2 Years, 2023$)	$0.23	$0.37	$0.63

Emission Changes			
	Emissions Changes (metric tons)		
Year	CO2	CH4	N2O
2020			
2021			
2053			
2054			
2055			
2056			
2057			
2058			
2059			
2060			
2061			
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2078			
2079			
2080			
Total	**2,970**	**0**	**0**

Constant discounting			
Number of years (N)	2		
Discount Rate	2.5%	2.0%	1.5%

	Discounted, Monetized Value of Emission Changes, discounted to 2024 (millions, 2023$) - Constant Discounting								
	Discounted, Monetized Value of CO2 Emissions Changes (millions, 2023$)			Discounted, Monetized Value of CH4 Emissions Changes (millions, 2023$)			Discounted, Monetized Value of N2O Emissions Changes (millions, 2023$)		
	Discounted Back to 2024			Discounted Back to 2024			Discounted Back to 2024		
	CO2	CO2	CO2	CH4	CH4	CH4	N2O	N2O	N2O
Year	2.5%	2.0%	1.5%	2.5%	2.0%	1.5%	2.5%	2.0%	1.5%
2020									
2021									
2022									
2023									
2024									
2025	$0.24	$0.40	$0.68	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2026	$0.19	$0.31	$0.54	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
2027									
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	Discounted, Monetized Value of Emission Changes, discounted to 2024 (millions, 2023$) - Constant Discounting								
	Discounted, Monetized Value of CO2 Emissions Changes (millions, 2023$)			Discounted, Monetized Value of CH4 Emissions Changes (millions, 2023$)			Discounted, Monetized Value of N2O Emissions Changes (millions, 2023$)		
	Discounted Back to 2024			Discounted Back to 2024			Discounted Back to 2024		
	CO2	CO2	CO2	CH4	CH4	CH4	N2O	N2O	N2O
Year	2.5%	2.0%	1.5%	2.5%	2.0%	1.5%	2.5%	2.0%	1.5%
2051									
2052									
2053									
2054									
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2073									
2074									
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2078									
2079									
2080									
Totals	$0.44	$0.71	$1.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Appendix C. Agency Correspondence

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

MEMORANDUM

TO: File

FROM: *Emma Jones, CDM Smith*

DATE: August 30, 2024

SUBJECT: FEMA Building Resilient Infrastructure and Communities Grant Program
No Potential to Affect Endangered or Threatened Species
Metropolitain Water Reclamation District of Greater Chicago (MWRD)
City of Harvey Stormwater Management Project
Metropolitan Water Reclamation District of Greater Chicago, Cook County, Illinois
EMC-2022-BR-012-0015

This memo addresses Federal Emergency Management Agency's (FEMA) obligations for federally listed species under the Endangered Species Act of 1973, as they pertain to this project. The Illinois Emergency Management Agency (Applicant) and the Metropolitan Water Reclamation District of Greater Chicago (Subapplicant) propose to implement stormwater management measures to mitigate potential future flood damage and loss within the City of Harvey. The Proposed Action would include two main components: installation of stormwater sewers and related ancillary stormwater infrastructure, such as catch basins, inlets, and maintenance hole covers within the rights-of-way throughout the 126-acre project area; and construction of an approximately 3.4-acre stormwater detention basin at 41.611047, -87.652735. The detention basin would provide an additional 23 acre-feet of stormwater storage capacity and would be planted with native wetland and mesic plant species. The proposed location of the basin currently includes 31 parcels, of which 16 are vacant and 15 contain residential buildings. The Subapplicant would fund the acquisition of the 31 parcels. Implementation of the Proposed Action, including trenching for stormwater improvements and construction of the detention basin, would disturb up to 6 acres within the larger project area. In accordance with Section 7(a)(2) of the ESA, FEMA has evaluated the potential effects of its action on threatened and endangered species and critical habitat that may occur as a result of proposed activities for this project.

Enclosures

The project location was entered into the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) website, which allows users to identify threatened and endangered species that may be present at site locations. A species list for the project was downloaded from IPaC on May 21st, 2024. This research identified six listed species that may be potentially present within the Action Area: three threatened and three endangered (see Table 1). The project does not overlap with any designated critical habitat. A variety of sources were reviewed to determine if the project area could be

appropriate habitat for the identified species, including the USFWS Environmental Conservation Online System, USFWS Fact Sheets, USFWS Recovery Plans, and Federal Register publications.

Table 1: ESA-Listed Species Potentially Present within Action Area

Common Name	Scientific Name	Federal Status	Critical Habitat	Habitat Requirements/Notes
Mammals				
Northern long-eared bat	*Myotis septentrionalis*	Endangered	No	Inhabits large, contiguous forests, roosting in trees and occasionally human-made structures like barns. Hibernate in caves and mines with high humidity during winter.
Birds				
Rufa red knot	*Calidris canutus rufa*	Threatened	No	Breeds, roosts, and forages along fresh and saltwater coastlines. In Illinois, the local population is found along Lake Michigan.
Reptiles				
Eastern massasauga	*Sistrurus catenatus*	Threatened	No	Inhabits shallow wetlands and connected uplands in the Great Lakes region. Require wetland burrows for overwintering.
Insects				
Hine's emerald dragonfly	*Somatochlora hineana*	Endangered	No	Occurs in spring-fed wetlands, wet meadows, and marshes dominated by grasslike plants. Relies on slow-moving aquatic systems for nurseries.
Plants				
Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	No	Occurs in sunny, wet to mesic prairie habitats and wetland communities throughout the Great Lakes region. Requires sedge meadows, fens, and marsh edges dominated with grasses or sedges with low occurrence of invasive species.
Leafy prairie-clover	*Dalea foliosa*	Endangered	No	Inhabits open prairies with thin calcareous soil. Restricted to dolomite prairie community in Illinois, characterized by thin glacial debris, dolomite bedrock at or near surface, and high magnesium content in soil.

Source: Species List from IPaC (USFWS 2024c)

Determination

Northern long-eared bat: Although the project occurs within the range of the northern long-eared bat, the trees that would be removed within the project area are not suitable habitat for the bat species. The trees are not in a continuous tract of forest and are surrounded by urbanized land. No hibernacula nor maternity roost trees are near the project location. Therefore, the species is not expected to occur within the project area (Illinois Natural Heritage Database [INHD] 2024; USFWS 2016a, 2023, 2022).

Rufa red knot: The project area is not within coastal marine or estuarine habitats. These habitat features are necessary for the presence of red knots; therefore, the species is not expected to occur within the project area (INHD 2024, USFWS 2024d).

Eastern massasauga: The project area does not contain wetlands necessary for the presence of wintering eastern massasaugas. Additionally, the project area does not support upland forest habitat adjacent to wetlands that is necessary for the species' summer habitat. Therefore, the species is not expected to occur within the project area (INHD 2024; USFWS 2016b, 2024a).

Hine's emerald dragonfly: The project area does not contain wetlands, rivers, or meadows necessary for the presence of the Hine's emerald dragonfly. Therefore, the species is not expected to occur within the project area (INHD 2024; USFWS 2010, 2024b).

Eastern prairie fringed orchid: The project area does not contain suitable habitat for the orchid, which is characterized as wet to mesic prairies dominated by grasslike native plant species. Instead, invasive plant species dominate the suburban vegetation community within the project area and disturbance is high. Although an observation of eastern prairie fringed orchid occurs within a block of the project area, the record did not actually occur in the specific location in which the pin is posted due to protective policies for listed species (iNaturalist 2024). The observation likely occurred in a nearby prairie or nature preserve rather than in a developed community. Because eastern prairie fringed orchid is not found in degraded suburban habitats, the species is not expected to occur in the project area (iNaturalist 2024, INHD 2024, USFWS 2024e).

Leafy prairie-clover: No dolomite prairie habitats occur within the project area. The project area supports a suburban vegetation community. Therefore, the leafy prairie-clover is not expected to occur within the area (Illinois Department of Natural Resources 2016, U.S. Forest Service 2024).

Based on the proposed action and in accordance with Section 7 of the Endangered Species Act and its implementing regulations, Title 50 of the Code of Federal Regulations Part 402, FEMA has made a no effect determination for the impacts of this undertaking.

References

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U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

September 13, 2024

Carey Mayer, Division Manager and Deputy State Historic Preservation Officer
Illinois Department of Natural Resources
Attn: State Historic Preservation Office
One Natural Resources Way
Springfield, IL 62702-1271

Re: City of Harvey Stormwater Management (SHPO Log #013020624)
Myrtle Avenue between E. 153rd & E. 154th Streets, Harvey, Cook Co. IL
41.611113, -87.652690 / T36N R14E Sections 17, 18
FEMA BRIC Project #EMC-2022-BR-012-0015

Dear Ms. Mayer:

Pursuant to Section 106 of the National Historic Preservation Act, I am writing this letter to continue and conclude consultation regarding the captioned Building Resilient Infrastructure in Communities (BRIC) grant project. On February 6, 2024, FEMA contacted the Illinois State Historic Preservation Office (SHPO) to inform them about the proposed project. The notification included maps of the project area, a description of the proposed scope of work (SOW), an outline of public notification and outreach efforts to date, and the intent to conduct architectural and archaeological surveys to facilitate Section 106 review. The Illinois SHPO responded on April 15, 2024, with an assigned number for the project (SHPO Log #013020624) and a finding of **No Historic Properties Affected** (see enclosed).

In accordance with 36 CFR §800.11, I am enclosing Section 106 documentation and the results of the archaeological and architectural surveys conducted in March 2024 within the APEs for below and above-ground effects. This documentation provides justification for FEMA's finding of **No Adverse Effects on Historic Properties.**

Additional public outreach regarding the proposed undertaking has occurred since FEMA's previous correspondence with the SHPO. A public notice has been posted in the Chicago Tribune and the Daily Southtown newspapers. FEMA compiled public comments and questions that were received via email and voicemail in response to the circular mailed to project area residents in February 2024. In collaboration with the City of Harvey and the Metropolitan Water Reclamation District (MWRD), FEMA developed an FAQ document (enclosed) that responded to the public's comments and provided information on FEMA's next steps in the environmental review process. English and Spanish language copies of the FAQ were mailed to project area residents in August 2024 and posted online in a 508-compliant format at: https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey. In accord with the Council on Environmental Quality's regulations for complying with the National Environmental Policy Act (NEPA), FEMA has determined the project will require a formal Environmental Assessment (EA).

Pursuant to 36 CFR 800.5(c)(1), if we receive no response from your office within thirty (30) days, we will consider the lack of response to be concurrence with the finding of **No Adverse Effects on Historic**

Properties and will move forward with this undertaking following the conclusion of the NEPA review process. We would appreciate a response by email from your office. If you have questions, please contact Rachel Barnhart of my staff at 256-282-6392 or at fema-r5-environmental@fema.dhs.gov.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Enclosures:

1) Section 106 Documentation
2) Project Area Improvements Map
3) Structure Demolition Map
4) SHPO Finding Letter dated April 15, 2024
5) Public Outreach – FAQ Letter
6) Phase 1A Archaeology Survey Report prepared by Richard Grubb & Associates
7) Architectural Survey Report prepared by Richard Grubb & Associates
8) Architectural Survey Report Attachments
9) Architectural Survey Forms prepared by Richard Grubb & Associates

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605-1521

FEMA

September 13, 2024

Documentation Concluding Section 106 Consultation
for a FEMA-Funded Undertaking

Project Information:

Project ID: EMC-2022-BR-012-0015 / SHPO Log #013020624
Title: City of Harvey Stormwater Management
Address: Myrtle Avenue between E. 153rd & E. 154th Streets
Location: Harvey, Cook County, Illinois
GPS: 41.611113, -87.652690
PLSS: T36N R14E Sections 17, 18

Description of Undertaking and APE:

The undertaking's Project Area and Scope of Work have not changed since previous written correspondence on February 6, 2024.

The City of Harvey in Cook County, Illinois, has a history of flooding resulting from overland flow and combined sewer backups into basements. The Illinois Emergency Management Agency (Applicant), the Metropolitan Water Reclamation District of Greater Chicago, and the City of Harvey (Sub-Applicants) propose to use Building Resilient Infrastructure in Communities (BRIC) federal grant funds to implement stormwater management measures to mitigate against potential future flood damages and loss in the city. A flood study was conducted to define a project area and develop the proposed measures. The 126-acre project area is delineated by West 152nd Street to the north, Center Avenue to the east, East 154th Street to the south, and Wood Avenue to the west (see Figure 1 and Enclosure 2 –Project Area Improvements Map with project area outlined in orange).

Work Approved Under Allowances

The following Scope of Work measures meet allowances Tier II.G.1 and Tier II.G.2 under the Statewide Programmatic Agreement effective June 8, 2018, as amended.

- Conduct approximately 4,802 feet of localized stormwater sewer improvements along side streets (Paulina, Marshfield, Ashland, Vine, Myrtle, Loomis, Lexington, and Turlington Avenues) between 153rd and 154th Streets.
- Install other ancillary stormwater infrastructure throughout the project area such as catch basins, inlets, and manhole covers.

Work Under Review

The following Scope of Work measures are subject to review.

1) Acquire a total of 31 parcels, of which 16 are vacant lots, and demolish the residential buildings on the other 15 parcels along Myrtle Avenue between 153rd and 154th Streets for the construction of an approximately 3.4-acre stormwater

detention basin approximately 10 feet in depth (with a storage capacity of 23 acre-feet) to be located at 41.611113, -87.652690. (See Enclosure #3 – Existing Structure Demolition Map)

2) Install approximately 1,887 feet of 18-to-26-inch diameter stormwater sewers along 153rd Street between Myrtle and Center Avenues to convey stormwater to the newly constructed detention basin.

3) Install approximately 2,276 feet of 24-to-36-inch diameter stormwater sewers along 153rd Street between Myrtle Avenue and Wood Street to connect with the Illinois Department of Transportation's (IDOT) storm sewer system, and install a control structure at the west end (intersection of 153rd and Wood streets) to ensure efficient operation of the storm sewer system and detention pond.

4) Install approximately 682 feet of 12-inch diameter low flow stormwater sewers along Vine Avenue from 153rd Street north to the existing combined sewer system located at Vine Avenue and 152nd Street.

The Area of Potential Effects (APE) includes the geographic area within which the proposed project may directly or indirectly impact potential historic properties.

For Measure 1, the APE for ground-disturbing activities includes the 31 legal parcels to be acquired where the proposed detention pond will be located (see Figures 2,4). For Measure 1, the APE for potential above-ground impacts was drawn to include the 31 legal parcels to be acquired and the abutting legal parcels to the east, west, south, and north of the structures to be demolished to consider potential visual effects (see Figures 3,4). The APEs include the area where access, staging, and demolition will occur.

