

NORTH HAMILTON CROSSING PROJECT

ENVIRONMENTAL ASSESSMENT

ODOT PID 115755
Butler County, Ohio

Submitted Pursuant to the National Environmental Policy Act 42 USC §
4332(2)(c) by:

The Ohio Department of Transportation

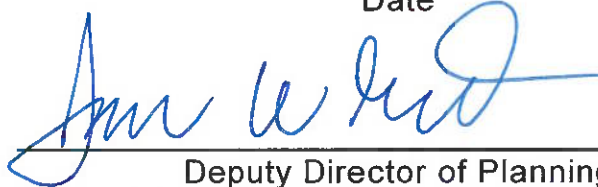
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Administrator of Office of Environmental Services
Ohio Department of Transportation

8/14/2026

Date



Deputy Director of Planning
Ohio Department of Transportation

8/14/2026

Date

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by ODOT pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated May 8, 2026, and executed by FHWA and ODOT, and the Memorandum of Understanding dated December 3, 2024, and executed by FRA and ODOT.

ENVIRONMENTAL ASSESSMENT

**North Hamilton Crossing (NHX)
PID 115755
Butler County**



Prepared for:



**Department of
Transportation**

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Prepared by:



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Acronyms / Abbreviations

Acronym / Abbreviation	Full Name
ACS	American Community Survey
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
AADT	Annual Average Daily Traffic
APE	Area of Potential Effects
BCRTA	Butler County Regional Transit Authority
BCTID	Butler County Transportation Improvement District
CAA	Clean Air Act
CIA	Community Impact Assessment
CMS	Construction and Materials Specifications
CFR	Code of Federal Regulations
DBH	Diameter at Breast Height
DRF	Determination Request Form
EA	Environmental Assessment
eDNA	Environmental DNA
EJ	Environmental Justice
EJAR	Environmental Justice Analysis Report
EO	Executive Order
EOP	Edge of Pavement
EPA	Environmental Protection Agency
ESR	Ecological Survey Report
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
FS	Feasibility Study
GMBVA	Great Miami Buried Valley Aquifer
L&D	Location and Design
LEP	Limited English Proficiency
LF	Linear Feet
LOS	Level of Service
LWCF	Land and Water Conservation Fund
MALAA	May Affect, Likely to Adversely Affect

Acronym / Abbreviation	Full Name
MANLAA	May Affect, Not Likely to Adversely Affect
MCD	Miami Conservancy District
MOU	Memorandum of Understanding
MPH	Miles Per Hour
MSAT	Mobile Source Air Toxics
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHS	Neighborhood Housing Services of Hamilton, Inc
NHX	North Hamilton Crossing
NPL	National Priorities List
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NSA	Noise Sensitive Area
OAC	Ohio Archaeological Council
ODNR	Ohio Department of Natural Resources
ODOT	Ohio Department of Transportation
OES	Office of Environmental Services
OHI	Ohio Historic Inventory
OH-PBO	Ohio Programmatic Biological Opinion
OKI	Ohio-Kentucky-Indiana Regional Council of Governments
ORC	Ohio Revised Code
OWJ	Official with Jurisdiction
P&N	Purpose and Need
PCS	Petroleum Contaminated Soil
PDP	Project Development Process
PEP	Public Engagement Plan
PMRT	Potential Maternity Roost Tree
RAP	Relocation Assistance Program
RMR	Regulated Materials Review
ROD	Record of Decision
SHPO	State Historic Preservation Office
SS	Supplemental Specifications
SSA	Sole Source Aquifer
STIP	Statewide Transportation Improvement Program

Acronym / Abbreviation	Full Name
SWH	Suitable Wooded Habitat
TIP	Transportation Improvement Plan
TNM	Traffic Noise Model
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WWH	Warmwater Habitat

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Executive Summary

The City of Hamilton (City or Hamilton), in cooperation with the Butler County Transportation Improvement District (BCTID) and the Ohio Department of Transportation (ODOT), developed the North Hamilton Crossing (NHX) project to address longstanding transportation challenges in the northern part of Hamilton, Ohio. These challenges include congestion from increasing traffic volumes, a higher-than-average crash rate, delays at train crossings, and bridge congestion on existing Great Miami River crossings.

The proposed NHX project is a four-lane, boulevard-style roadway which extends approximately 2.5 miles between North B Street on the west side of the Great Miami River and SR 129 at Hampshire Drive on the east side. The NHX project includes a new bridge over the Great Miami River, a grade-separated crossing of the CSX/Norfolk Southern rail line, sidewalks, a shared-use path, lighting, landscaping, and aesthetic improvements.

This Environmental Assessment (EA) was prepared in compliance with the National Environmental Policy Act (NEPA) and ODOT NEPA guidance. The EA describes the project purpose and need, development of the alternatives, impacts of each alternative, mitigation measures, public involvement and agency coordination, the Preferred Alternative recommendation, and next steps.

Purpose and Need: The NHX project is needed to:

- Improve east-west connectivity
- Address insufficient river and grade-separated railroad crossings
- Reduce congestion and improve safety
- Support economic growth
- Improve bike/pedestrian connectivity and multimodal linkage

Alternatives: Eighteen preliminary alternatives were evaluated through a Feasibility Study (FS) and refined based on engineering, environmental, and public input. Four Build Alternatives were advanced for detailed study, along with the No Build Alternative. Build Alternatives were further developed and evaluated within the West, Central, and East Sections of the NHX study area. Changes were documented in an FS Amendment approved on January 6, 2025. The best route within each section was selected, and when connected end to end comprise the Preferred Alternative.

