MWRD City of Harvey Stormwater Management Project

August 9, 2024

Background

Project Information

Project ID:	EMC-2022-BR-012-0015
Recipient:	Illinois Emergency Management Agency (IEMA)
Subrecipient:	Metropolitan Water Reclamation District (MWRD)
Title:	MWRD City of Harvey Stormwater Management Project
Address:	152nd Street and 154th Street Wood Street and Center Avenue
Locality:	Harvey, Cook County, IL
GPS:	41.611047, -87.652735
PLSS:	S17 T36N R14E

Purpose and Need

The National Environmental Policy Act (NEPA) requires FEMA to evaluate alternatives to the proposed project 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 reviews the alternatives that were previously considered but eliminated from further evaluation.

The objective of the Building Resilient Infrastructure and Communities (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 this project is to reduce future flood hazards and flood damage and protect people and property within the City of Harvey. The City plans to install upgraded stormwater piping and a detention basin to provide increased storm water storage capacity during heavy rain events.

The project is necessary because the City of Harvey has a combined sewer system that often becomes inundated during rain events. This combined sewer collects and conveys both

rainwater runoff and sanitary sewer flows in a single pipe. Per the Flood Insurance Rate Map (FIRM) panels (17031C0731J and 17031C0732J, both effective August 19, 2008), a large portion of the City is located within the 1-Percent-Annual-Chance floodplain extent. The floodplain for the project location is shown in Exhibit 1 and 2. The nature of the flooding in the area ranges from overland flow into buildings, sewer backups into residential basements, and flooding/ponding in neighborhood streets and yards.

Climate change is increasing the frequency of flooding throughout Illinois; over the last half century, the average annual rate of 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 over the next century, contributing to an increased risk of future flooding (U.S. Environmental Protection Agency [EPA] 2014). The Proposed Action is needed to reduce the risk of precipitation-induced flooding within and adjacent to the project area.

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 considered but eliminated from further evaluation.

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, the City would not qualify for FEMA grant funds since no hazard mitigation or flood risk management activities would be proposed. 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. Structures and roadways within and surrounding the project area would remain at risk of inundation and damage. Additionally, flood risk in the project area and vicinity would worsen due to the effects of climate change, as discussed above.

Alternative 2 – Proposed Action

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) proposes to construct a new stormwater system and detention basin in Harvey in Cook County, Illinois (general project coordinates at the center of the detention basin: 41.611047, -87.652735). The combined sewer system would be separated, and stormwater would be stored in the detention basin until it is released into the new stormwater sewer, which would drain into the Illinois Department of Transportation's (IDOT) proposed large diameter storm sewer system, the Wood Street Sewer System. Exhibits 3 and 4 show the location of these activities.

Stormwater Detention Basin

The Proposed Action includes construction of a 23-acre-foot naturalized stormwater detention basin along Myrtle Avenue between 153rd and 154th streets to increase flood storage and reduce flood hazards and damage. The detention basin would be approximately 10 to 15 feet deep at maximum. To ensure the public's safety, MWRD would incorporate safety measures into the design, including construction of a shallow water safety 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. The detention basin would be restored with native wetland vegetation and the area surrounding the detention basin would be reseeded. The system would discharge into the new Wood Street Sewer System.

The proposed location of the detention basin currently includes 31 parcels, of which 16 are vacant and 15 contain residential buildings. MWRD and the City would fund the acquisition of the 31 parcels before implementation of the FEMA-funded project. Thus, acquisition of structures is considered a Connected Action to the Proposed Action and impacts from this acquisition will be analyzed in the Draft Environmental Assessment. The Proposed Action would include the demolition of the 15 structures. Parcels and buildings to be demolished are shown in Exhibit 5

Storm Sewer Upgrades

The Proposed Action would also construct new storm sewers and implement localized storm sewer improvements throughout the project location shown in Exhibits 3 and 4. 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. Approximately 2,250 feet of storm sewers would be constructed along 153rd Street between Wood Street and Myrtle Avenue to connect with the Wood Street Sewer System. A control structure would 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 basin.

Additionally, approximately 700 feet of low flow storm sewers would be installed along Vine Avenue between 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 would 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.