For Measures 2 through 4, the APE for ground-disturbing activities is defined by the east-west oriented right-of-way of 153rd Street between Wood Street and Center Avenue, and the north-south oriented right-of-way of Vine Avenue between 153rd Street and 152nd Street (see Figure 4).

Steps Taken to Identify Historic Properties and the Description of Historic Properties:

Archaeology

To assess the potential for intact archaeological resources present in the APE, FEMA SOI qualified archaeologist conducted initial background research using the Illinois Historic and Architectural Resources Geographic Information System (HARGIS), the Illinois Inventory of Archaeological Sites (IIAS), and the CRM Documents databases to identify the locations of previously recorded archaeological sites and previous cultural resources surveys within a one-mile radius of the APE. The National Park Service's (NPS) National Register of Historic Places (NRHP) database was also used to determine if previously identified archaeological sites or districts listed in or eligible for listing are present within or near the APE.

A review of the NPS NRHP database confirms that there are no archaeological sites or districts listed in the NRHP in Harvey, Illinois.

A review of IIAS revealed there are no archaeological sites within the APE nor within one mile of the APE (Figure 6).

The IIAS also indicates that the APE is not within the Archaeological Resource Potential area.

The APE has not been surveyed. Five surveys for previous projects were completed within one mile of the APE:

- 7956: A Phase I archaeological reconnaissance survey, completed in 1996, of 11.7 acres for a project to widen 159th Street and replace two structures carrying the ICRR over Metra. The survey found that the "entire area is completely disturbed by residential, commercial and railroad activity," located no archaeological material, and recommended project clearance.
- 8521: A Phase I archaeological reconnaissance survey, completed in 1997, of 14.6 acres for a project to increase the right-of-way along Route 6 between I-294 and Harlem Avenue. The survey located no archaeological material and recommended project clearance.
- 17530: A Phase I archaeological reconnaissance survey, completed in 2007, of 0.22 acres for a cellular communications tower with access road and utility corridor. The survey located no archaeological materials and recommended project clearance.
- 20085: A Phase I archaeological reconnaissance survey, completed in 2013, of 0.1 acres to construct a telecommunications structure. The survey located no archaeological material and recommended project clearance.
- 22464: A Phase I archaeological reconnaissance survey, completed in 2012, of 14.21 acres, to acquire additional land for an intersection improvement project at Halsted Street, Vincennes Road, and 152nd Street. The survey located no archaeological materials and recommended project clearance.

The Undertaking to install stormwater sewers will be completed within the existing, previously disturbed right of way of 153rd Street and Vine Avenue. These components are not anticipated to encounter intact archaeological sites or features within their original depositional context.

The demolition of extant structures and construction of a detention basin will occur across 31 parcels along Myrtle Avenue between 153rd and 154th Streets (41.611113, -87.652690). Given the scale of the Undertaking to involve demolition of standing structures and excavation affecting 3.4 acres (23-acre-feet), in addition to the potential for a determination of NRHP eligibility for individual standing structures or a historic district within the APE, FEMA requested more in-depth, original research be carried out to be able to make an archaeological sensitivity assessment in the APE and determine if Phase I archaeological testing would be required.

FEMA notified the Illinois SHPO of the intention to survey on February 6, 2024. In a letter of April 15, 2024, the SHPO responded with no objection to the Undertaking as planned and noted that there were no historic properties present within the proposed project area (SHPO Log#013020624).

Richard Grubb & Associates (RGA) had already begun conducting background research on the project location and completed a “literature review and archaeological sensitivity assessment” to determine whether the APE has low, medium, or high potential to contain

archaeological resources and to make recommendations for any further studies, if warranted. The RGA 2024 report findings are attached (Enclosure #6). Below is a summary of the findings.

Literature Review and Archaeological Sensitivity Assessment

The purpose of the Phase IA archaeological survey was to assess whether the project area has low, medium, or high potential to contain archaeological resources within the APE and to make recommendations for any further archaeological survey, if warranted. RGA completed background research, an environmental review, pedestrian survey, an assessment of archaeological sensitivity, and reporting. Research was conducted using the Illinois Historic and Architectural Resources Geographic Information System (HARGIS) and the Illinois Inventory of Archaeological Sites (IIAS) websites to identify the locations of previously recorded archaeological sites and previous cultural resources surveys within a 1-mile radius of the APE. HARGIS was also used to determine if previously identified resources listed in or eligible for listing in the NRHP are present within or near the APE, including both archaeological sites and historic properties. In order to develop cultural contexts for the interpretation of such resources, background research was conducted, including a review of pertinent secondary sources, historic maps, atlases, and local and county histories. The pedestrian survey consisted of the Principal Investigator walking over the entire APE to assess and document the current conditions.

The APE is situated entirely within a residential neighborhood, bounded by East 153rd Street to the north, East 154th Street to the south, and residential alleyways to the east and west. The APE consists of roadways, alleyways, vacant parcels, and parcels with extant dwellings and outbuildings. Approximately half (16) of the 31 parcels within the APE no longer contain dwellings and/or the outbuildings that are shown on the latest Sanborn maps. A review of the vacant parcels on the Cook County Assessor's Office website indicated that six of the seven vacant parcels with available data contained dwellings with basements. Each of the vacant parcels was walked over to assess the potential for intact buried historic or pre-Contact deposits and all were determined to have been graded and filled to a point where intact deposits are unlikely. The only evidence of the non-extant structures were sidewalks and concrete slabs; the dwellings, basements, and outbuildings were entirely demolished, and the area was filled in. Evidence of utilities, such as water and sewer mains, was noted within the grassy area between the sidewalk and Myrtle Avenue. Based on the pedestrian reconnaissance and background research, it is concluded that the APE is unlikely to contain intact cultural deposits or features relating to domestic disposal of refuse, such as privies and other landscape features, which could relate to early occupations prior to the advent of utilities, including indoor plumbing. The APE is assessed with a low sensitivity for historic archaeological resources. Similarly, given the extensive land alterations related to the development and subsequent demolition of structures within the neighborhood, the APE is assessed with a low sensitivity for pre-Contact archaeological resources.

Given the previous disturbance by the construction of residential structures and utilities, and the previous demolition of a portion of the residences, it is recommended that no further archaeological survey is necessary within the APE.

Standing Structures

In March and August 2024, SOI-qualified FEMA staff reviewed the Illinois SHPO's Historic and Architectural Resources Geographic Information System (HARGIS) database and the National Register of Historic Places (NRHP) database for historic properties within and near the APE.

Staff identified no listed properties in the City of Harvey (see Figure 5).

The nearest listed property to the APEs is:

- **Pacesetter Gardens Historic District** (NR No. 05001252, listed 2005), 13604-13736 S. Lowe Ave., Riverdale, Illinois.
    - Comprised of twelve Modern Movement townhouses built in 1960 by developer Harry J. Quinn who advocated for multi-family housing.
    - Listed under Criterion A in the areas of Social History and Community Planning and Development and Criterion C in the area of Architecture.
    - Located 2.6 miles northeast of the APEs.

Staff identified the following properties near the APEs that have been determined eligible for listing in the NRHP:

- **Harvey Old City Hall** (HARGIS Ref. No. 801876), 154 E. 154th Street, Harvey, Illinois
    - This property is adjacent to the project area's south boundary and approximately 0.2 miles southeast of the proposed detention pond area.
- **Bridge over Interstate 294 carrying 167th Street** (HARGIS Ref. No. 154752), Hazel Crest, Illinois
    - Located 2.25 miles southwest of the APEs.
- **Libby, McNeil & Libby Plant** (HARGIS Ref. No. 153430), 13636 S. Western Avenue, Blue Island, Illinois
    - Located 2.74 miles northwest of the APEs.
- **Bridge over Little Calumet River carrying Cottage Grove Ave** (HARGIS Ref. No. 154757), South Holland, Illinois
    - Located 2.87 miles east of the APEs.

The resources near the APEs that were surveyed and determined eligible will not be impacted by the SOW.

FEMA contracted with CDM Smith to conduct an architectural survey within the APE for above-ground resources, which contains 53 properties. CDM Smith sub-contracted the architectural survey to Richard Grubb & Associates, Inc. (RGA) who completed fieldwork and onsite research between March 18 and March 21, 2024. An architectural survey form that includes photographs was completed for each property within the APE. Following the fieldwork, RGA conducted background research on the properties within the APE by reviewing property records, aerial photography, USGS topographical maps,

Sanborn fire insurance maps, online genealogical data, digitized newspapers, and historical city directories. Upon conclusion of research, RGA completed a survey report and findings of eligibility for the properties, to include potential for listing individually and/or as part of a historic district (see Enclosures 7-8).

The surveyed properties are predominantly single and multi-family dwellings above 45 years of age. The APE also includes two commercial buildings, one residential building with a commercial addition, and two church complexes. The residential area has been subject to vacancies, deterioration, and demolition, resulting in several vacant lots and a disruption of the area's historical building density. Architectural descriptions of the structures in the APE are provided in the enclosed survey forms.

The survey found that 52 of the 53 properties within the APE no longer retained integrity sufficient for listing in the NRHP and/or lacked historical significance under the National Register Criteria. These properties were recommended **not eligible** for listing in the NRHP either individually or as part of a district. Determinations of eligibility of the structures in the APE are provided in the enclosed survey forms.

One property, the Ascension-St. Susanna School and Church Complex at 15240 Myrtle Avenue in the northwest corner of the APE, was determined eligible for listing in the NRHP. The 2.4-acre property includes a 1919 church, 1926 school, 1949 rectory, 1957 convent, and a non-historic two-car garage. **The Complex is eligible for listing under Criterion A in the area of Ethnic History and under Criterion C in the area of Architecture**. The complex is significant under Criterion A as an early example of a desegregated institution and is significant under Criterion C as an excellent example of a Catholic complex exhibiting several different types of religious buildings in various architectural styles including Gothic Revival (the church), Beaux Arts (the school), Classical Revival (the rectory), and Modern Movement (the convent).

Determination of Eligibility:

Archaeology

Based on the information provided above, FEMA has determined that ***no resources within the APE are eligible for listing on the National Register of Historic Places.***

Standing Structures

Based on the information provided above, FEMA has determined that the **Ascension-St. Susanna School and Church Complex** at 15240 Myrtle Street in Harvey, Illinois retains sufficient integrity and is **eligible** for listing in the NRHP at the local level under Criteria A and C in the areas of Ethnic History and Architecture. The period of significance under Criterion A would coincide with the years the complex represented an early local example of desegregation, and the period of significance under Criterion C would encompass the years of construction of the significant buildings in the complex (1919 – church, 1926 – school, 1949 – rectory, and 1957 – convent). The complex's character-defining features include its exterior architectural design and materials seen on the church, school, rectory, and convent, and the interior spaces within these buildings (church sanctuary, double-loaded corridors lined with classrooms and dormitory rooms) that reflect its historic functions.

FEMA has also determined that the remaining standing structures within the APE for above-ground effects are **not eligible** for listing in the NRHP individually or as part of a district.

The Undertaking's Effects on Historic Properties:

The Ascension-St. Susanna School and Church Complex is located in the northwest corner of the APE for above-ground resources and is owned by the City of Harvey. The church, located on the north side of E. 153rd Street and facing Myrtle Avenue, sits across the road to the north of the properties along Myrtle Avenue that are proposed to be demolished for the creation of a detention pond. The City of Harvey has shared a future concept for a city park which would include the detention pond and the acreage on which the complex sits. However, the city currently lacks funding for the envisioned park and has no definitive plans to commence park development following the completion of the undertaking.

The demolition of the properties on Myrtle Avenue to the south of the church would alter the historic property's viewshed. However, the present viewshed is marked with vacant lots as 16 of the 31 parcels within the proposed detention basin area are vacant. Thus, the undertaking will not significantly alter the historic property's current setting, and the overall setting will continue to be residential following the completion of the detention basin. The historic property's integrity of location, design, materials, workmanship, feeling, and association and its character-defining features will not be altered by the undertaking. The vacant historic property is not in active use and is secured with fencing, and there will be no functional impacts to the property during the undertaking.

Finding:

FEMA finds that this undertaking will result in ***no historic properties affected*** for archaeological resources.

FEMA finds that this undertaking will result in ***no adverse effects on historic properties*** and respectfully requests concurrence with this finding within thirty days.

Summary of Views of Consulting Parties or Public:

FEMA notified the following tribes on November 15, 2023, about the undertaking and requested their input on the presence of historic properties: Citizen Potawatomi Nation, Delaware Tribe of Indians, Forest County Potawatomi Community of Wisconsin, Hannahville Indian Community, Ho-Chunk Nation, Miami Tribe of Oklahoma, Pokagon Band of Potawatomi Indians, Prairie Band Potawatomi Nation, and Shawnee Tribe. The Miami Tribe of Oklahoma indicated no objections to the undertaking as proposed. The Pokagon Band of Potawatomi Indians found no historic properties of significance to the Tribe existed within the APE. Both tribes requested to be notified in the event of an unanticipated discovery. On August 20, 2024, FEMA notified the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan about the undertaking and requested their input on the presence of historic properties; no respond has been received to date.

The Illinois Emergency Management Agency (Applicant), the Metropolitan Water Reclamation District of Greater Chicago, and the City of Harvey (Sub-Applicants) have

engaged in public outreach and information efforts for the undertaking. In 2020, as part of a study to develop stormwater management efforts, the MWRD distributed a survey about flooding impacts to Harvey residents. Over 400 responses were received with approximately 66% reporting flooding. In March 2022, the MWRD and the firm HR Green presented a case study of the City's flooding with proposed stormwater management improvements; this study formed the basis for the undertaking's SOW.

Harvey's Office of the Mayor and the MWRD sent notification letters to city residents in June 2023 about the proposed stormwater management improvements. In July 2023, the City held three public meetings to discuss the proposal with the public. Some occupants within the proposed detention pond area oppose the undertaking. Property acquisition is not included in the funds from the FEMA BRIC grant project and is being solely funded by the MWRD. The City of Harvey and the MWRD are working with an acquisition firm to obtain ownership of all parcels along Myrtle Avenue in the location of the proposed detention pond.