Preferred Alternative: The Preferred Alternative includes the following routes by Section:

- West Section (North B Street to US 127): Gordon/Rhea Crossing
- Central Section (US 127 to North Fair Avenue): Vine Street Connection
- East Section (North Fair Avenue to SR 129): East Connection

The Preferred Alternative meets the project purpose and need, avoids impacts to community resources including L.J. Smith Park and Combs Park, historic districts (German Village, Greenwood Cemetery), and farmlands, minimizes impacts to floodplains, and utilizes a route (Heaton Street) that already carries through traffic, reducing traffic impacts on other local streets. The impacts associated with the Preferred Alternative are described in **Table ES-1**.

Phasing and Funding: Construction of the NHX project will be a multi-year, phased effort due to its scale and cost. Construction is expected to progress from west to east, though sequencing may shift based on funding availability for specific sections. The total estimated cost for the Preferred Alternative is \$124.5 million, including \$14.7 million for design, \$11.4 million for right-of-way, and \$98.4 million for construction¹.

Environmental Impacts and Mitigation: Potential impacts across multiple resource areas were evaluated. For each resource, avoiding or minimizing impacts were considered. When impacts were unavoidable, mitigation measures were identified to reduce the extent or severity of those impacts. **Table ES-1** summarizes the No Build and Preferred Alternative impacts and proposed mitigation and enhancement measures.

Table ES-1. Summary of Environmental Impacts and Mitigation/Enhancement Measures for the Preferred Alternative

Environmental Resource	No Build Alternative	Preferred Alternative	Mitigation and Enhancements
Land Use (Section 4.1.1.1)	No impacts	Consistent with planned development and local land use plans	None
Community Characteristics (Section 4.1.1.2)	No impacts	Traverses Prospect Hill, North End, Dayton Lane, and East End neighborhoods No change to the demographic composition or defining characteristics of communities within the NHX study area	Replacement housing options within the North End neighborhood, including rental options, homebuyer and renter education Safety and aesthetic improvements including sidewalks, crosswalks and shared-use paths, pedestrian crossings, pedestrian signals, and lighting
Right-of-way/ Residential Relocations/ Business Relocations (Section 4.1.1.3)	No impacts	55–65 households 7 businesses ± 25 acres permanent right-of-way ± 12 acres temporary right-of-way ± 325 parcels impacted	Right-of-way acquisition and relocations to be conducted in accordance with ODOT-Office of Real Estate procedures, Titles II and III of the Federal Uniform Relocation and Real Property Acquisitions Policy Act of 1970, the Surface Transportation and Uniform Relocation Assistance Act of 1987, and 49 CFR Part 24 Relocation Assistance Program for residential/commercial displacements Replacement housing within the North End neighborhood, including new build homes, rehabilitation of existing homes, and rental options Housing-related financial literacy and homebuyer and renter education

¹ Cost estimates are presented in 2026 equivalent dollars. It should be noted that unit costs spiked in 2026 related to global instability of the oil market.

Environmental Resource	No Build Alternative	Preferred Alternative	Mitigation and Enhancements
Community Resources/ Access/ Cohesion (Section 4.1.1.4)	No impacts	Impacts to Moser Park (see Section 4.4)	Mitigation/enhancement measures for Moser Park (Section 4.4)
		Right-of-way/access impacts to Minnick's Drive Thru, Butler County Fairgrounds, Fairwood Elementary, and Sojourner Recovery Services	Sidewalks, crosswalks, shared-use paths, and lighting to improve pedestrian and non-motor vehicle users' access to residential areas, schools, and other facilities
		No direct impacts to religious institutions	None
		Increased traffic along the route, including adjacent to Fairwood Elementary School, Moser Park, and Greenwood Cemetery	Coordination with City's Board of Education to identify measures to promote safety for students traveling to and from school Sidewalks, crosswalks, shared-use paths, and lighting A pedestrian crossing with a Pedestrian Hybrid Beacon signal for the crosswalk at the existing intersection with Lockwood Avenue near Fairwood Elementary School A mid-block crossing with a Rectangular Rapid Flashing Beacon at Moser Park near the existing intersection with North 7th Street, and at Greenwood Cemetery between the existing intersections with Miami Street and North 11th Street Bump-outs on side streets to shorten crossing distances Leading pedestrian intervals at signalized intersections
		Minor neighborhood connectivity/cohesion effects	Aesthetic improvements, lighting, and landscaping Sidewalks, crosswalks and shared-use paths to improve pedestrian and non-motor vehicle users' access to residential areas, schools, and other facilities Safety improvements associated with closure of at-grade rail crossing Replacement housing options within the North End neighborhood, including new build homes, rehabilitation of existing homes, and rental options to allow residents to stay in the community

Environmental Resource	No Build Alternative	Preferred Alternative	Mitigation and Enhancements
		Increased walking distances (900 feet) to Food Town and Hamilton Christian Family Center in North End neighborhood	Aesthetic improvements, lighting, and landscaping Sidewalks, crosswalks and shared-use paths to improve pedestrian and non-motor vehicle users' access to residential areas, schools, and other facilities Safety improvements associated with closure of at-grade rail crossing
		Improved emergency services, pedestrian and bicycle access	Sidewalks, crosswalks, shared-use paths, and lighting to improve pedestrian and non-motor vehicle users' access to residential areas, schools, and other facilities Safety improvements associated with closure of at-grade rail crossing
Visual Resources (Section 4.1.2)	No impacts	Improved aesthetics with boulevard design, new lighting and landscaping	Decorative form liners and aesthetic treatments for retaining walls and bridge Bridge aesthetic treatments selected to reflect existing local infrastructure and maintain visual cohesion with nearby river crossings Decorative concrete barriers including a 2-foot parapet with vandal fencing and decorative walls between 3-5 feet high in place of traditional guardrails and/or bike path fencing at grade-separated rail crossing
Farmlands (Section 4.1.3)	No impacts	No impacts	None
Regulated Materials (Section 4.1.4)	No impacts	Impacts to nine properties with regulated materials review (RMR) concerns identified during the RMR screening / RMR assessments	RMR Investigations for J&J Towing (RM-W13), Hamilton Electrical Substation (RM-W18), Kornylak Corp (RM-011), Professional Motor Services (RM-013), Connaughton Welding & Fencing (RM-014), 5-Points Auto Sales (RM-025), and AMD Auto Sales (RM-028) Construction plan notes ² to address materials management during construction at Hamilton Power Plant (RM-W19) and Niles Tool Works (RM-012)
Air Quality (Section 4.1.5)	No impacts	No significant emissions increase Temporary construction impacts addressed in Section 4.7	None
Noise (Section 4.1.6)	No impacts	114 impacted residences 21 impacted campsites (Butler County Fairgrounds) 1 impacted baseball field (Fairwood Elementary School) Temporary construction impacts addressed in Section 4.7	Noise barriers not feasible/reasonable