Exhibit 1: Flood Insurance Rate Map (FIRM) panel 17031C0731J

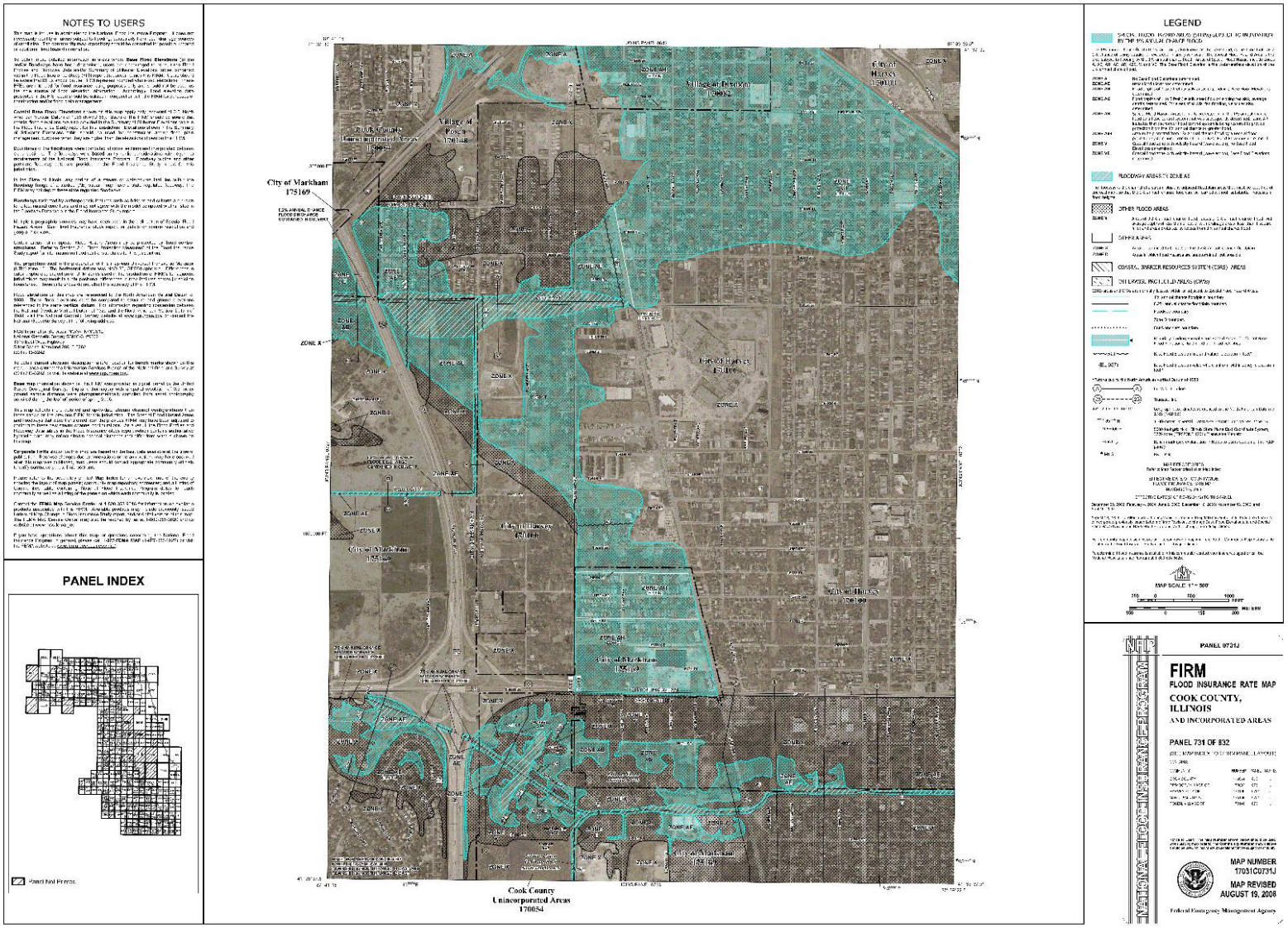


Exhibit 2: Flood Insurance Rate Map (FIRM) panel 17031C0732J