FEMA has also engaged in public outreach efforts concerning the undertaking. In January 2024, a public website was created on FEMA.gov[1] to provide the public with a portal where all outreach documents can be accessed. In January and February of 2024, FEMA posted a project map, informational circular, and public notice on the website. Hard copies of the map, circular, and public notice were mailed to all addresses within the project area. The public notice was posted in the Chicago Tribune and Daily Southtown newspapers. These actions initiated a public comment period that has remained open for the duration of the BRIC grant review. In March 2024, FEMA met with the City and the MWRD to review public commentary, which primarily focused on concern for the displacement of residents in the proposed detention pond area and keeping the area safe rather than historic preservation. The City and the MWRD assisted with the development of a Frequently Asked Questions (FAQ) document that responded to the public commentary and provided information on FEMA's next steps in the environmental review process. English and Spanish language copies of the FAQ were mailed to residents in the project area and posted online. In accord with the Council on Environmental Quality's regulations for complying with the National Environmental Policy Act (NEPA), FEMA has determined the undertaking will require a formal Environmental Assessment (EA).

[1] https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey

Figures:

Figure 1: Location map.
FEMA, NEPA Environmental Assessment Scoping Document, 2024.

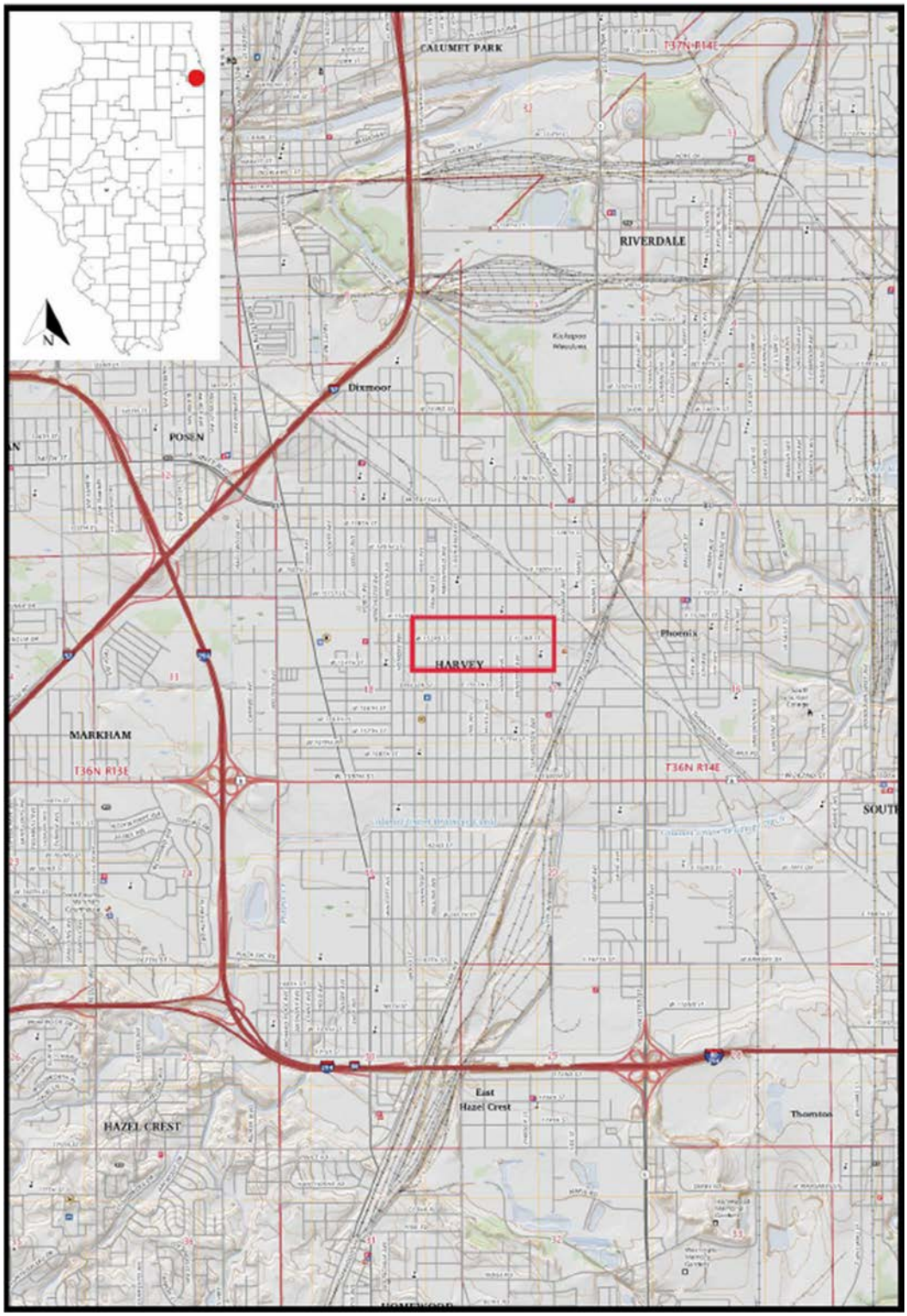


Figure 2: Area of Potential Effects map for ground-disturbing activities at site of proposed detention pond. APE boundary marked in red.
Structure Demolition Map, Metropolitan Water Reclamation District of Great Chicago, 2023.

Figure 3: Area of Potential Effects map for above-ground resources. APE boundary marked in red. Detention pond location marked in yellow. St. Susanna Catholic Church complex boundary marked in green.
Richard Grubb and Associates, Architectural Survey Report, 2024.

Figure 4: Combined Area of Potential Effects map. APE for ground-disturbing activities associated with storm sewer installation and detention pond shown in red. APE for above-ground resources shown in purple. Project area outlined in yellow. *Google Earth, 2024.*

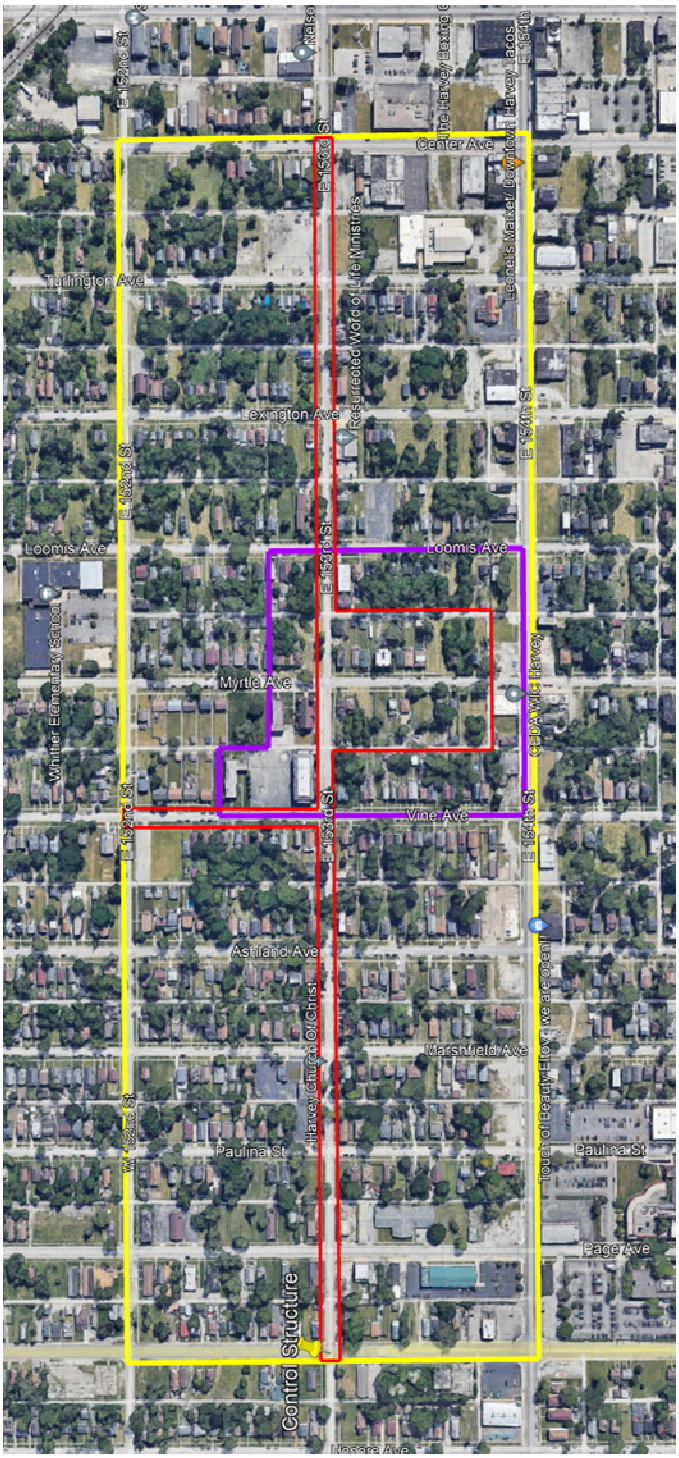


Figure 5: Illinois SHPO HARGIS Database Map with red pin on proposed detention pond location. Properties determined eligible identified with blue dots. Listed properties identified with purple dots. *Illinois State Historic Preservation Office, HARGIS Database, accessed August 2024.*

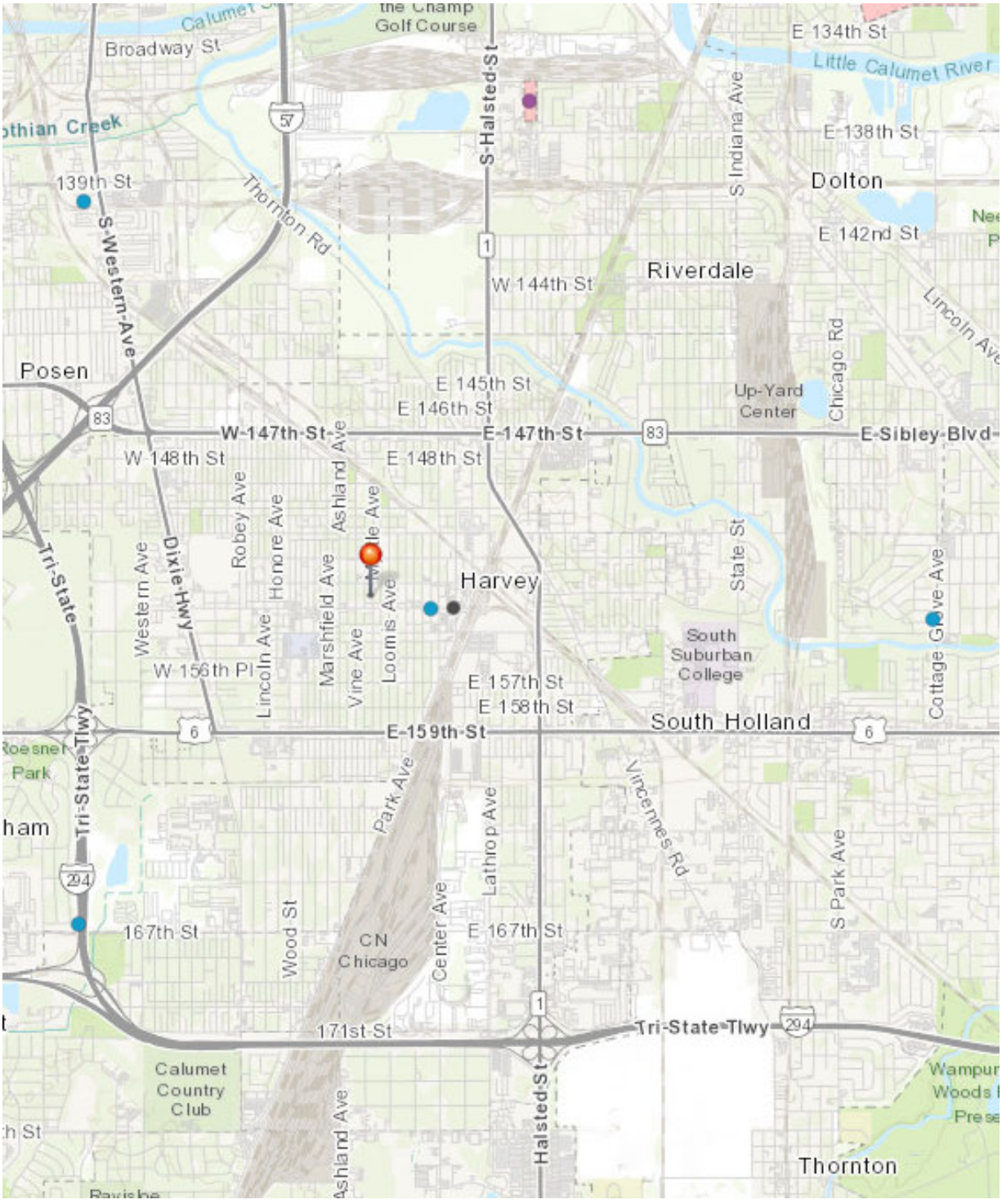
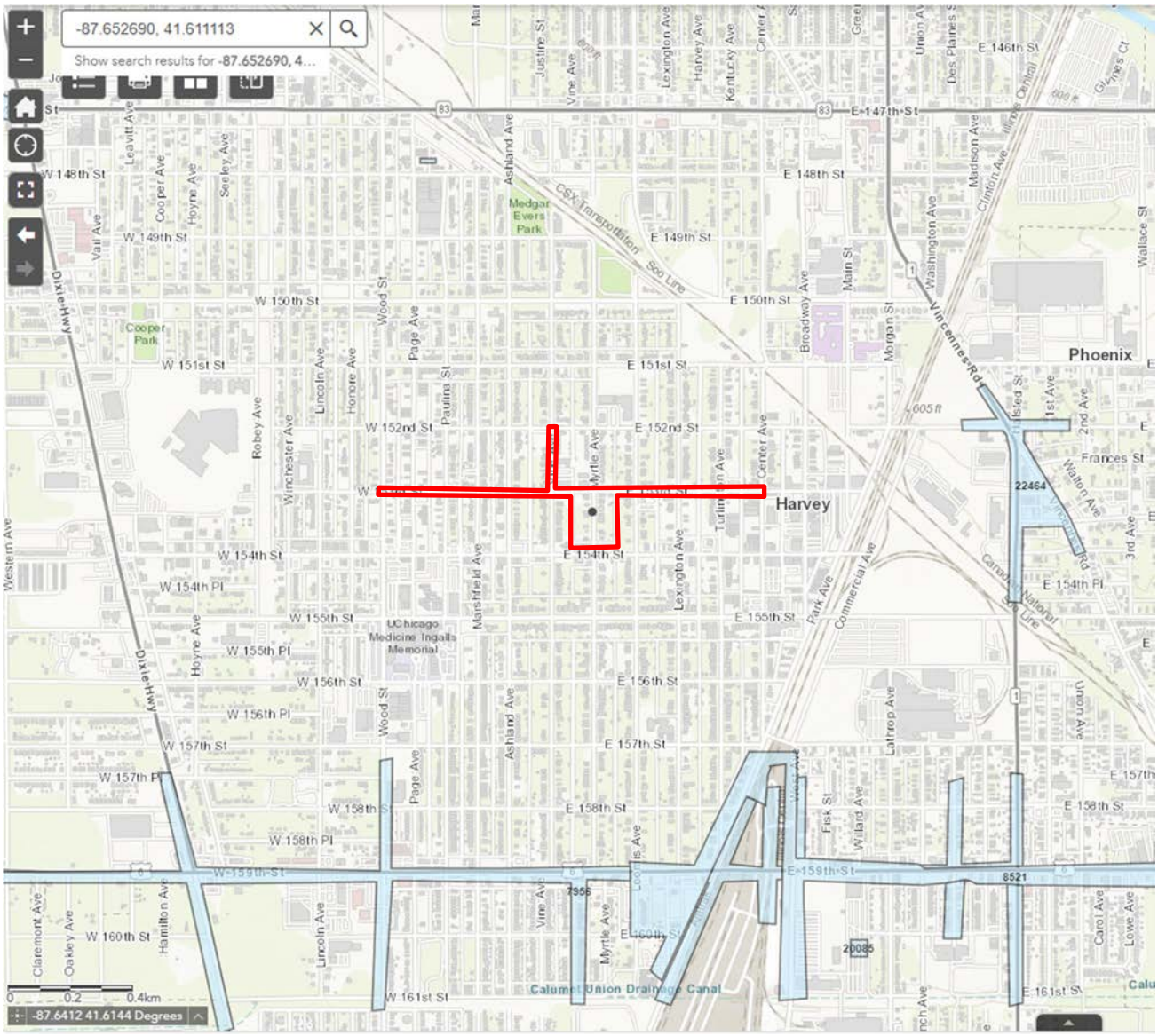
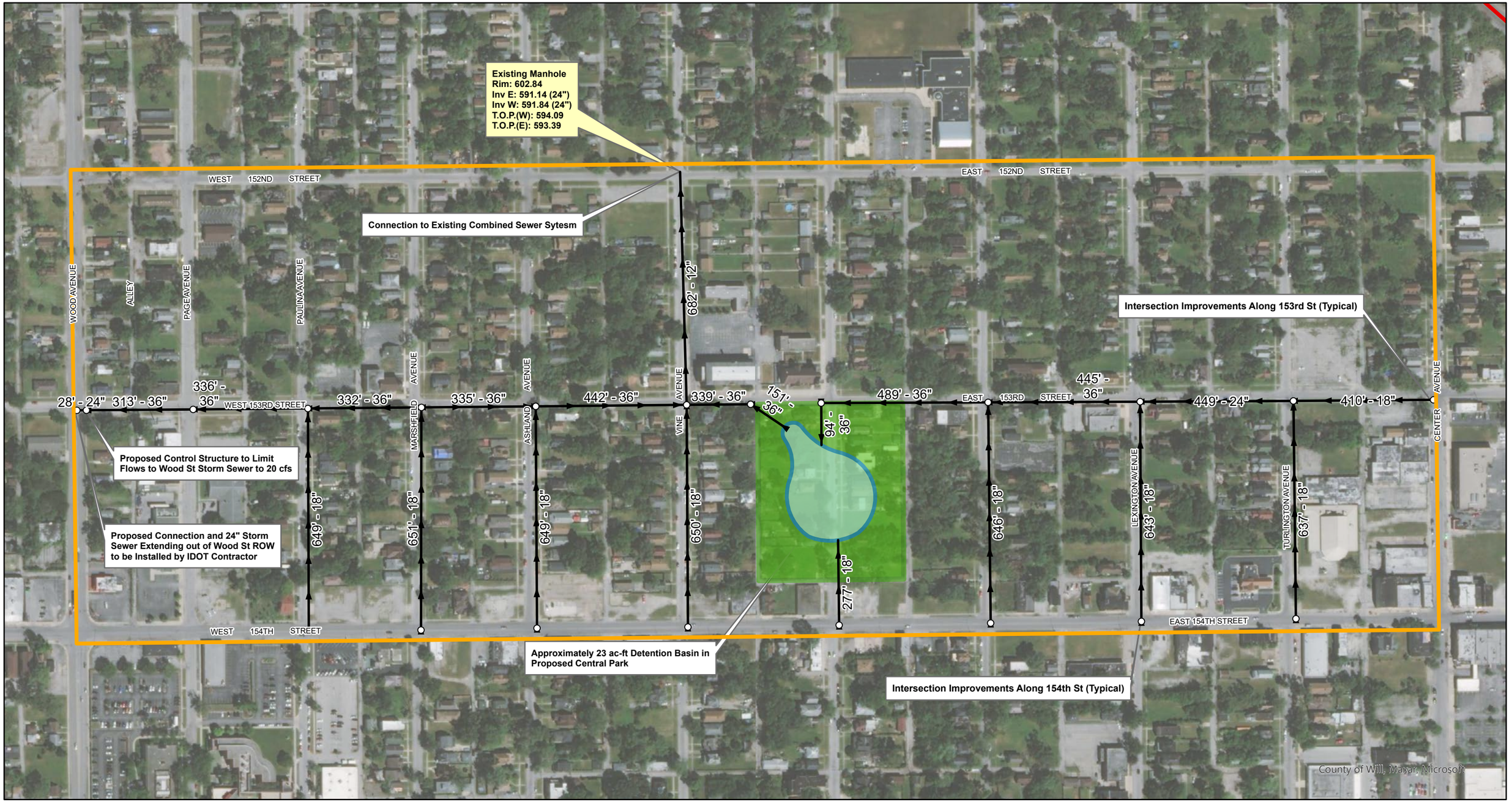