² Construction plan notes are instructions included in the construction plans that communicate project requirements to the contractor. In this context, they are used to ensure that measures to avoid, minimize, or mitigate environmental impacts are properly implemented during construction.

Environmental Resource	No Build Alternative	Preferred Alternative	Mitigation and Enhancements
Streams/ Wetlands/ Ponds (Section 4.2.1)	No impacts	490 linear feet stream 0.5 acre wetland 0.63 acre pond	Mitigation as required by Section 404/401 permits Best management practices for sediment and erosion control and water quality treatment
Terrestrial Habitat (Section 4.2.2)	No impacts	6.65 acres forest 25 acres other undeveloped land	Seasonal tree clearing restrictions, habitat preservation (Section 4.2.3)
Threatened/ Endangered Species (Section 4.2.3)	No impacts	<u>Federally protected species</u> Indiana bat/Northern long-eared bat (May Affect, Likely to Adversely Affect) Tricolored bat (May Affect, Not Likely to Adversely Affect) Rayed bean (May Affect, Not Likely to Adversely Affect) Eastern massasauga (no effect) Bald eagle (no effect) <u>State listed species</u> No impact or not likely to impact 3 endangered, 3 threatened, and 1 species of concern	Seasonal tree clearing restrictions Habitat loss mitigation by purchase of credits for habitat preservation
Floodplains/ Hydrology (Section 4.2.4)	No impacts	2.37 acres impacted Minimal rise in flood elevations	Compliance with all applicable federal, state, and local floodplain protection standards Coordination with local floodplain administrators (City, Butler County, Miami Conservancy District) and Federal Emergency Management Agency Floodplain permit obtained prior to construction Floodplain Statement of Findings posted for a minimum 30-day public review Miami Conservancy District permit for work adjacent to levees prior to construction.
Drinking Water (Section 4.2.5)	No impacts	Located over Sole Source Aquifer	Management plan for control/containment of fuels, oils, and other construction materials in accordance with ODOT Construction and Materials Specifications Item 107.19 Construction plan note for spill prevention Design of the new bridge over the Great Miami River will exclude over the rail drainage and scuppers with direct outlet to the river
		One domestic well impacted (Ohio Department of Natural Resources Log No. 217443)	ODOT standard well abandonment procedures to be followed
Cultural Resources (Section 4.3)	No impacts	Historic properties present, no adverse effects	Construction plan notes to avoid and/or restrict work within the boundaries of historic properties. Coordination of the Stage 2 plans with the State Historic Preservation Office (SHPO)

Environmental Resource	No Build Alternative	Preferred Alternative	Mitigation and Enhancements
Section 4(f) (Section 4.4)	No impacts	Great Miami River Trail (temporary closures and/or detours during construction estimated to be up to 2 years)	Construction plan notes for protection of 4(f) properties and recreational users
		Beltline Trail (temporary closures and/or detours during construction estimated to be up to 6 months)	Construction plan notes for protection of 4(f) properties and recreational users
		Moser Park (0.1-acre right-of-way, demolition/relocation of park features including a shelter, fencing, landscaping, signage, play equipment, and a memorial rock), park closure during construction estimated to be up to 6 months	Coordination with Hamilton Parks Conservancy to expand and improve Moser Park, including the addition of green space, benches, tables, and ADA compliant playground equipment; an adjacent City-owned parking lot; incorporation of shared-use path into the park; and replacement of shelter Signage and memorial rock to be provided to Hamilton Parks Conservancy for safe storage during construction Construction plan notes for protection of 4(f) properties and recreational users
		Great Miami River Water Trail (temporary access restrictions for boaters during construction)	Construction plan notes for protection of 4(f) properties and recreational users
		Alwin E. Zschau House (0.005 acre temporary and 0.005 acre permanent right-of-way required from historic boundary)	Construction plan notes to restrict work within the historic property boundaries Coordination of the Stage 2 plans with SHPO
		Stone Tavern (0.008 acre temporary and 0.02 acre permanent right-of-way required from historic boundary)	Construction plan notes to restrict work within the historic property boundaries Coordination of the Stage 2 plans with SHPO
		Other historic sites present but not a Use under Section 4(f) or not impacted	Construction plan notes to avoid work within the boundaries of historic properties
Section 6(f) (Section 4.5)	No impacts	No impacts	None
Reasonably Foreseeable Environmental Effects (Section 4.6)	No impacts	No significant indirect or cumulative effects anticipated	None
Construction Impacts (Section 4.7)	No impacts	Temporary increased traffic delays, access restrictions, and detours	Maintenance of traffic plan, including coordination with local emergency and public service providers, schools, and notification to the general public
		Temporary increase in dust and construction noise	ODOT standards and specifications to address dust and construction noise
		Temporary erosion and sedimentation	ODOT standards and specifications to address erosion and sediment controls