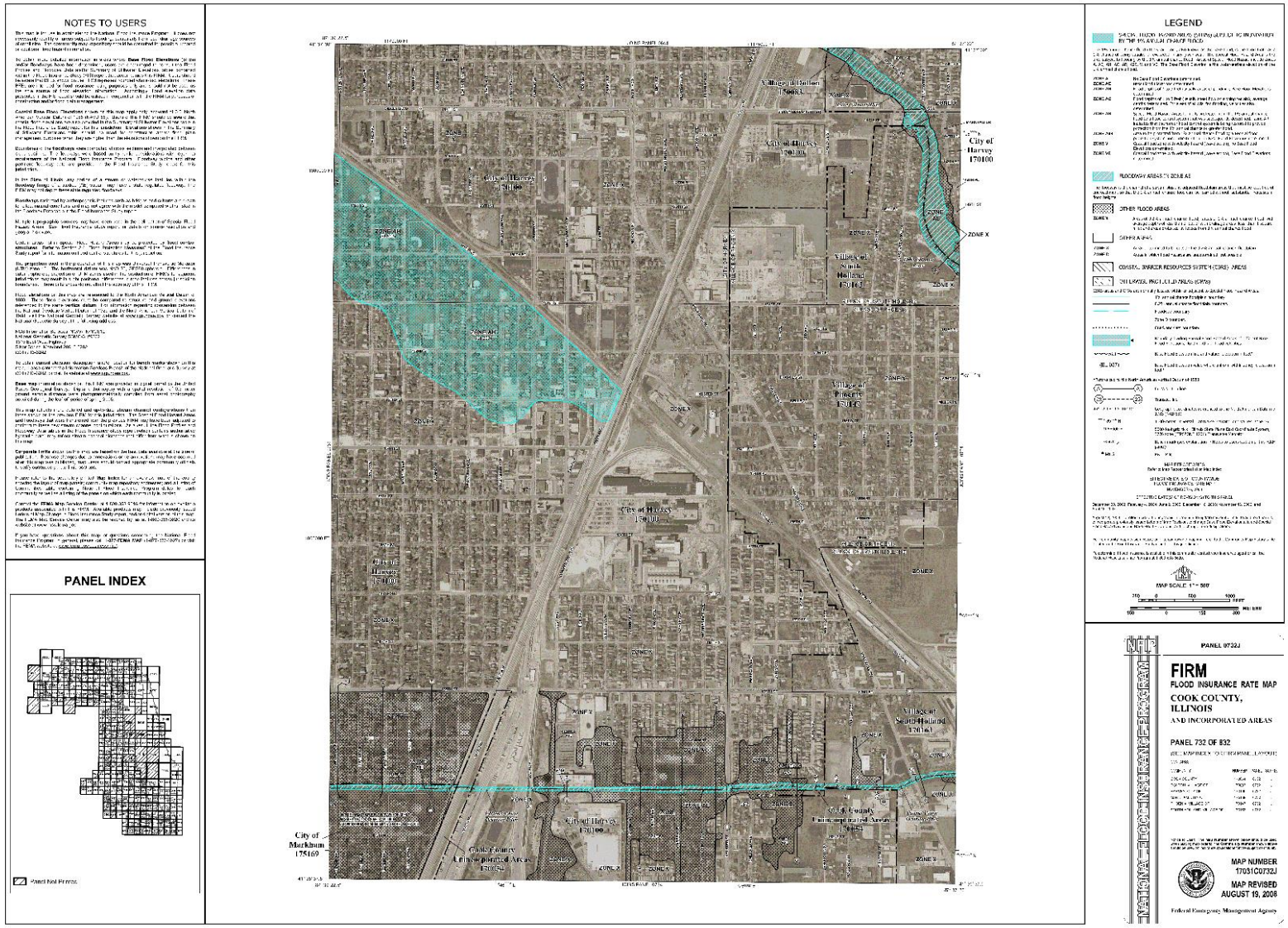


Exhibit 3: Project Location