Figure 6: Illinois SHPO IIAS Database Map with APE for ground-disturbing activities marked in red. *Illinois State Historic Preservation Office, IIAS Database, accessed August 2024.*





Proposed BRIC Funding Infrastructure Project Area

MWRD City of Harvey BRIC Stormwater Management Project

Legend

- Acquistion Area/Nature Based Solutions Area
- Proposed Manholes
- Proposed Storm Sewers
- Proposed Wet Pond
- Proposed BRIC Funding Infrastructure Project Area

Enclosure #2

Data Source:
Coordinate System:

0 100 200 400
Feet

N

HRGreen

Existing Structure Demolition Plan

MWRD City of Harvey BRIC Stormwater Management Project

Legend

- Parcels To Be Acquired
- Parcels
- Approximate Basin Grading
- Existing Primary Structures To Be Demolished

Enclosure #3

Data Source:
Coordinate System:

0 50 100 200
Feet

N

HRGreen

HRG PLOT: 6:19 PM 1/2/2022 BY: joliver FILE: J:\2020\201365\Design\GIS\MXD\07-122821-Rev_BRIC_Exhibits\ex-010222-DemoPaln.aprx

Illinois Department of Natural Resources
JB Pritzker, Governor • Natalie Phelps Finnie, Director
One Natural Resources Way • Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Cook County
Harvey
Myrtle Avenue, E.153rd to 154th Streets
FEMA
City of Harvey Stormwater Management

PLEASE REFER TO: SHPO LOG #013020624

April 15, 2024

Duane Castaldi
U.S. Department of Homeland Security
Federal Emergency Management Agency
536 S. Clark St., 6th Floor
Chicago, IL 60605-1521

We have reviewed the documentation submitted for the referenced project in accordance with 36 CFR Part 800.4. Based upon the information provided, no historic properties are present within the proposed project area. We, therefore, have no objection to the undertaking proceeding as planned.

Please retain this letter in your files as evidence of compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. This approval remains in effect for two (2) years from date of issuance. It does not pertain to any discovery during construction, nor is it a clearance for purposes of the Illinois Human Remains Protection Act (20 ILCS 3440).

If you are an applicant, please submit a copy of this letter to the state or federal agency from which you obtain any permit, license, grant, or other assistance. If further assistance is needed contact Jeff Kruchten, Principal Archaeologist, at 217/785-1279 or jeff.kruchten@illinois.gov.

Sincerely,

Carey L. Mayer

Carey L. Mayer, AIA
Deputy State Historic
Preservation Officer

Enclosure #4

FEMA Fact Sheet: EMC-2022-BR-012-0015

Questions and Answers: City of Harvey Stormwater Management Project

The City of Harvey, Illinois, in conjunction with the Illinois Emergency Management Agency (IEMA) and the Metropolitan Water Reclamation District (MWRD), has applied for funding through a Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) grant to help alleviate flooding in the city. FEMA is currently reviewing the project application and estimates awarding funds by the end of 2024. The actual award date depends on several factors, some of which are beyond FEMA's control.

In January and February 2024, FEMA mailed a circular to addresses within the project area to provide information about the project and solicit feedback from the public. This Frequently Asked Questions (FAQ) document responds to common questions that have been received since the circular was mailed and provides updates on the project review steps.

The circular and this FAQ are posted on FEMA's website at: https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey.

What is the purpose of this project?

- The purpose of the proposed project is to reduce flood hazards and flood damage as well as improve stormwater drainage for the City of Harvey by constructing a 23 acre-feet naturalized stormwater detention basin along Myrtle Avenue between 153rd and 154th Streets, constructing new storm sewers throughout the project area, and implementing localized storm sewer improvements. The detention pond is envisioned to be a component of a new future community park which will be developed with green infrastructure best management practices to further reduce flooding and promote water quality. The new community park is not included in or part of the proposed project scope of work described above, nor is it being funded by FEMA.

Why is the project needed?

- The project is needed because the City of Harvey currently has a combined sewer system that often gets overrun during heavy rain events. A combined sewer system collects and conveys both stormwater runoff and sanitary sewer flows into a single pipe where it travels to a wastewater treatment plant. During heavy rain events, the combined sewer system becomes overwhelmed by excess water. The resulting hazards and damage include sewer backups into basements, property damage resulting from overland flow into buildings, and nuisance street and yard flooding. The Flood Insurance Rate Map (FIRM) for the City of Harvey shows a large portion of the City is located within the 1-Percent-Annual-Chance floodplain extent. These combined factors increase the need to address flood hazards within the City of Harvey.

How will the project be funded?

- FEMA will provide 70% of the project funds through the BRIC grant program. The MWRD will provide a non-federal share of 30 percent of total project costs. Federal funds are not being used to acquire properties in the proposed detention pond location.

Why was a detention pond with sewer line upgrades selected as the most effective flood mitigation strategy for the City of Harvey?

- The MWRD hired a consultant to study a 2.4-square-mile area within the City of Harvey to evaluate existing flood conditions. As a result of the study, three potential measures were identified: stormwater conveyance, stormwater storage, and a hybrid of both stormwater conveyance and storage. The option of both stormwater conveyance and storage was determined to provide the most benefits to the community.

  Bioswales and rain gardens are both effective green infrastructure solutions but would not adequately address Harvey's flooding because they are smaller and shallower in depth than traditional surface detention ponds, which results in less volume of storage for large rain events.

  Backflow valves help prevent combined sewers that are overwhelmed by storm events from backing up into basements, but do not address overland flooding issues. They also impact the property owners who must maintain them.

Why was the selected block on Myrtle Street chosen as the detention pond location as opposed to other sites that would not require displacement, such as the Dixie Square Mall site or the Lowell-Longfellow School site?

- The area bounded by 152nd Street on the north, Center Street on the east, 154th Street on the south, and Wood Street on the west was one of the areas identified during the study for a potential detention basin. This location is one of the areas in Harvey where significant flooding occurs repeatedly. The basin needs to be located in the general area of Myrtle Avenue between 153rd and 154th Streets to allow flow by gravity into the Illinois Department of Transportation's Wood Street storm sewer system.

  The MWRD and its consultant worked to identify City-owned and vacant parcels to locate the detention basin. The study did not find any alternative locations within the project area that will achieve the same flood control benefits which would not require some residents to be relocated.

  Moving the project to the Dixie Square Mall or Lowell-Longfellow School site would not relieve flooding in the project area identified above. Also, due to utility conflicts, existing topography of the area, and other technical reasons, neither site would be a suitable location to address flooding in the project area.

What safety measures are included in the detention pond design to ensure the safety of residents and visitors from potential hazards?

- The detention basin will have a shallow water safety shelf around the perimeter. The safety shelf is 10 feet wide and approximately 1 foot deep when the basin is at its normal water level. The MWRD will also incorporate other safety measures into the design as necessary to ensure the public's safety.

What resources are available to property owners and residents within the proposed detention pond area?

- The MWRD is working with a relocation consultant to offer relocation assistance and advisory services to impacted property owners and residents. Since acquisition is not being funded by the BRIC grant, FEMA cannot answer questions about relocation assistance. Impacted residents with questions about relocation assistance should contact Relocation Specialist Kim Polk at (708) 374-8539 or kbpolk7@gmail.com.

What is the status of the Federal Environmental review?

- In accord with the Council on Environmental Quality's regulations for complying with the National Environmental Policy Act (NEPA), FEMA has determined the project will require a formal Environmental Assessment. The Environmental Assessment must include an evaluation of project alternatives and a discussion of the potential environmental impacts of the proposed action. Currently, FEMA does not anticipate any impacts to endangered species or wetlands.

What impacts will the project have on Historic or Cultural Resources in the project area?

- The project will require a formal consultation with the Illinois State Historic Preservation Office (SHPO) as required by Section 106 of the National Historic Preservation Act. FEMA is currently evaluating the proposed project and will be issuing a finding to the SHPO.

What is FEMA's responsibility to review this project for compliance with Environmental Justice Executive Order 12898?

- FEMA considers environmental justice (EJ) impacts as required by Executive Order 12898. The executive order directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects on low-income and minority populations.

  FEMA complies with Executive Order 12898 by reviewing a proposed project to identify the presence of low-income and/or minority populations that could be affected by the project. FEMA then analyzes if those populations/communities would bear any disproportionately high and adverse human health or environmental effects from the project's implementation.

  FEMA has determined an Environmental Assessment (EA) is necessary to review this project for compliance with Executive Order 12898.

Public Participation

FEMA strongly encourages public participation during the review of this proposed project. Options for providing feedback include mail, email, and voicemail via the contact information shared below.