Environmental Resource	No Build Alternative	Preferred Alternative	Mitigation and Enhancements
		Temporary utility impacts	Utility coordination to avoid/minimize service disruptions
Economic Impacts (Section 4.8)	No impacts	Short-term increase in construction-related jobs and revenue	None
		Short-term business impacts due to increased traffic delays, access restrictions, and detours during construction	Maintenance of traffic plan to minimize disruption and maintain access to businesses and homes
		Long-term positive economic development and business impacts associated with traffic improvements/ease of travel	Reduced traffic congestion and increased east-west capacity
		Loss of tax revenue from residential and business displacements	Replacement housing within the North End neighborhood, including new build homes, rehabilitation of existing homes, and rental options

Public Involvement: A public engagement program was implemented throughout project development, including surveys, open houses, stakeholder meetings, and targeted engagement with underserved communities. Feedback from these activities directly informed the evaluation of alternatives and the selection of the Preferred Alternative. These activities are detailed in **Section 5.1** and further documented on the project website, <https://www.northhamiltoncrossing.org/participate>.

Agency Coordination: Per ODOT's Project Development Process (PDP), coordination with federal, state, and local agencies was conducted during development of the FS and environmental studies to ensure regulatory compliance and to incorporate feedback into the selection and refinement of the Preferred Alternative. Coordination of the FS and FS amendment is detailed in **Section 5.2**. Resource specific coordination is detailed in **Section 4**. Copies of agency coordination and comments are included in **Appendix B**.

Next Steps: There is a 45-day public comment period for this EA. A public hearing will be held on September 10, 2026, at the Butler County Fairgrounds. The public will be provided with an opportunity to comment on this EA starting August 26 and until the close of the comment period on October 10, 2026. Comments must be submitted in writing or recorded at the Public Hearing. If it is determined that the NHX project will not have significant environmental impacts, a Finding of No Significant Impact (FONSI) will be issued. However, if significant impacts are identified, an Environmental Impact Statement (EIS) is required. Input from stakeholders and the public will play an important role in informing the final decision.

1 Introduction

The City and BCTID, in collaboration with ODOT, developed the NHX project to address transportation issues within the northern part of the City and western Butler County. The proposed project is a four-lane, boulevard-style road with a landscaped median or center turn lane and a 35 MPH speed limit which extends approximately 2.5 miles through northeast Hamilton. It includes a new bridge over the Great Miami River and a new railroad overpass to separate rail traffic from pedestrians and vehicles. The project also includes sidewalks and a shared-use path separated by a 5-foot tree lawn, crosswalks, bump-outs, lighting, landscaping, and aesthetic improvements. **Figure 1-1** shows a representative view of the project concept when constructed.

Figure 1-1. View of the NHX Project Concept



The project enhances connectivity between the east and west sides of Hamilton, reduces congestion, and improves mobility on local roadways. It also makes travel across the Great Miami River easier, reduces delays caused by railroad crossings, improves pedestrian and bicycle connections to residential areas, schools, and other community amenities, and supports multimodal linkages to the bus system.

1.1 Project Location

The project is in Hamilton, approximately 20 miles north of Cincinnati and 30 miles south of Dayton. The study area extends along North B Street between Northwest Washington Boulevard/West Elton Road and SR 129 on the west side of the Great Miami River. On the east side of the Great Miami River, the study area includes US 127 (North 3rd Street), SR 4 (Erie Boulevard) and SR 129 at Hampshire Drive, all north of SR 129/High Street (**Figure 1-2**).



1.2 Project History

NHX was conceptualized over 20 years ago to improve east-west connectivity through the northern part of Hamilton, where at-grade railroad crossings and limited river crossings create substantial traffic congestion. The NHX project was first identified in the 2002 study, “Preliminary Evaluation of Transportation Improvements in the Hamilton North/New Miami Area.” Since that time, elements of the project have been included in the following local, county, and regional planning documents:

- Butler County’s Throughfare Plan (2007, updated in 2017)
- Ohio-Kentucky-Indiana Regional Council of Governments’ (OKI) 2040 and 2050 Metropolitan Transportation Plans
- OKI’s Transportation Improvement Plan (TIP), 2026-2029
- City’s comprehensive plan, *Plan Hamilton*, 2019

The project also aligns with the goals and recommendations of other City planning initiatives:

- Riverfront Master Plan (2018), which provides a guide to increasing investment in the river corridor, including promoting ease of travel along the riverfront.
- Active Transportation Plan (2020), which includes recommendations for increasing pedestrian and trail projects in the City, including shared-use paths across the Great Miami River to provide connectivity between the developing Spooky Nook Sports Complex on the west side and Downtown Hamilton on the east.

In recent years, the City and BCTID completed multiple transportation improvement projects throughout Hamilton to reduce congestion and improve safety, including:

- Construction of the South Hamilton Crossing (SHX) Jim Blount Overpass (completed in 2018) to carry traffic over four CSX/Norfolk Southern railroad tracks, reduce travel times, increase safety, and provide improved access to the Miami University Hamilton Campus, Vora Technology Park, and 60+ acres of vacant land.
- Several projects on Main Street and High Street to make necessary repairs, support higher traffic volumes, remove overhead utilities, replace old water mains, and improve streetscapes.
- Reconfiguration of Rhea Avenue and North B Street to accommodate the Spooky Nook Sports Complex.
- Implementation of vehicle and pedestrian safety improvements along the Main Street corridor.
- Reconfiguration of the intersection of SR 177 (Main St) with Cereal Avenue, Haldimand Avenue, Western Avenue, and McKinley Avenue to improve traffic flow.
- Improvements to SR 129 (High Street) at the US 127 (MLK) and SR 177 (Main Street)/Millville Avenue/Eaton Avenue intersections.
- Installation of smart traffic signals to automatically adjust to changes in traffic flow.
- Completion of Phases 1 through 3 of the Beltline Trail, a new recreational shared-use trail loop built on an abandoned rail line that travels through Hamilton’s westside neighborhoods.
- Planned construction of two single-lane roundabouts that service traffic traveling along North B Street, Northwest Washington Boulevard, and West Elkton Road.