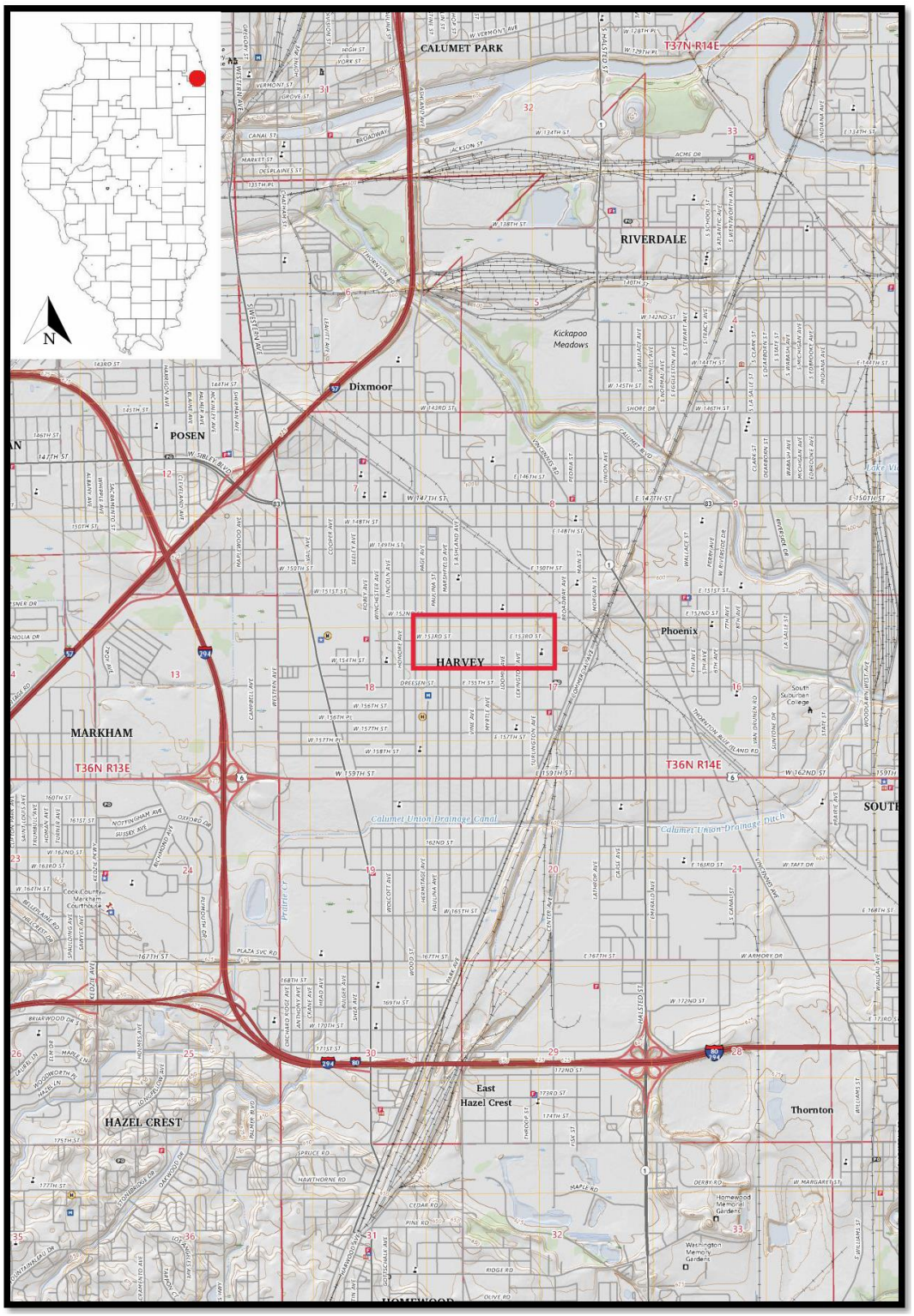
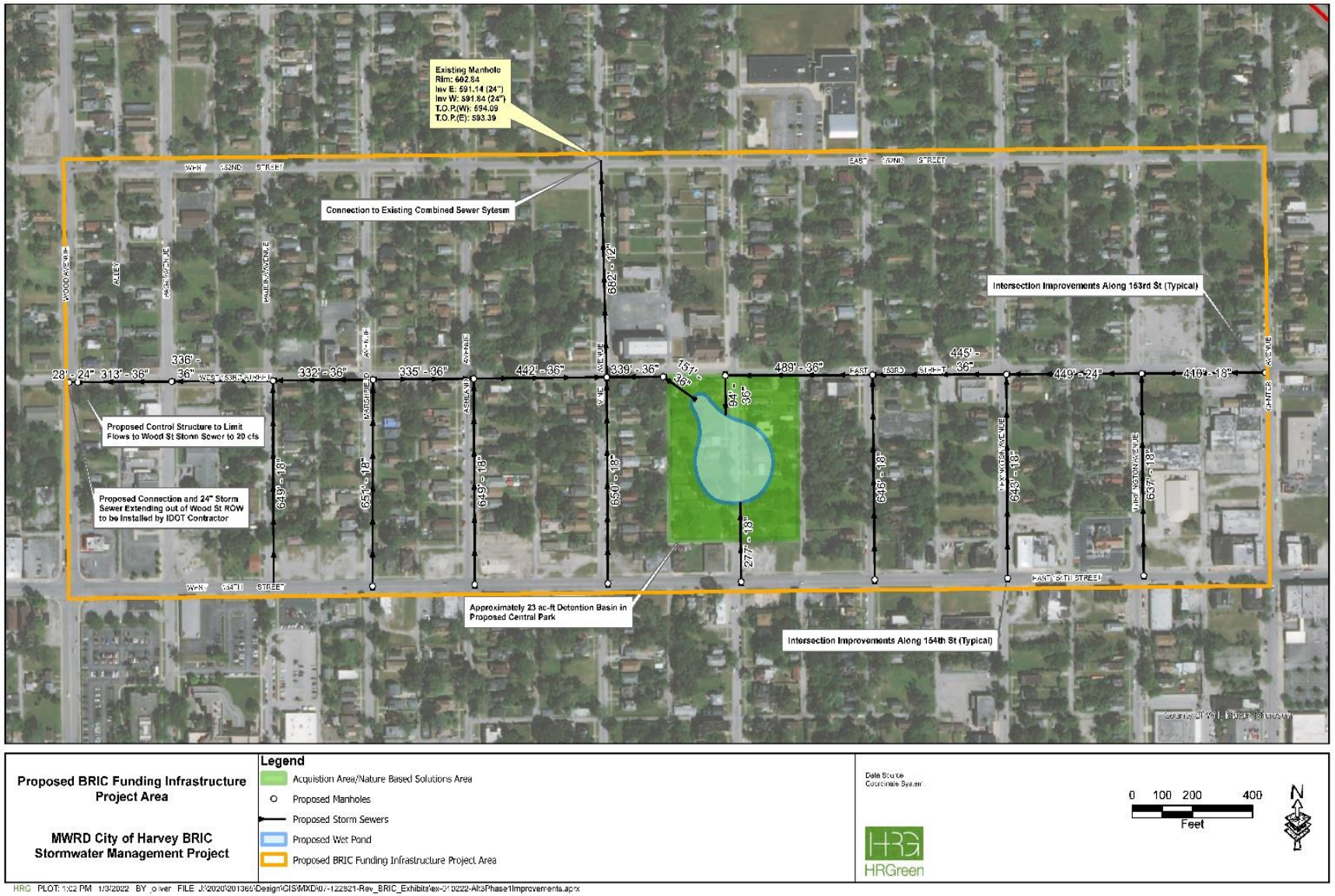