Duane Castaldi
Regional Environmental Officer FEMA Region 5
Department of Homeland Security
536 South Clark Street, 6th floor
Chicago IL 60605
fema-r5-environmental@fema.dhs.gov
Voicemail: 312-408-5549

Mitchell Troup
Hazard Mitigation Division FEMA Region 5
Department of Homeland Security
536 South Clark Street, 6th floor
Chicago IL 60605
Mitchell.Troup@fema.dhs.gov
Voicemail: 202-717-0562

Zachary Krug
Hazard Mitigation Section Manager
Illinois Emergency Management Agency
1035 Outer Park
Springfield, IL 62704-4462
Zachary.Krug@illinois.gov
Phone: 217-524-6513

Corean Davis
15320 Broadway Avenue
Harvey, IL 60426
cdavis@cityofharveyil.gov
Phone: 708-210-5300

Daniel Walsh
Metropolitan Water Reclamation District
111 E. Erie
Chicago, IL 60611
WalshD@mwrd.org
Phone: 312-751-3079

Cook County
Harvey
City of Harvey Stormwater Management
Myrtle Ave. between E. 153rd & 154th Streets,
15240 Myrtle Ave. - Ascension-St. Susanna School & Church Complex

FEMA-BRIC #EMC-2022-BR-012-0015, SHPO Log #013020624

October 6, 2024

Rachel Barnhart
U.S. Department of Homeland Security
Federal Emergency Management Agency Region 5
536 S. Clark St., 6th Floor
Chicago, IL 60605-1521

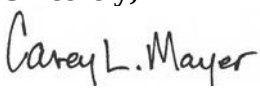
Thank you for your submission archaeological and architectural surveys for the proposed Building Resilient Infrastructure in Communities (BRIC) grant project in Harvey, which we received on 9/13/24 (SHPO log # 013020624). Because this project is receiving funding from the Federal Emergency Management Agency (FEMA), our comments are required by Section 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C. § 306108 (Act), and its implementing regulations (36 CFR Part 800).

Our staff have reviewed the submitted reports and concur that no historic archaeological properties are known to exist within the project area However, if any archaeological materials are encountered during construction, this office must be notified. This letter is not a clearance for purposes of the Illinois Human Remains Protection Act (20 ILCS 3440).

Additionally, we concur that the Ascension-St. Susanna School and Church Complex is eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C, for its association with Black history and racial integration during the Civil Rights era and for its architectural significance depicting nationally popular institutional architectural styles of the early twentieth century. The period of significance under Criterion A would coincide with the years the complex represented an early local example of desegregation, and the period of significance under Criterion C would encompass the years of construction of the significant buildings in the complex (1919 – church, 1926 –school, 1949 – rectory, and 1957 – convent). Since the proposed project will be across the street from the Ascension-St. Susanna School and Church Complex, we concur that the project will have no adverse effect on the NRHP eligible complex. The project as proposed may proceed.

If the project's scope of work changes from that which has been submitted to and approved by this office, you must email those changes to AnnaMargaret.Barris@Illinois.gov for review and comment. Failure to submit project changes for review and comment may result in an adverse effect determination pursuant to the Act.

Sincerely,



Carey L. Mayer, AIA
Deputy State Historic Preservation Officer

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

FEMA

November 15, 2023

Dr. Kelli Mosteller, Tribal Historic Preservation Officer
Citizen Potawatomi Nation
1601 S. Gordon Cooper Drive
Shawnee, Oklahoma 74801

Re: City of Harvey Stormwater Management
Myrtle Avenue between E. 153rd and E. 154th Streets, Harvey, Cook County, Illinois
FEMA BRIC Project # EMC-2022-BR-012-0015 / 41.611113, -87.652690 / T36N R14E S17,18

Dear Dr. Mosteller:

The Federal Emergency Management Agency (FEMA) recognizes the special and unique legal relationship that exists between the federal government and federally recognized American Indian Tribes (Tribes). FEMA also recognizes that Tribes may attach religious and cultural significance to historic properties located on aboriginal, ancestral, or ceded lands that are not contiguous with reservation lands. For this reason, FEMA consults with Tribes regarding the possible effects of FEMA-funded undertakings on cultural properties of historic or traditional significance, sometimes referred to as Traditional Cultural Properties (TCPs). The purpose of this communication is to provide information regarding the captioned FEMA-funded project and to invite comment on whether the Citizen Potawatomi Nation or other Tribes have interests in the areas potentially affected by this undertaking.

The City of Harvey in Cook County, Illinois, has a history of flooding resulting from overland flow and combined sewer backups into basements. The Metropolitan Water Reclamation District of Greater Chicago and the City propose to use Building Resilient Infrastructure in Communities (BRIC) federal grant funding to implement stormwater management measures to mitigate against potential future flood damages and loss. A hydrologic and hydraulic analysis was conducted to define a project area and develop the proposed measures. The 126-acre project area, shown on the enclosed maps, is delineated by West 152nd Street along the north, Center Avenue along the east, East 154th Street along the south, and Wood Avenue along the west.

The proposed measures are as follows:

- Acquire a total 31 parcels, of which 16 are vacant lots, and demolish the residential buildings on the other 15 lots along Myrtle Avenue between 153rd and 154th Streets for the construction of an approximately 23-ac-ft stormwater detention basin located at 41.611113, -87.652690
- Install approximately 1,887 feet of 18-to-26-inch stormwater sewers along 153rd Street between Myrtle and Center Avenues
- Install approximately 2,276 feet of 24-to-36-inch stormwater sewers along 153rd Street between Myrtle Avenue and Wood Street and install a control structure at the west end
- Install approximately 682 feet of 12-inch low flow stormwater sewer along Vine Avenue from 153rd Street north to the existing combined sewer system at Vine and 152nd Street

- Conduct approximately 4,802 feet of localized stormwater sewer improvements along side streets (Paulina, Marshfield, Ashland, Vine, Myrtle, Loomis, Lexington, and Turlington Avenues) between 153rd and 154th Streets
- Install other ancillary stormwater infrastructure throughout the project area such as catch basins, inlets, and manholes

In accordance with the National Historic Preservation Act and other legislation, FEMA determined that this project constitutes a federally assisted undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. In accord with 36 CFR 800.2(c)(2)(ii), FEMA is providing this opportunity for the Citizen Potawatomi Nation to identify concerns about historic properties that may be affected by this undertaking. The area of potential effects for the proposed detention basin encompasses the parcels on the east and west sides of Myrtle Avenue between E. 153rd Street to the north and E. 154th Street to the south. Due to the scale of the ground disturbing activities and the potential for the discovery of intact archaeological sites and features, FEMA will require that an archaeological survey be conducted within the area of potential effects for the detention basin. The installation of stormwater sewers and associated infrastructure is not included in the survey as this work will be done within previously disturbed existing road rights of way. A survey of above-ground structures will be conducted for the entire project area.

Prior to conducting the archaeology survey, we invite your comments on the potential impacts this undertaking may have on lands traditionally used by or sacred to the Citizen Potawatomi Nation or other Native American groups. We understand the sensitive nature of much of the information regarding TCPs and assure you in advance that any information you provide will be considered privileged and confidential. In order to safeguard TCPs of interest to Native Americans, we are contacting the following Tribes to request information regarding their interest in this undertaking.

- Citizen Potawatomi Nation
- Delaware Tribe of Indians
- Forest County Potawatomi Community of Wisconsin
- Hannahville Indian Community
- Ho-Chunk Nation
- Miami Tribe of Oklahoma
- Pokagon Band of Potawatomi Indians
- Prairie Band Potawatomi Nation
- Shawnee Tribe

Receiving notice of your interest to join the consultation regarding this undertaking or notice of Tribes other than those listed above that may have an interest in this undertaking would improve FEMA's efforts to protect resources that may exist in the areas noted on the enclosures. A response form has been provided for your convenience.

We would appreciate a response by email from your office within thirty (30) days of your receipt of this documentation. If FEMA receives no response from your office within thirty (30) days, we will move forward with the project without comment from the Citizen Potawatomi Nation. If you have any questions or comments, please do not hesitate to contact me at fema-r5-environmental@fema.dhs.gov or at 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Enclosures:

1) USGS Map
2) Project Area Map

Sent by email to cpnthpo@potawatomi.org

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: City of Harvey Stormwater Management
Myrtle Avenue between E. 153rd and E. 154th Streets, Harvey, Cook County, Illinois
FEMA BRIC Project # EMC-2022-BR-012-0015 / 41.611113, -87.652690 / T36N R14E S17,18

☐ The Citizen Potawatomi Nation has no interest in the area potentially affected by the captioned undertaking.

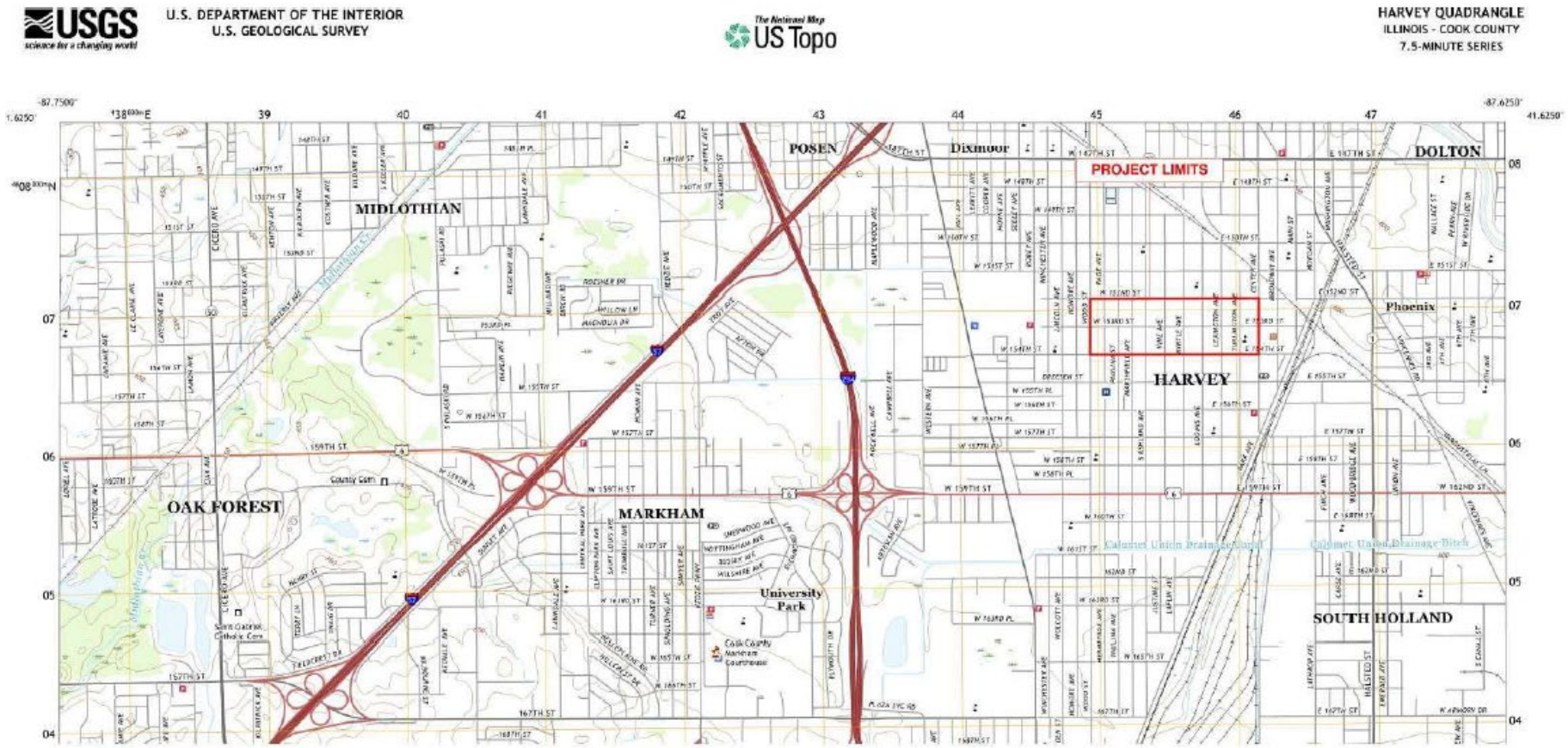
☐ The Citizen Potawatomi Nation has an interest in the area potentially affected by the captioned undertaking. Contact information is provided below.

☐ The Tribal Nations noted below may have an interest in the area potentially affected by this undertaking.

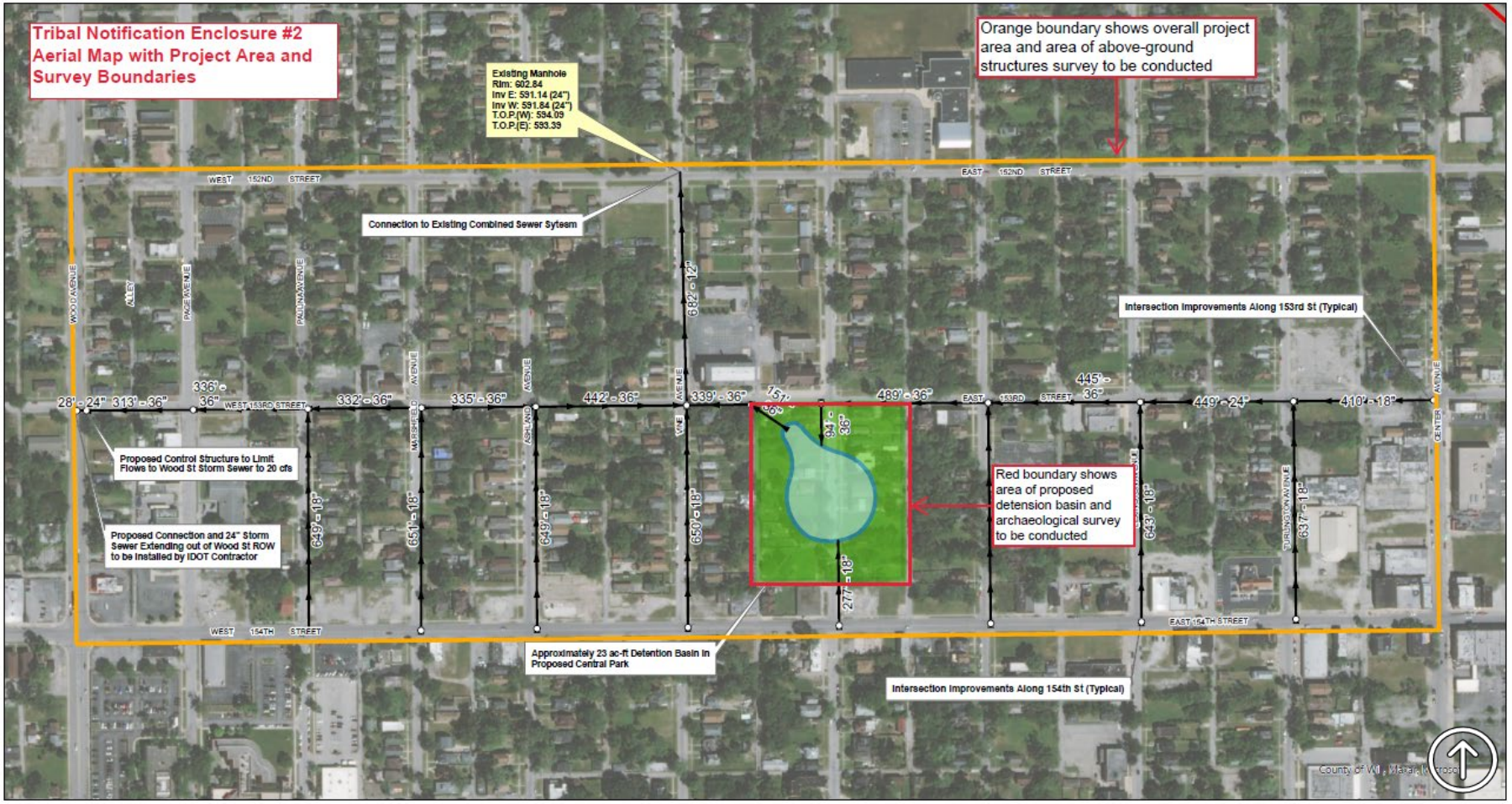
Citizen Potawatomi Nation

Date

Enclosure 1. USGS Map with Project Area outlined in red.