In 2020, the City and BCTID, in coordination with ODOT, initiated the NHX project to improve traffic flow and travel safety in the northeast quadrant of the city.

Development of Project Purpose and Need: The Purpose and Need (P&N) was established through outreach to stakeholders and the public.

- A Visioning Exercise was conducted in 2021 with 16 government representatives from the City and Butler County to identify what stakeholders wanted to achieve with the NHX project.
- A NHX Public Needs Survey was conducted in 2021, which had approximately 1,600 participants and received 4,188 comments. This survey provided feedback on the primary and secondary needs of the project.
- A Stakeholder Meeting was held in 2021 with 32 representatives of community and neighborhood organizations, special interest groups, local government officials, property and business owners, and other stakeholders in the NHX project area.

During this time, traffic studies were also conducted in the NHX study area to identify locations with congestion and high crash rates, and to understand travel patterns through the City.

Input received from the Visioning Exercise, the Public Needs Survey, and the Stakeholder Meeting, as well as data gathered from the traffic studies, informed the development of the project P&N statement (see [Section 2](#)). The P&N was accepted by ODOT on February 28, 2022.

Feasibility Study: As part of ODOT's PDP, a FS was prepared to develop and evaluate preliminary alternatives. The FS was initiated in August of 2021. At the start of the FS, seven conceptual Build Alternatives were developed. These were presented to project stakeholders in February 2022. Based on stakeholder feedback, the concepts were modified to avoid impacts to sensitive resources and communities, and new alternatives were created by combining elements of the original concepts. As a result, the seven conceptual alternatives formed the basis for 18 preliminary Build Alternatives.

These 18 alternatives were assessed based on their ability to address the P&N, impacts on traffic operations, roadway and structural design challenges, and utility and environmental impacts. The FS process also included stakeholder and public involvement, including four neighborhood meetings and a combined in-person/virtual Open House (see Public Involvement, [Section 5](#)).

Given the urban nature of the study area and proximity of sensitive environmental resources, potential hazardous materials sites, and high-density residential neighborhoods, each alternative had the potential to affect both community and natural resources. After detailed engineering and environmental studies, and informed by public input, 14 of the 18 preliminary alternatives studied in the FS were eliminated. Four alternatives were advanced for further study. These four alternatives are described in detail in [Section 3](#). The FS was completed in July 2023 and is available on the North Hamilton Crossing Website ([Appendix A](#)).

Feasibility Study Amendment: Public comments received on the FS prompted changes to its recommendations aimed at reducing environmental impacts. These changes are documented in the FS Amendment dated December 20, 2024, and approved on January 6, 2025, and available on the North Hamilton Crossing Website ([Appendix A](#)). The FS Amendment outlined updates to the four alternatives recommended by the FS, and described a new alternative developed after the FS was published. These alternatives are described in [Section 3.2](#).

NEPA Documentation: Due to their potential environmental impacts and public concerns, ODOT determined that the alternatives presented in the FS Amendment should be further evaluated, and an EA

should be completed. An EA is required for Federal Highway Administration (FHWA) actions that do not have clearly significant impacts on the quality of the human environment, or where the significance of potential impacts is uncertain (23 CFR 771.115). This EA is being prepared in compliance with NEPA, as well as all applicable federal, state, and local environmental laws and with ODOT and FHWA environmental regulations, policies, and guidance.

2 Purpose and Need

The P&N Statement is available on the North Hamilton Crossing Website ([Appendix A](#)). The project purpose, as well as the transportation needs that were identified, are summarized in the following sections.

2.1 Purpose

The purpose of the proposed project is to improve east-west connectivity north of SR 129 in the City to reduce congestion and increase mobility in support of current and planned economic growth in the City and western Butler County, as identified in *Plan Hamilton*.

2.2 Identification of Project Needs

Primary and secondary needs were identified through input received from the Stakeholder Visioning Exercise held in February 2021 and the Public Needs Survey conducted between August 30, 2021, and September 30, 2021. These needs were validated by origin-destination studies, which analyzed travel patterns within the NHX study area, and operational traffic studies, which identified areas of existing and future congestion. The primary and secondary needs of the project are described below.

2.2.1 Primary Needs

Primary needs are defined as existing or future conditions that are causing or will cause a transportation problem and must be addressed to the extent feasible to satisfy the project purpose.

2.2.1.1 Improve East-West Connectivity

A primary need of this project is to improve connectivity and traffic flow between the east and west sides of Hamilton. Currently, SR 129 serves as the principal east-west corridor and is the only continuous route in the City. It includes one of only two grade-separated rail crossings in Hamilton, and one of only four bridge crossings over the Great Miami River. As a result, SR 129 experiences significant congestion, underscoring the need for additional east-west capacity.

2.2.1.2 Insufficient Crossings of the Great Miami River

There are two bridges over the Great Miami River within the NHX study area: the SR 129 (High-Main) Bridge and the Black Street Bridge. These bridges lack sufficient capacity to accommodate existing traffic demand, resulting in traffic congestion at both crossings.

- The High-Main Bridge and the Black Street Bridge carry approximately 40% and 30% of north Hamilton traffic across the river, respectively.
- The Black Street Bridge currently has an average daily traffic (ADT)³ of approximately 13,000 and is expected to exceed its two-lane PM peak hour⁴ capacity by 2030. Due to structural constraints, the bridge cannot be widened to add lanes and will not be able to accommodate future traffic volumes.
- The Black Street Bridge was constructed in 1922 and is nearing the end of its serviceable life⁵.