Exhibit 4: Project Location (HR Green Aerial Map "Harvey, IL 2020")



HRG PLOT: 1:02 PM 1/3/2022 BY oliver FILE J:\2020\201365\Design\GIS\MXD\07-122821-Rev_BRIC_Exhibits\ex-010222-Alt3Phase1Improvements.aprx

Exhibit 5: Structure Demolition Plan

Alternatives Considered and Eliminated from Further Analysis

The City of Harvey and MWRD considered additional alternatives based on the objective to reduce surface flooding for the 25-year, 50-year, and 100-year storm events, to maximize reduction of impacted structures from these flood events, and to eliminate or reduce basement sewer backups during a 10-year storm event. These improvements were considered for various locations in the city.

Conveyance Only Improvements

The concept behind a conveyance only alternate is to evaluate if there is a viable alternate that could reduce flooding by installing additional conveyance pipes, relief sewers, and separating storm flows from going into combined sewers via available outlets. Several iterations portraying a conveyance only concept alternative were analyzed. This alternative concept requires extensive coordination with IDOT to fully utilize the proposed 72-inch Wood Street Sewer System. The effectiveness of the concept is directly dependent on the available capacity of the five major trunk sewers installed underneath the CSX railroad bed that facilitates drainage for the project study area. Any proposed conveyance improvements would need to tie into these trunk sewers to accommodate flow downstream into the combined sewer or discharge directly to the 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 provides a marginal reduction in flooding for a 25-year storm event. In addition, it does not meet the City's primary target areas 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 for the project study area.

Storage Only Improvements

An additional alternative focused on strategically implementing detention basins throughout the city to reduce flooding. The implementation of detention basins became a focal point of any alternative addressing flooding due to the lack of capacity in the trunk sewers leaving the project study area as discussed above. This lack of capacity necessitates providing storage to attenuate the peak flows from tributary areas to reduce the stress on existing trunk sewers. However, any detention basin must still tie back into the existing combined sewer system. Therefore, it was determined that a storage only alternative was not a viable alternative by itself to address flooding for the city.

Other Alternatives Considered and Dismissed

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 basins and would therefore provide less flood storage for large rain events as compared to a detention basin. Further, measures would not address sewer overflows from combined sewers. Thus, this alternative was dismissed from further consideration.

MWRD also 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 owners. Thus, this alternative was dismissed from further consideration.

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 would not require some displacement.

Affected Environment

The Proposed Action would occur in a highly urbanized area. Stormwater improvements would occur in and under existing roads, utilities, pipes, and sewers as well as within existing road rights of way. The detention basin would be constructed where residential structures and yards currently exist.

Preliminary Screening of Environmental Laws and Executive Orders:

- Bald and Golden Eagle Protection Act (BGEPA)
- Clean Water Act (CWA)
- Clean Air Act (CAA)
- Coastal Barrier Resources Act (CBRA)
- Coastal Zone Management Act (CZMA)
- Endangered Species Act (ESA)
- Farmland Protection Policy Act (FPPA)
- Magnuson-Stevens Fishery Conservation and Management Act
- Migratory Bird Treaty Act (MBTA)
- National Historic Preservation Act (NHPA)
- Wild and Scenic Rivers Act (WSR)
- Resource Conservation and Recovery Act (RCRA)
- State Hazardous Materials and Solid Waste Laws
- Uniform Relocation Assistance and Real Property Acquisition Policies Act
- Executive Order 11988 – Floodplains
- Executive Order 11990 – Wetlands
- Executive Order 12898 – Environmental Justice for Low Income & Minority Populations
- Executive Order 13112 – Invasive Species

- Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments
- Executive Order 13717 - Establishing a Federal Earthquake Risk Management Standard
- Executive Order 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All

Resources Not Present

Based on a preliminary screening of resources and the project's geographic location, resources governed by the following federal laws and executive orders are not present in the project area and therefore do not require further assessment.

- Coastal Barrier Resources Act (CBRA)
- Coastal Zone Management Act (CZMA)
- Farmland Protection Policy Act (FPPA)
- Magnuson-Stevens Fishery Conservation and Management Act
- Wild and Scenic Rivers Act (WSR)
- Executive Order 13717 - Establishing a Federal Earthquake Risk Management Standard

No or Negligible Impacts to Minor Impacts

The Proposed Action is likely to result in no impacts or minor impacts to resources governed by the following federal environmental laws and executive orders. Little to no coordination will be required for these impacts.