Enclosure 2. Aerial Map with Project Area and Survey Boundaries.



Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

Via email: fema-r5-environmental@fema.dhs.gov

November 19, 2023

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Re: FEMA - Stormwater Management City of Harvey, Cook County, Illinois – Comments of the Miami Tribe of Oklahoma

Dear Mr. Castaldi:

Aya, kweehsitoolaanki – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding the stormwater management in Cook County, Illinois.

The Miami Tribe offers no objection to the above-referenced project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Illinois, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case please contact me at 918-541-7885 or by email at THPO@miamination.com to initiate consultation.

The Miami Tribe requests to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer, I am the point of contact for all Section 106 consultation.

Respectfully,

Logan York

Logan York
Tribal Historic Preservation Officer

Pokégnek Bodéwadmik
POKAGON BAND OF POTAWATOMI
HISTORY & CULTURE CENTER

12/13/2023

Consultant Name: Duane Castaldi
Street Address: 536 South Clark Street, 6th Floor
City: Chicago
State: ILLINOIS
Zip Code: 60605
Phone: 312-408-5549
Email: Duane.Castaldi@fema.dhs.gov

FEMA – Stormwater Management – Harvey, Cook County, IL

Dear Responsible Party:

Migwėtth for contacting me regarding these projects. As THPO, I am responsible for handling Section 106 Consultations on behalf of the tribe. I am writing to inform you that after reviewing the details for the project referenced above, I have made the determination that there will be **No Historic Properties in Area of Potential Effects (APE)** significant to the Pokagon Band of Potawatomi Indians. However, if any archaeological resources are uncovered during this undertaking, please stop work and contact me immediately. Should you have any other questions, please don't hesitate to contact me at your earliest convenience.

Sincerely,

Matthew Bussler

Matthew J.N. Bussler
Tribal Historic Preservation Officer
Pokagon Band of Potawatomi Indians
Office: (269) 462-4316
Cell: (269) 519-0838
Matthew.Bussler@Pokagonband-nsn.gov

U.S. Department of Homeland Security
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, Illinois 60605

FEMA

August 20, 2024

Lakota Hobia, Tribal Historic Preservation Officer
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan
2872 Mission Drive
Shelbyville, Michigan 49344-9580

Re: City of Harvey Stormwater Management
Myrtle Avenue between E. 153rd and E. 154th Streets, Harvey, Cook County, Illinois
FEMA BRIC Project # EMC-2022-BR-012-0015 / 41.611113, -87.652690 / T36N R14E S17,18

Dear Ms. Hobia:

The Federal Emergency Management Agency (FEMA) recognizes the special and unique legal relationship that exists between the federal government and federally recognized American Indian Tribes (Tribes). FEMA also recognizes that Tribes may attach religious and cultural significance to historic properties located on aboriginal, ancestral, or ceded lands that are not contiguous with reservation lands. For this reason, FEMA consults with Tribes regarding the possible effects of FEMA-funded undertakings on cultural properties of historic or traditional significance, sometimes referred to as Traditional Cultural Properties (TCPs). The purpose of this communication is to provide information regarding the captioned FEMA-funded project and to invite comment on whether the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan or other Tribes have interests in the areas potentially affected by this undertaking.

The City of Harvey in Cook County, Illinois, has a history of flooding resulting from overland flow and combined sewer backups into basements. The Metropolitan Water Reclamation District of Greater Chicago and the City propose to use Building Resilient Infrastructure in Communities (BRIC) federal grant funding to implement stormwater management measures to mitigate against potential future flood damages and loss. A flood study was conducted to define a project area and develop the proposed measures. The 126-acre project area, shown on the enclosed maps, is delineated by West 152nd Street along the north, Center Avenue along the east, East 154th Street along the south, and Wood Avenue along the west.

The proposed measures are as follows:

- Acquire a total 31 parcels, of which 16 are vacant lots, and demolish the residential buildings on the other 15 lots along Myrtle Avenue between 153rd and 154th Streets for the construction of an approximately 23-ac-ft stormwater detention basin located at 41.611113, -87.652690
- Install approximately 1,887 feet of 18-to-26-inch stormwater sewers along 153rd Street between Myrtle and Center Avenues
- Install approximately 2,276 feet of 24-to-36-inch stormwater sewers along 153rd Street between Myrtle Avenue and Wood Street and install a control structure at the west end
- Install approximately 682 feet of 12-inch low flow stormwater sewer along Vine Avenue from 153rd Street north to the existing combined sewer system at Vine and 152nd Street

- Conduct approximately 4,802 feet of localized stormwater sewer improvements along side streets (Paulina, Marshfield, Ashland, Vine, Myrtle, Loomis, Lexington, and Turlington Avenues) between 153rd and 154th Streets
- Install other ancillary stormwater infrastructure throughout the project area such as catch basins, inlets, and manholes

In accordance with the National Historic Preservation Act and other legislation, FEMA determined that this project constitutes a federally assisted undertaking requiring review under Section 106 of the National Historic Preservation Act of 1966, as amended. In accord with 36 CFR 800.2(c)(2)(ii), FEMA is providing this opportunity for the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan to identify concerns about historic properties that may be affected by this undertaking.

The area of potential effects for the proposed detention basin encompasses the parcels on the east and west sides of Myrtle Avenue between E. 153rd Street to the north and E. 154th Street to the south. Due to the scale of the ground disturbing activities and the potential for the discovery of intact archaeological sites and features, FEMA required an archaeological survey within the area of potential effects for the detention basin. The installation of stormwater sewers and associated infrastructure is not included in the survey as this work will be done within previously disturbed existing road rights of way.

A Phase IA archaeological survey was completed in March 2024 within the area of potential effects (APE) for the detention basin by Richard Grubb & Associates, Inc. (RGA). The survey results indicated that the APE has a low potential for pre-Contact and historic archaeological resources. Pedestrian reconnaissance confirmed the APE has been heavily disturbed through construction and demolition of structures and utility installation. No further archaeological survey was recommended.

FEMA originally notified the Tribes listed below with an interest in the project area on November 15, 2023. The Miami Tribe of Oklahoma and the Pokagon Band of Potawatomi Indians responded indicating no concerns.

- Citizen Potawatomi Nation
- Delaware Tribe of Indians
- Forest County Potawatomi Community of Wisconsin
- Hannahville Indian Community
- Ho-Chunk Nation
- Miami Tribe of Oklahoma
- Pokagon Band of Potawatomi Indians
- Prairie Band Potawatomi Nation
- Shawnee Tribe

In preparation of an Environmental Assessment that will be completed for the proposed undertaking, FEMA reviewed our database of Tribes with an interest in the project area in August 2024 and determined the need to notify the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan of the proposed undertaking. We invite your comments on the potential impacts this undertaking may have on lands traditionally used by or sacred to the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan or other Native American groups. We understand the sensitive nature of much of the information regarding TCPs and assure you in advance that any information you provide will be considered privileged and confidential.

Receiving notice of your interest to join the consultation regarding this undertaking or notice of Tribes other than those listed above that may have an interest in this undertaking would improve FEMA's efforts to protect resources that may exist in the areas noted on the enclosures. A response form has been provided for your convenience.

We would appreciate a response by email from your office within thirty (30) days of your receipt of this documentation. If FEMA receives no response from your office within thirty (30) days, we will move forward with the project without comment from the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan. If you have any questions or comments, please do not hesitate to contact me at fema-r5-environmental@fema.dhs.gov or at 312-408-5549.

Sincerely,

Duane Castaldi
Regional Environmental Officer
FEMA Region 5

Enclosures:

1) USGS Map
2) Project Area Map

Sent by email to section106@glt-nsn.gov

++++++++*You may email this page to fema-r5-environmental@fema.dhs.gov* ++++++++

Re: City of Harvey Stormwater Management
Myrtle Avenue between E. 153rd and E. 154th Streets, Harvey, Cook County, Illinois
FEMA BRIC Project # EMC-2022-BR-012-0015 / 41.611113, -87.652690 / T36N R14E S17,18

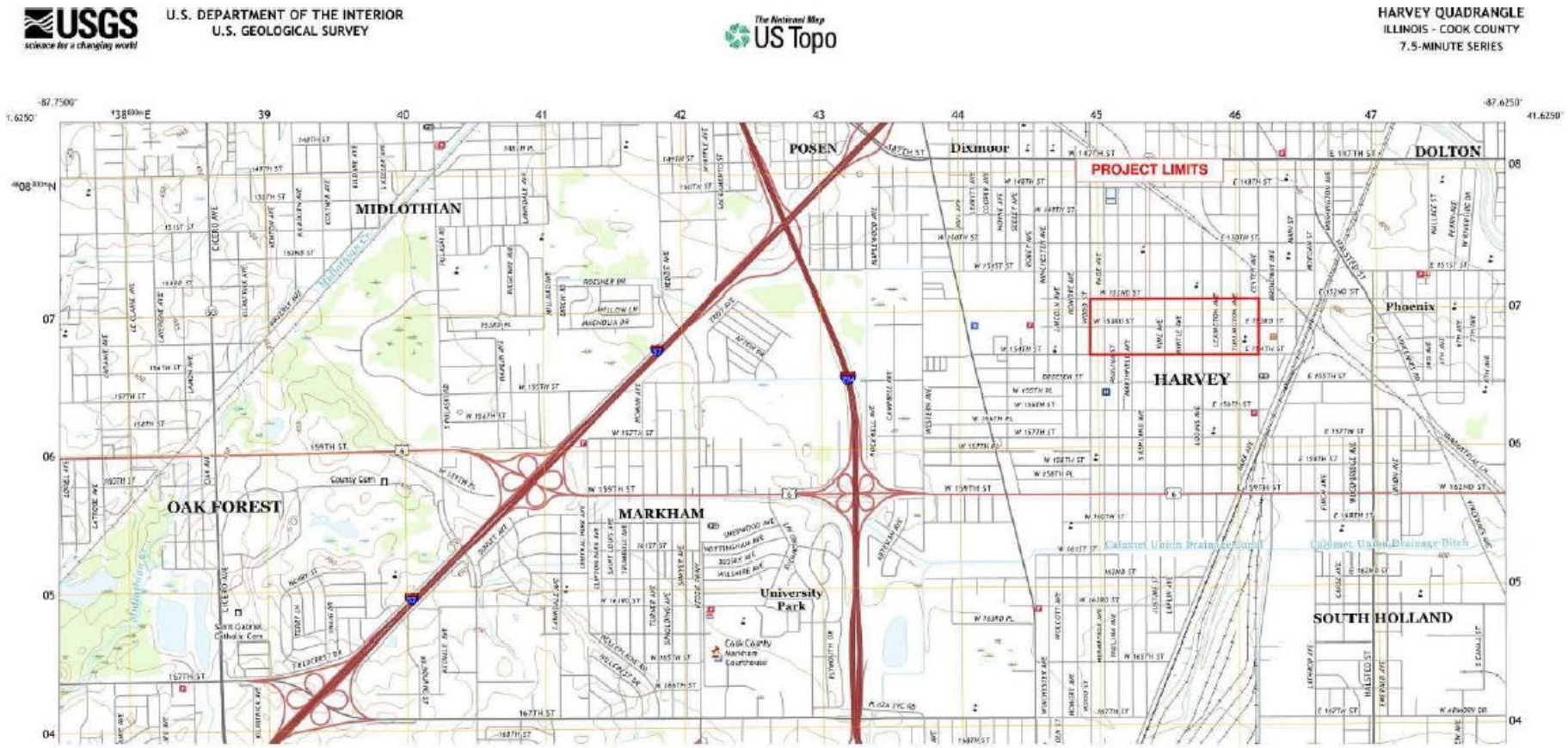
☐ The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan has no interest in the area potentially affected by the captioned undertaking.

☐ The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan has an interest in the area potentially affected by the captioned undertaking. Contact information is provided below.