2.2.1.3 Lack of Grade-Separated Railroad Crossings

CSX and Norfolk Southern Railroads are north-south running active railroads which traverse the center of Hamilton. There are only two grade-separated railroad crossings within city limits: the SR 129 underpass and the recently completed South Hamilton Crossing overpass on Grand Boulevard. However, there are 26 at-grade crossings in Hamilton, including three within the NHX study area, which cause substantial commuter delays and traffic congestion on local streets. When crossing gates are down in northern Hamilton, traffic shifts to the grade-separated railroad crossing on SR 129, creating congestion on SR 129 and nearby roads.

2.2.1.4 Mobility/Congestion on Local Roadway Network

A level of service (LOS) analysis conducted for this project indicated there is severe traffic congestion (LOS E or F) at several intersections and along sections of SR 129 (see P&N Statement in [Appendix A](#)). LOS is a measure of how well a transportation facility operates, typically graded from A (best) to F (worst) based on traffic flow and operating conditions (See [Figure 2-1](#)).

The congestion that exists today is primarily attributed to bottlenecks at bridge crossings and delays at railroad crossings. Traffic projections indicate conditions will worsen in the future.

- Three of 22 intersections in the SR 129 corridor currently have an overall intersection LOS of E or F. These intersections are SR 129 & B Street, SR 129 & US 127 (MLK Jr. Boulevard), and SR 129 & SR 4 (Erie Boulevard).
- 11 of the 22 intersections currently have two approaches with LOS E or F.
- Four of the 22 intersections currently have one approach with LOS E.
- Five out of 11 sections of SR 129 between B Street and Hampshire Drive are currently experiencing LOS E or F.

³ Average daily traffic (ADT) refers to the average number of vehicles using a roadway segment each day, in both directions.

⁴ Peak hour refers to the busiest hour of traffic during the morning or evening commute.

⁵ "Serviceable life" refers to the period during which a bridge or structure can remain in operation before major rehabilitation or replacement is necessary.

- Traffic analyses predict that in the year 2030, seven of the 22 intersections will have an overall intersection LOS of E or F.
- Traffic analyses predict that in the year 2050, 10 of the 22 intersections will have an overall intersection LOS of E or F.
- The entire length of SR 129 is expected to operate at LOS E or F during the evening rush hour by the year 2050.
- Three sections of North B Street and the Black Street Bridge are expected to operate at LOS F during the evening rush hour by the year 2050.

2.2.1.5 Safety

A Crash Analysis was completed based on data downloaded from ODOT's Geographic Information System Crash Analysis Tool for 2021-2023 (Burgess & Niple 2025). The following areas were included:

- B Street from Ross Avenue to Park Avenue
- High Street (SR 129) from Monument Avenue to Hampshire Avenue
- Fair Avenue and Gilmore Avenue Intersection
- Princeton Road and Hampshire Drive Intersection

A total of 559 crashes were reported for these areas over the three-year period. About two-thirds (368) of these crashes were intersection-related. Approximately 25% (156) of crashes reported were rear-end collisions, which are typically congestion related. Of the total crashes, 96 resulted in injuries. Intersection-related crashes were most heavily concentrated between US 127 and SR 4, accounting for 117 crashes, approximately 20% of all crashes in the NHX study area. The US 127 intersection with High Street (SR 129) had the most combined injuries with 18 (18.8%) of the total injuries reported in the NHX study area. During the three-year period, a total of nine crashes with pedestrians and seven crashes involving bicyclists were reported.

Five intersections within the study area are also listed in ODOT's Highway Safety Improvement Program's 500 priority urban intersections (2025). These intersections and their statewide rankings are:

- SR 129 & SR 4 (Erie Boulevard) - 38
- SR 129 & US 127 (MLK Jr. Boulevard) - 134
- SR 129 & B Street - 227
- SR 129 & 7th Street - 322
- SR 129 & East Avenue - 438

Figure 2-1. Definition of Level of Service

Level of Service (LOS)	
A	Free Flow Maximum freedom to maneuver; minimal delays.
B	Reasonable Free Flow Slight restrictions; minimal delays.
C	Stable Flow Noticeable delays; maneuverability is more restricted.
D	Approaching Unstable Flow Reduced speeds; frequent delays.
E	Unstable Flow Significantly reduced speeds; additional travel time.
F	Breakdown Flow Stop-and-go conditions; minimal movement possible.

Note: Adapted from FHWA Highway Capacity Manual, Transportation Research Board, 2022

Safety at rail crossings is also an issue for both pedestrians and motorists. Between 2014 and 2018, the City had three reported crashes involving pedestrians and trains and one crash involving a bicyclist and train.

2.2.2 Secondary Needs

Secondary needs refer to existing or anticipated conditions that, while not directly causing localized or system-wide transportation failures, may warrant consideration during project development. Addressing these needs depends on the associated costs and potential impacts.

2.2.2.1 Economic Development

The City has experienced considerable economic development over the past decade. The Spooky Nook Sports Complex opened in 2022, with a 500,000-square foot multiuse development which includes sports facilities, a 225-room hotel, and 55,000 square feet of retail/restaurant/conference space. This complex is expected to attract over one million visitors per year to Hamilton. Other key projects include manufacturing facilities, apartment and mixed-use housing developments, a new amphitheater, expansions of Fort Hamilton Hospital, and 27 new small businesses (restaurants, food establishments, retail, and entertainment). The NHX project is needed to support Hamilton's ongoing and planned economic development.

2.2.2.2 Improve Bike/Pedestrian Connectivity

A secondary need of the project is to improve bicycle and pedestrian connectivity within the City. This includes improving access across the Great Miami River and over the railroad tracks to better link key destinations such as the Spooky Nook Sports Complex, the Central Business District, and other local amenities. In addition, the project is needed to strengthen connections to existing bike trails and integrate with the broader regional and state trail system.