- Bald and Golden Eagle Protection Act (BGEPA)
- Clean Water Act (CWA)
- Clean Air Act (CAA)
- Endangered Species Act (ESA)
- Migratory Bird Treaty Act (MBTA)
- National Historic Preservation Act (NHPA)
- Resource Conservation and Recovery Act (RCRA)
- State Hazardous Materials and Solid Waste Laws
- Uniform Relocation Assistance and Real Property Acquisition Policies Act
- Executive Order 11988 – Floodplains
- Executive Order 11990 – Wetlands
- Executive Order 12898 – Environmental Justice for Low Income & Minority Populations
- Executive Order 13112 – Invasive Species
- Executive Order 13175 – Consultation and Coordination with Indian Tribal Governments
- Executive Order 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All

Major Impacts

The Proposed Action is not likely to result in major impacts to any above identified environmental law or executive order. Thus, close coordination with agencies to identify and mitigate potentially significant impacts governed would not be required.

Reasonably Foreseeable Future Actions

The City of Harvey intends to develop a community park in the project vicinity at a future date provided the city is able to secure funding. The detention basin would be a component of the new future community park.

The Proposed Action would connect to the new IDOT Wood Street Sewer System. The Wood Street Sewer System project is currently in construction and includes improvements to the four-lane roadway and installation of a new storm sewer system to address drainage and flooding issues. The IDOT project is underway and estimated to be completed in 2025 (Ramos 2022).

Public Engagement

The Proposed Action has been discussed at several city council meetings, as well as with City of Harvey and MWRD staff, FEMA, and other interested parties. A public notice was posted in the Chicago Tribune on February 23, 2024, and in the Daily Southtown on March 5, 2024. Additionally, FEMA sent a direct mailer to all addresses within and near the project area which 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 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.

To date, FEMA has received 18 individual comments from the public on this project. In response, FEMA prepared a Frequently Asked Questions mailer that will be sent to all properties in the project area and will be posted online at the web address noted above.

The Environmental Assessment will also be posted for the public to review.

References

Ramos, M. 2022. IDOT breaks ground on $94M project to modernize south suburban roadway. Accessed July 23, 2024. https://chicago.suntimes.com/2022/9/8/23343280/idot-project-modernize-wood-street-ashland-avenue-south-suburbs-harvey-dixmoor-riverdale

US Environmental Protection Agency (EPA). 2014. Climate Change Impacts in the Midwest. Accessed July 22, 2024. https://climatechange.chicago.gov/climate-impacts/climate-impacts-midwest.

US Geological Survey topoBuilder Application. Topographic Geologic Map of Illinois. Accessed on May 30, 2024. https://www.usgs.gov/programs/national-geospatial-program/topobuilder

HR Green, Inc. "Preliminary Design Report." *Flood Relief for Residential Area near 147th Street and Wood Street in Harvey, Illinois.* August 16, 2022.

Distribution List

The Tribal Nations and agencies listed below have been provided a copy of this document or will be notified of this project through FEMA Region 5 standard consultation procedures as directed under individual environmental laws and executive orders. Other state and local agencies and interested parties including local officials and organizations not listed below will also be provided with this scoping document.

- Local, county, state agencies/entities:
  - City of Harvey
  - Metropolitan Water Reclamation District of Greater Chicago
  - Cook County Division of Transportation
  - Cook County Emergency Management and Regional Security
  - Illinois Commerce Commission
  - Illinois Department of Natural Resources – Water Permitting
  - Illinois Department of Transportation
  - Illinois Emergency Management Agency & Office of Homeland Security
  - Illinois Environmental Protection Agency
  - Illinois State Historic Preservation Office
  - Illinois NFIP State Coordinator
- Federal agencies:
  - US Army Corps of Engineers, Chicago District
  - USDA Natural Resources Conservation Service
  - US Environmental Protection Agency, Region 5
  - US Fish and Wildlife Service, Illinois-Iowa Field Office
  - United States Housing and Urban Development
- Tribal Nations:
  - Bureau of Indian Affairs
  - 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
  - Shawnee Tribe

Provide Comments

Those interested in providing comments on this document, which can be found at https://www.fema.gov/emergency-managers/practitioners/environmental-historic/nepa-repository, may respond within 30 days of publication by either mail or email as noted below. Include your name and contact information along with your comments.

Respond by Mail

Federal Emergency Management Agency, Region 5
c/o Duane Castaldi, Regional Environmental Officer
536 South Clark Street, 6th Floor
Chicago, IL 60605-1521

Respond by Email

fema-r5-environmental@fema.dhs.gov.