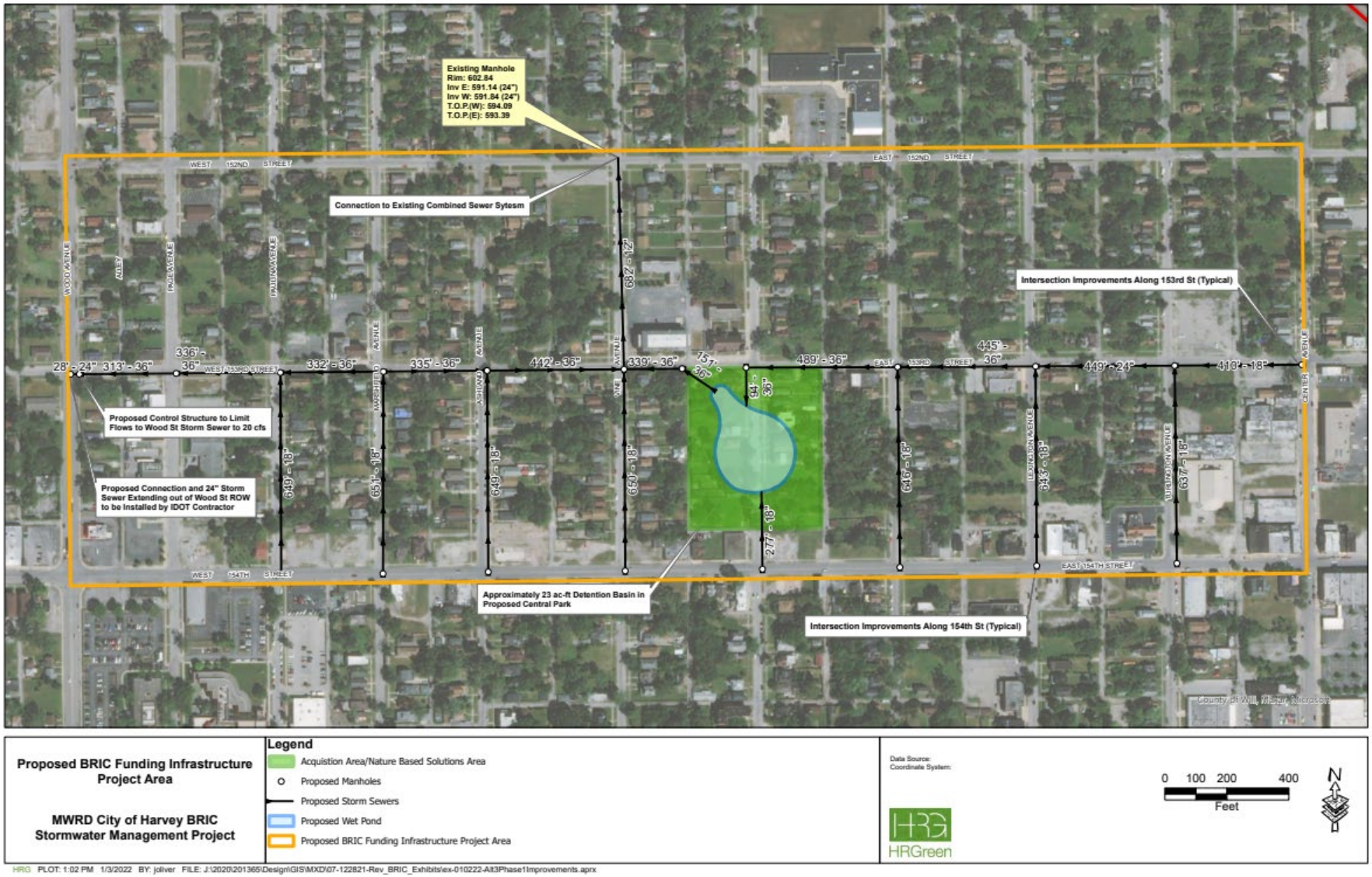
☐ The Tribal Nations noted below may have an interest in the area potentially affected by this undertaking.

Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians of Michigan	Date

Enclosure 1. USGS Map with Project Area outlined in red.



Enclosure 2. Aerial Map showing Harvey Stormwater Management Project Area. Archaeology Phase IA Survey Boundary shown in red.



2872 Mission Drive, Shelbyville, MI 49344 | {p} 269.397.1780 | gunlaketribe-nsn.gov

October 7, 2024

Duane Castaldi
Regional Environmental Officer
FEMA
536 South Clark Street, 6th Floor
Chicago, IL 60605
Fema-r5-environmental@fema.dhs.gov

Re: EMC-2022-BR-012-0015

Dear Mr. Castaldi,

The Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians' Tribal Historic Preservation Office has received the Section 106 consultation request for comments regarding a proposed use of Building Resilient Infrastructure and Communities funding to implement stormwater management measures to mitigate against potential future flood damages and loss in the 126-acre project area in Harvey, Cook County, IL. At present, we are not providing any additional comments. We have not identified any information concerning the presence of any cultural resources significant to the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians within the Area of Potential Effect (APE). This is not to say that such a site may not exist, just that this office does not have any available information for the area(s) at this point in time.

This office will be available to assist you in the future or during this project if there is an unanticipated encounter with human remains, funerary objects, and artifacts. The subsequent identification of additional historic properties affected by the undertaking will require reinitiating Section 106 consultation related to all ongoing and proposed project work and the handling of "discoveries" per the National Historic Preservation Act (NHPA) implementing regulations, 36 CFR Part 800, and, as applicable, the Native American Graves and Repatriation Act (NAGPRA) and its implementing regulations, 43 CFR Part 10. In the event of an encounter with unanticipated human remains, funerary objects, and artifacts we request to be notified within 72 hours. At that time, the Tribe will determine if further consultation is necessary.

Please contact our office with any further questions or requests at 269-397-1780 or Section106@glt-nsn.gov. Also, keep in mind that there may be other Tribal Nations that may have an interest or knowledge of cultural resources within the APE that we may not know about. We thank you for including the Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians in your consultation efforts and planning processes.

Sincerely,

Lakota Hobia

Lakota Hobia
Tribal Historic Preservation Officer
Lakota.Hobia@glt-nsn.gov
Section106@glt-nsn.gov

Appendix D. U.S. Environmental Protection Agency Environmental Justice Screening Report

EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Harvey, IL

0.3 miles Ring around the Area
Population: 4,466
Area in square miles: 1.09

A3 Landscape

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	80%
Spanish	12%
French, Haitian, or Cajun	3%
Other Indo-European	5%
Other Asian and Pacific Island	1%
Total Non-English	20%

COMMUNITY INFORMATION

- Low income: 63 percent
- People of color: 97 percent
- Less than high school education: 18 percent
- Limited English households: 2 percent
- Unemployment: 14 percent
- Persons with disabilities: 16 percent
- Male: 51 percent
- Female: 49 percent
- 72 years — Average life expectancy
- $19,832 — Per capita income
- Number of households: 1,557
- Owner occupied: 40 percent

BREAKDOWN BY RACE

- White: 3%
- Black: 76%
- American Indian: 0%
- Asian: 4%
- Hawaiian/Pacific Islander: 0%
- Other race: 1%
- Two or more races: 2%
- Hispanic: 14%

BREAKDOWN BY AGE

From Ages 1 to 4	6%
From Ages 1 to 18	27%
From Ages 18 and up	73%
From Ages 65 and up	19%

LIMITED ENGLISH SPEAKING BREAKDOWN

Speak Spanish	98%
Speak Other Indo-European Languages	0%
Speak Asian-Pacific Island Languages	2%
Speak Other Languages	0%

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

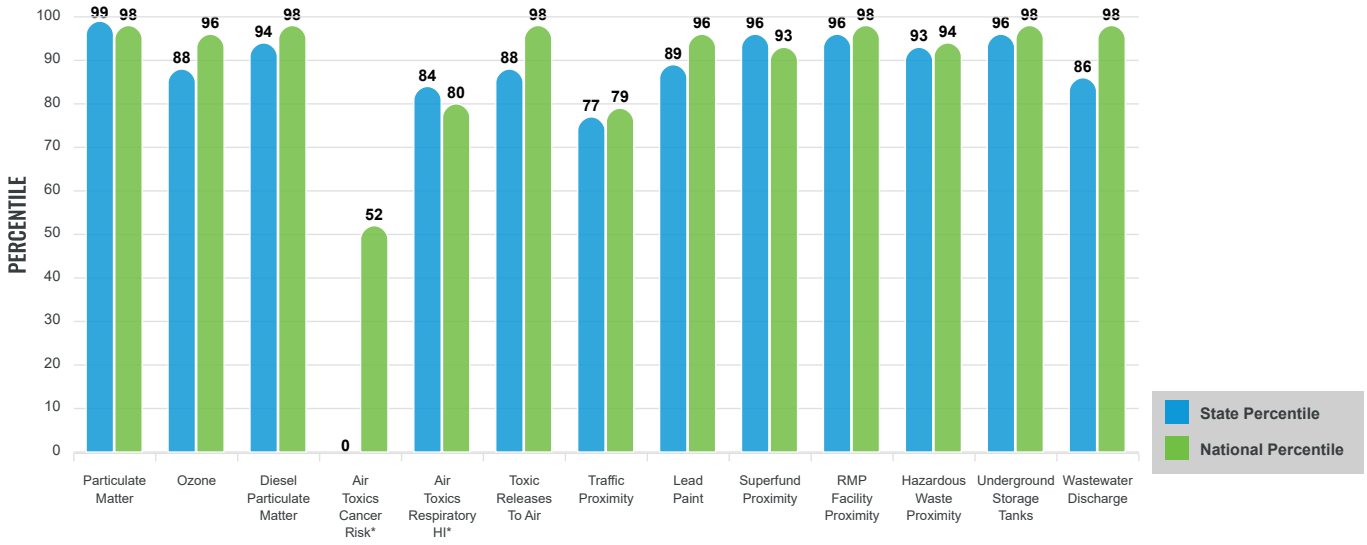
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

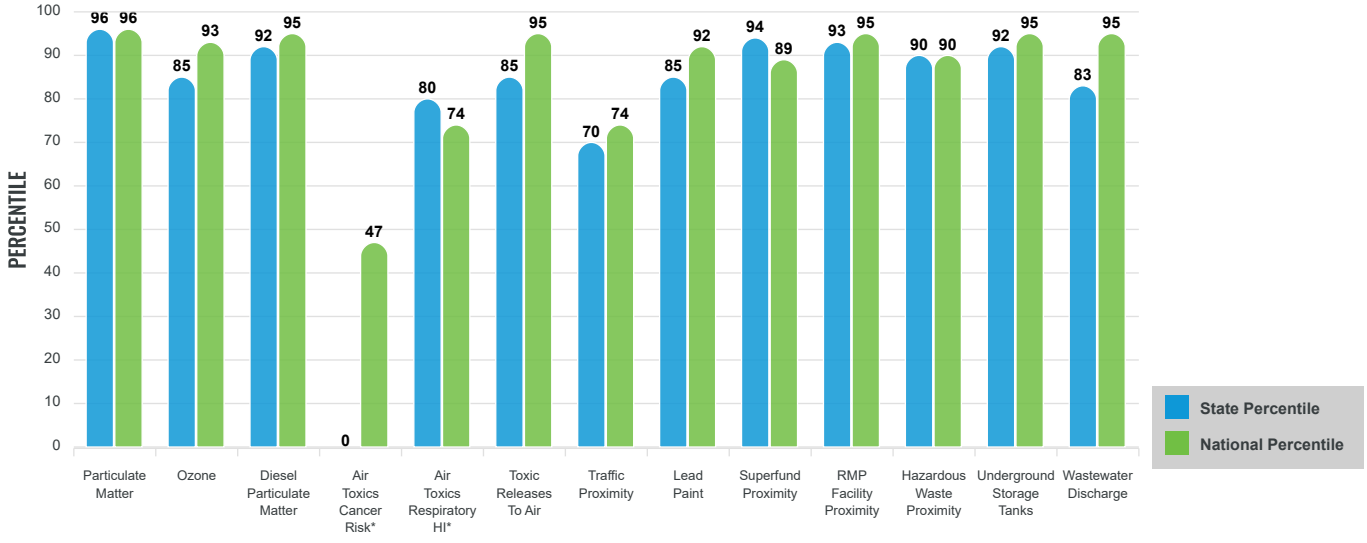
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for 0.3 miles Ring around the Area

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
POLLUTION AND SOURCES					
Particulate Matter (µg/m^3)	10.3	9.44	94	8.08	95
Ozone (ppb)	65.3	63.6	55	61.6	76
Diesel Particulate Matter (µg/m^3)	0.499	0.358	79	0.261	91
Air Toxics Cancer Risk* (lifetime risk per million)	20	24	0	25	5
Air Toxics Respiratory HI*	0.3	0.29	36	0.31	31
Toxic Releases to Air	5,400	6,000	60	4,600	87
Traffic Proximity (daily traffic count/distance to road)	78	200	46	210	50
Lead Paint (% Pre-1960 Housing)	0.57	0.44	62	0.3	78
Superfund Proximity (site count/km distance)	0.097	0.095	79	0.13	65
RMP Facility Proximity (facility count/km distance)	1.5	0.72	87	0.43	93
Hazardous Waste Proximity (facility count/km distance)	2.1	1.7	73	1.9	74
Underground Storage Tanks (count/km^2)	20	8.6	86	3.9	95
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.3	38	55	22	87
SOCIOECONOMIC INDICATORS					
Demographic Index	80%	34%	95	35%	95
Supplemental Demographic Index	24%	14%	89	14%	88
People of Color	97%	39%	92	39%	94
Low Income	63%	29%	92	31%	90
Unemployment Rate	14%	7%	87	6%	90
Limited English Speaking Households	2%	4%	62	5%	64
Less Than High School Education	18%	11%	81	12%	78
Under Age 5	6%	6%	62	6%	64
Over Age 64	19%	17%	66	17%	65
Low Life Expectancy	26%	20%	94	20%	95

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	0
Water Dischargers	3
Air Pollution	12
Brownfields	1
Toxic Release Inventory	2

Other community features within defined area:

Schools	2
Hospitals	1
Places of Worship	17

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	No

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	Yes
Selected location contains an EPA IRA disadvantaged community	Yes

Report for 0.3 miles Ring around the Area

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	26%	20%	94	20%	95
Heart Disease	7.5	5.7	84	6.1	76
Asthma	13	9.7	95	10	96
Cancer	5.1	6.1	26	6.1	26
Persons with Disabilities	15.2%	12.1%	74	13.4%	66

CLIMATE INDICATORS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	11%	11%	68	12%	68
Wildfire Risk	0%	0%	0	14%	0

CRITICAL SERVICE GAPS

INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	24%	14%	83	14%	81
Lack of Health Insurance	13%	7%	86	9%	79
Housing Burden	Yes	N/A	N/A	N/A	N/A
Transportation Access	Yes	N/A	N/A	N/A	N/A
Food Desert	No	N/A	N/A	N/A	N/A

Report for 0.3 miles Ring around the Area

Appendix E. Public Engagement

PUBLIC NOTICE

In conjunction with the Illinois Emergency Management Agency (IEMA), the City of Harvey, Illinois, and the Metropolitan Water Reclamation District of Greater Chicago (MWRD) has applied for Hazard Mitigation Assistance (HMA) funding from the Federal Emergency Management Agency (FEMA) for a stormwater management project. The objective of HMA programs is to fund mitigation measures that reduce the risk of loss of life and property from future hazard events or disasters. The MWRD City of Harvey Stormwater Management project seeks to reduce flooding issues caused by the combined sewer systems backing up during heavy rain events. This project will include building new storm sewers to remove stormwater from the combined sewers and store it in a naturalized detention basin.

A hydrologic and hydraulic analysis was conducted to define the project area in the City of Harvey. The study yielded a proposed location for a 23-acre-foot detention basin that includes a total of 31 parcels, of which 16 are vacant lots. Prior to construction of the detention basin, the City of Harvey intends to use Eminent Domain to acquire and demolish the 15 remaining residential properties in the proposed detention basin area. Section 106 of the National Historic Preservation Act (NHPA) requires FEMA, as a funding agency, to determine if properties are historic (listed in or eligible for listing in the National Register of Historic Places (NRHP); to assess effects projects will have on historic properties; and to seek ways to avoid, minimize, or mitigate adverse effects to historic properties. A cultural resources survey will be conducted to ensure compliance. Additional information is provided at https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey.