2.2.2.3 Improve Multimodal Linkage

The NHX project is also needed to support linkage between various modes of transportation such as cycling, walking, automobile, and public transportation. As stated in *Plan Hamilton*, the City would like to encourage alternative modes of transportation and improve/expand bus transportation opportunities to connect transit-dependent individuals to jobs. The Butler County Regional Transit Authority's (BCRTA) Hamilton transit hub, located on Market Street between North 2nd and North 3rd Streets, is less than a mile from the NHX project area. Bus lines that travel east and west throughout the county pass within walking distance of this project area. Improving east-west connectivity in the City increases access to BCRTA's transit hub and improves bus service through the City.

2.3 Summary

Primary and secondary needs were identified through extensive public and stakeholder feedback. These needs were confirmed by traffic studies on current and future congestion and travel patterns in the NHX area. The FS identified a range of alternatives that meet the primary and secondary needs of the project. Any alternatives that do not meet the primary needs of the project were dismissed from further study. The FS recommended four feasible alternatives for further study, which are described in detail in **Section 3**.

3 Alternatives Considered

3.1 No Build Alternative

The No Build Alternative serves as the baseline for evaluating the proposed Build Alternatives in this EA, in accordance with NEPA. For this study, it is defined as the existing transportation infrastructure within the NHX study area, including current physical and operational conditions, as well as any improvements that were under construction at the time of analysis, and any funded projects not yet constructed. Within the study area, this includes ODOT Project: BUT-NW Washington/W. Elkton/N. B St; PID 120771, planned for construction in 2027. This project, also known as the NW Washington Roundabouts Project, includes two single-lane roundabouts (one at West Elkton Road and North B Street, the other at West Elkton Road and Northwest Washington Boulevard), sidewalks, and a shared-use path.

As described in [Section 2](#), the study area currently faces extensive transportation challenges. These include a lack of grade-separated crossings over the CSX and Norfolk Southern railways, insufficient vehicular capacity on bridges spanning the Great Miami River, and increasing traffic congestion driven by ongoing and planned development. These issues are making travel between Hamilton's east and west sides increasingly difficult, a trend that is expected to worsen with continued residential and commercial growth. Under the No Build Alternative, these issues will not be addressed.

The No Build Alternative also will not improve pedestrian or bicycle infrastructure beyond what is currently planned and will not improve public transit connectivity within Hamilton.

3.2 Preliminary Alternatives

3.2.1 Feasibility Study

As part of ODOT's PDP, a FS was completed to develop and evaluate preliminary alternatives. The FS, dated July 17, 2023, was accepted by ODOT and released to the agencies on July 24, 2023. The FS can be downloaded from the North Hamilton Crossing Website ([Appendix A](#)). Agency comments on the FS are summarized in [Section 5.2](#) and included in [Appendix B](#).

At the start of the FS, seven conceptual Build Alternatives were developed. These were presented to project stakeholders in February 2022. Based on stakeholder feedback and subsequent analysis, the seven conceptual alternatives were modified to minimize impacts to sensitive resources and communities, and new alternatives were developed by combining elements of the original concepts. The seven conceptual alternatives formed the basis for 18 preliminary Build Alternatives that were evaluated in the FS.

After assessing each of the 18 preliminary Build Alternatives, the FS recommended four preliminary alternatives for further study (**ABE, EBE, AF1 and EF1**), subdivided into three phases (**Phase 1, Phase 2, and Phase 3**). These preliminary alternatives were recommended because they provided the best balance of transportation benefits and impacts. As shown in [Figure 3-1](#), these preliminary alternatives

consist of two river crossing options in Phase 1 combined with two roadway options in Phase 2. All four preliminary alternatives share the same alignment in Phase 3.

Phase 1 – North B Street to US 127: Phase 1 includes a new Great Miami River crossing. Two river crossing options were recommended for evaluation: a northern and southern crossing.

- **North Crossing (ABE and AF1):** Starts at North B Street where it intersects Northwest Washington Boulevard and West Elkton Road and crosses the river north of the two-mile dam, connecting to US 127 on the east bank.
- **South Crossing (EBE and EF1):** Starts at North B Street where it intersects Gordon Avenue and Rhea Avenue and crosses the river south of the two-mile dam, connecting to US 127 on the east bank.

Each river crossing could connect with either of the Phase 2 alignments.

Phase 2 – US 127 to SR 4: Phase 2 includes an overpass of the CSX/Norfolk Southern Railroad. Two options were recommended in this Phase.

- **Alternatives ABE and EBE:** Starts at a T-type intersection with US 127 north of the two-mile dam, crosses over the railroad and Hydraulic Canal, travels south through L.J. Smith Park, and follows either North 9th Street or Miami Street to Heaton Street. ABE/EBE then continues east to an intersection with SR 4 near the fire station.
- **Alternatives AF1 and EF1:** Starts at a T-type intersection with US 127 just north of the existing US 127/Vine Street intersection, crosses over the railroad, and continues in a southeasterly direction, following Vine Street, N. 8th Street, and Heaton Street before reaching SR 4.

Phase 3 – SR 4 to SR 129: In Phase 3, all four preliminary alternatives (ABE, EBE, AF1, and EF1) follow the same route. Beginning at SR 4, the alternatives bear east along Gilmore Avenue and south of the Butler County Fairgrounds before turning south to the intersection of SR 129 and Hampshire Drive.

3.2.2 Post-Feasibility Study

The four preliminary alternatives recommended in the FS were advanced for further study. The four preliminary alternatives were renamed to reflect their geographic locations and the streets they follow to make the names more understandable to the public. In addition, the preliminary alternatives are identified by their location in the NHX study area, rather than project phasing, since the phasing of the project is currently unknown. Three “sections” were identified within the NHX study area: West, Central, and East.