Under the National Environmental Policy Act, EO 11988 and EO 11990, public notice is required of any federal actions that may affect floodplains or wetlands. EO 12898, Environmental Justice for Low Income and Minority Populations, requires public engagement and review of federal actions that may have the potential to disproportionately affect minority and low-income populations. Under the National Historic Preservation Act, the public notice is also required for some projects which have the potential to affect historic properties. All necessary permits and approvals will be obtained prior to construction and completion of the project.

Public participation is encouraged. Those interested are invited to comment within 30 days by e-mail to fema-r5-environmental@fema.dhs.gov, by voicemail at 312-408-5549, or by mail to:

Duane Castaldi, Regional Environmental Officer
FEMA Region 5
536 South Clark Street, 6th Floor
Chicago, IL 60605

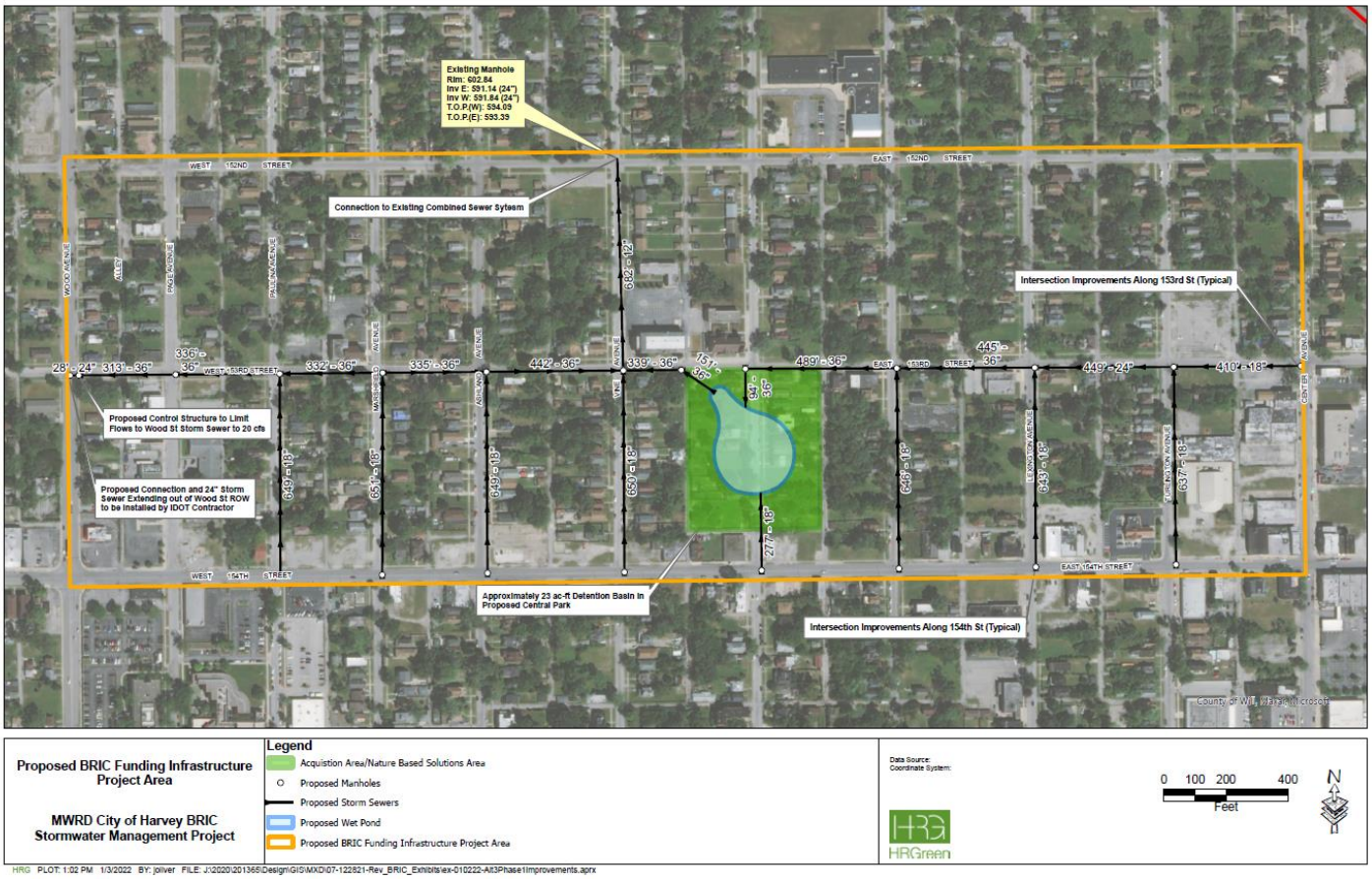
FEMA will consider the comments received in response to this notice in planning the Environmental compliance review for this project, additional notices or engagement may be required.

Notice from the Federal Emergency Management Agency (FEMA)

City of Harvey Stormwater Management Project

The City of Harvey, Illinois, in conjunction with the Illinois Emergency Management Agency (IEMA) and the Metropolitan Water Reclamation District (MWRD), has applied for funding through a Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) grant to help alleviate flooding in the City of Harvey. FEMA is currently reviewing the project application and estimates awarding funds by the end of summer 2024. The actual award date depends on several factors, some of which are beyond FEMA's control.

What is the purpose of this circular? FEMA is sharing this circular with the community to provide basic information about the BRIC grant under review. FEMA is also requesting feedback from the community. This outreach is part of FEMA's project review under the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), and other relevant federal environmental laws and executive orders such as EO 12898 (Environmental Justice) and EO 11988 (Floodplain Management).



FEMA

About the FEMA BRIC Grant

- The proposed FEMA BRIC grant will fund a stormwater management project using nature-based solutions to help alleviate flooding for the City of Harvey. The city currently has a combined sewer system that collects and conveys both rainwater runoff (stormwater) and sanitary sewer flows (wastewater) in a single pipe, which contributes to flooding.
- Grant funds will be used to construct a 23 acre-feet naturalized stormwater detention basin along Myrtle Avenue between 153rd and 154th streets and approximately 1,900 feet of storm sewers between Myrtle Avenue and Central Avenue to convey stormwater to the newly constructed detention basin.
- Additionally, approximately 2,250 feet of storm sewers will be built along E. 153rd Street between Wood Street and Myrtle Avenue to connect with the Illinois Department of Transportation's (IDOT) storm sewer system. A control structure will be installed at the west end of the storm sewer system at 153rd and Wood streets to ensure efficient operation of the storm sewer system and detention pond.
- Approximately 700 feet of low flow storm sewers will be built along Vine Avenue between E. 153rd and 152nd streets to connect the city's existing combined sewer system and maximize the detention basin's stormwater management function.
- Approximately 5,000 feet of localized storm sewer improvements will be implemented along the following side streets between 153rd and 154th streets: Paulina Avenue, Marshfield Avenue, Ashland Avenue, Vine Avenue, Myrtle Avenue, Loomis Avenue, Lexington Avenue, and Turlington Avenue.
- Prior to the proposed project development, MWRD conducted a Hydrologic and Hydraulic (H&H) study to understand the city's problematic drainage areas. The proposed detention pond location was determined from the study's findings because it will provide the most stormwater management benefits for the overall community.
- The MWRD and the City of Harvey will be funding the acquisition and FEMA will fund the demolition of properties within the proposed stormwater detention basin area.
- This project is planned to be completed within 36 months of awarding funds and will reduce flooding damages to approximately 690 structures within the city.
- For BRIC grants, federal funds pay for 75 percent of the project cost and non-federal funds pay for 25 percent. However, for this specific project, MWRD will provide an increased non-federal share of 30 percent of total project costs.
- As part of the project review, cultural resource management professionals will conduct archaeological and architectural surveys within the project area.

Public Participation

FEMA strongly encourages public participation during the review of this proposed project. Options for providing feedback include mail, email, and voicemail via the contact information shared below.

Types of feedback include:

- Questions and/or concerns
- Information about the historical and cultural resources within the project area
- Information, including emails, regarding interested parties such as neighborhood or community organizations that may want to directly receive future public notices.

Included with this circular is a copy of the initial Environmental and Historic Preservation public notice. Further public notices may be found on FEMA's website at: https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey.

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FEMA

Questions and Answers: City of Harvey Stormwater Management Project

The City of Harvey, Illinois, in conjunction with the Illinois Emergency Management Agency (IEMA) and the Metropolitan Water Reclamation District (MWRD), has applied for funding through a Federal Emergency Management Agency (FEMA) Building Resilient Infrastructure and Communities (BRIC) grant to help alleviate flooding in the city. FEMA is currently reviewing the project application and estimates awarding funds by the end of 2024. The actual award date depends on several factors, some of which are beyond FEMA's control.

In January and February 2024, FEMA mailed a circular to addresses within the project area to provide information about the project and solicit feedback from the public. This Frequently Asked Questions (FAQ) document responds to common questions that have been received since the circular was mailed and provides updates on the project review steps.

The circular and this FAQ are posted on FEMA's website at: https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa/environmental-assessment-city-harvey.

What is the purpose of this project?

- The purpose of the proposed project is to reduce flood hazards and flood damage as well as improve stormwater drainage for the City of Harvey by constructing a 23 acre-feet naturalized stormwater detention basin along Myrtle Avenue between 153rd and 154th Streets, constructing new storm sewers throughout the project area, and implementing localized storm sewer improvements. The detention pond is envisioned to be a component of a new future community park which will be developed with green infrastructure best management practices to further reduce flooding and promote water quality. The new community park is not included in or part of the proposed project scope of work described above, nor is it being funded by FEMA.

Why is the project needed?

- The project is needed because the City of Harvey currently has a combined sewer system that often gets overrun during heavy rain events. A combined sewer system collects and conveys both stormwater runoff and sanitary sewer flows into a single pipe where it travels to a wastewater treatment plant. During heavy rain events, the combined sewer system becomes overwhelmed by excess water. The resulting hazards and damage include sewer backups into basements, property damage resulting from overland flow into buildings, and nuisance street and yard flooding. The Flood Insurance Rate Map (FIRM) for the City of Harvey shows a large portion of the City is located within the 1-Percent-Annual-Chance floodplain extent. These combined factors increase the need to address flood hazards within the City of Harvey.

How will the project be funded?

- FEMA will provide 70% of the project funds through the BRIC grant program. The MWRD will provide a non-federal share of 30 percent of total project costs. Federal funds are not being used to acquire properties in the proposed detention pond location.

Why was a detention pond with sewer line upgrades selected as the most effective flood mitigation strategy for the City of Harvey?

- The MWRD hired a consultant to study a 2.4-square-mile area within the City of Harvey to evaluate existing flood conditions. As a result of the study, three potential measures were identified: stormwater conveyance, stormwater storage, and a hybrid of both stormwater conveyance and storage. The option of both stormwater conveyance and storage was determined to provide the most benefits to the community.

  Bioswales and rain gardens are both effective green infrastructure solutions but would not adequately address Harvey's flooding because they are smaller and shallower in depth than traditional surface detention ponds, which results in less volume of storage for large rain events.

  Backflow valves help prevent combined sewers that are overwhelmed by storm events from backing up into basements, but do not address overland flooding issues. They also impact the property owners who must maintain them.

Why was the selected block on Myrtle Street chosen as the detention pond location as opposed to other sites that would not require displacement, such as the Dixie Square Mall site or the Lowell-Longfellow School site?

- The area bounded by 152nd Street on the north, Center Street on the east, 154th Street on the south, and Wood Street on the west was one of the areas identified during the study for a potential detention basin. This location is one of the areas in Harvey where significant flooding occurs repeatedly. The basin needs to be located in the general area of Myrtle Avenue between 153rd and 154th Streets to allow flow by gravity into the Illinois Department of Transportation's Wood Street storm sewer system.

  The MWRD and its consultant worked to identify City-owned and vacant parcels to locate the detention basin. The study did not find any alternative locations within the project area that will achieve the same flood control benefits which would not require some residents to be relocated.

  Moving the project to the Dixie Square Mall or Lowell-Longfellow School site would not relieve flooding in the project area identified above. Also, due to utility conflicts, existing topography of the area, and other technical reasons, neither site would be a suitable location to address flooding in the project area.

What safety measures are included in the detention pond design to ensure the safety of residents and visitors from potential hazards?

- The detention basin will have a shallow water safety shelf around the perimeter. The safety shelf is 10 feet wide and approximately 1 foot deep when the basin is at its normal water level. The MWRD will also incorporate other safety measures into the design as necessary to ensure the public's safety.

What resources are available to property owners and residents within the proposed detention pond area?

- The MWRD is working with a relocation consultant to offer relocation assistance and advisory services to impacted property owners and residents. Since acquisition is not being funded by the BRIC grant, FEMA cannot answer questions about relocation assistance. Impacted residents with questions about relocation assistance should contact Relocation Specialist Kim Polk at (708) 374-8539 or kbpolk7@gmail.com.

What is the status of the Federal Environmental review?

- In accord with the Council on Environmental Quality's regulations for complying with the National Environmental Policy Act (NEPA), FEMA has determined the project will require a formal Environmental Assessment. The Environmental Assessment must include an evaluation of project alternatives and a discussion of the potential environmental impacts of the proposed action. Currently, FEMA does not anticipate any impacts to endangered species or wetlands.

What impacts will the project have on Historic or Cultural Resources in the project area?

- The project will require a formal consultation with the Illinois State Historic Preservation Office (SHPO) as required by Section 106 of the National Historic Preservation Act. FEMA is currently evaluating the proposed project and will be issuing a finding to the SHPO.

What is FEMA's responsibility to review this project for compliance with Environmental Justice Executive Order 12898?

- FEMA considers environmental justice (EJ) impacts as required by Executive Order 12898. The executive order directs federal agencies to identify and address disproportionately high and adverse human health or environmental effects on low-income and minority populations.

  FEMA complies with Executive Order 12898 by reviewing a proposed project to identify the presence of low-income and/or minority populations that could be affected by the project. FEMA then analyzes if those populations/communities would bear any disproportionately high and adverse human health or environmental effects from the project's implementation.

  FEMA has determined an Environmental Assessment (EA) is necessary to review this project for compliance with Executive Order 12898.

Public Participation

FEMA strongly encourages public participation during the review of this proposed project. Options for providing feedback include mail, email, and voicemail via the contact information shared below.

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