Based on public input, further engineering evaluation was performed, modifications were made to the four preliminary alternatives, and a new alternative was developed to reduce potential community and environmental impacts. These changes were informed by public feedback, including additional information about business operations in the vicinity, future development plans, comments regarding the use of community resources, and public perception regarding cohesion, traffic flow, and safety. The revised Build Alternatives were presented at five stakeholder and community meetings in 2023 and 2024 (see [Section 5](#)) and documented in the FS Amendment. [Figure 3-2](#) shows the revised Build Alternatives relative to the 18 preliminary alternatives (shown in gray) studied in the FS and described in [Section 3.2.1](#). Descriptions of the revised Build Alternatives and the changes made post-FS are documented in the following sections.

V:\1736\active\173620130\environment\mapping\NHX Feasibility Study\NHX additional alternatives.aprx Revised: 2025-09-22 By: rgonzo

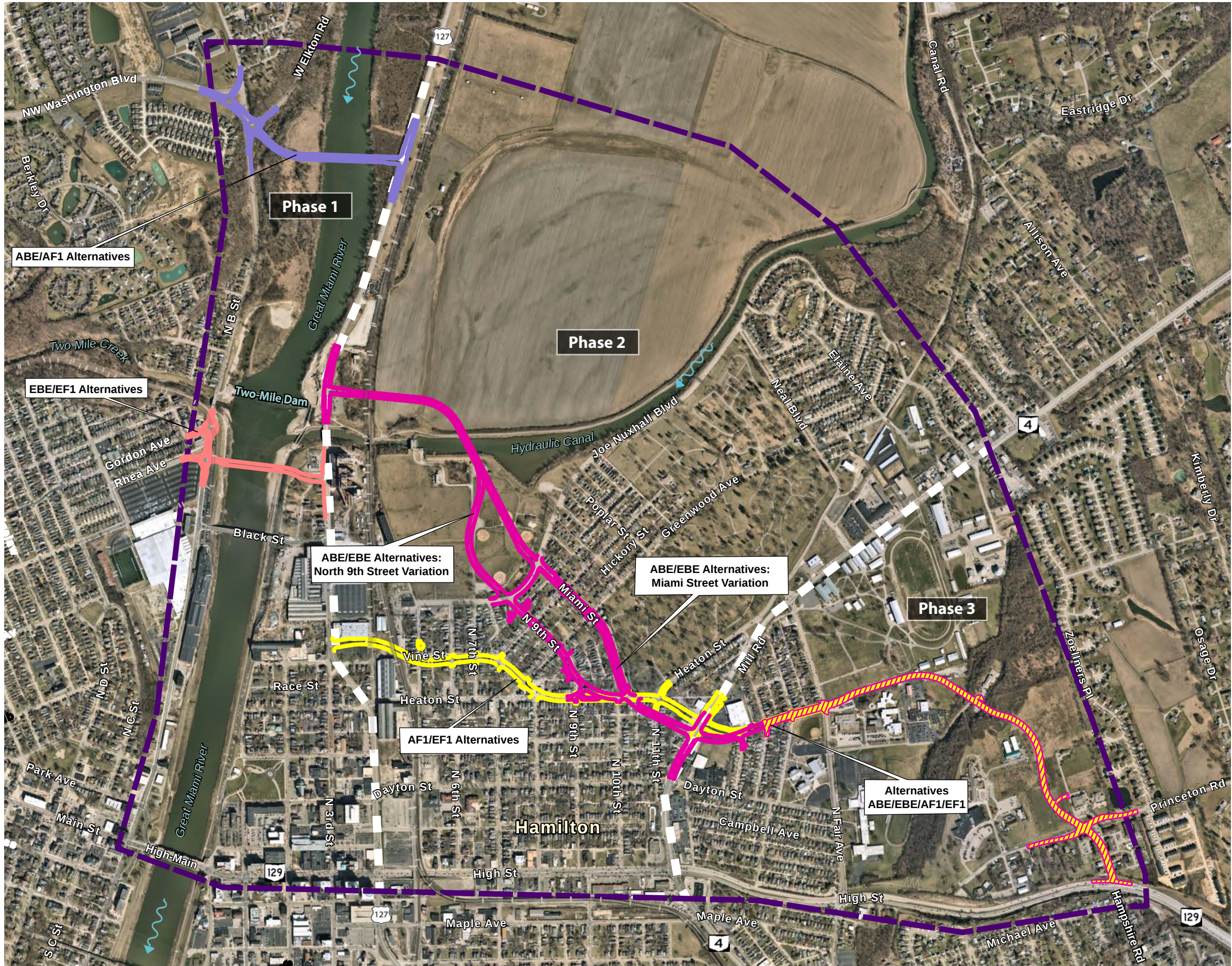


Figure No.
3-1

Title
Feasibility Study Recommended Alternatives Map

Client/Project
North Hamilton Crossing (NHX)
PID 115755
Environmental Assessment

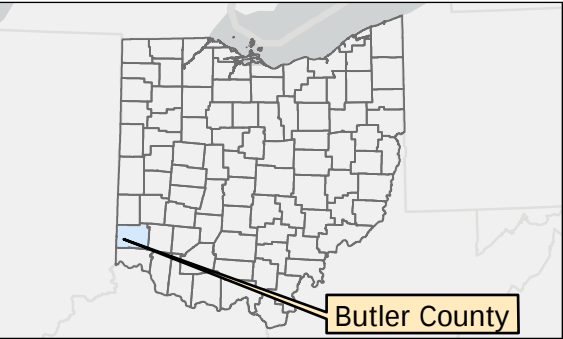
Project Location
City of Hamilton
Butler County, OH

173620130

Prepared by RG on 2025-09-22

Legend

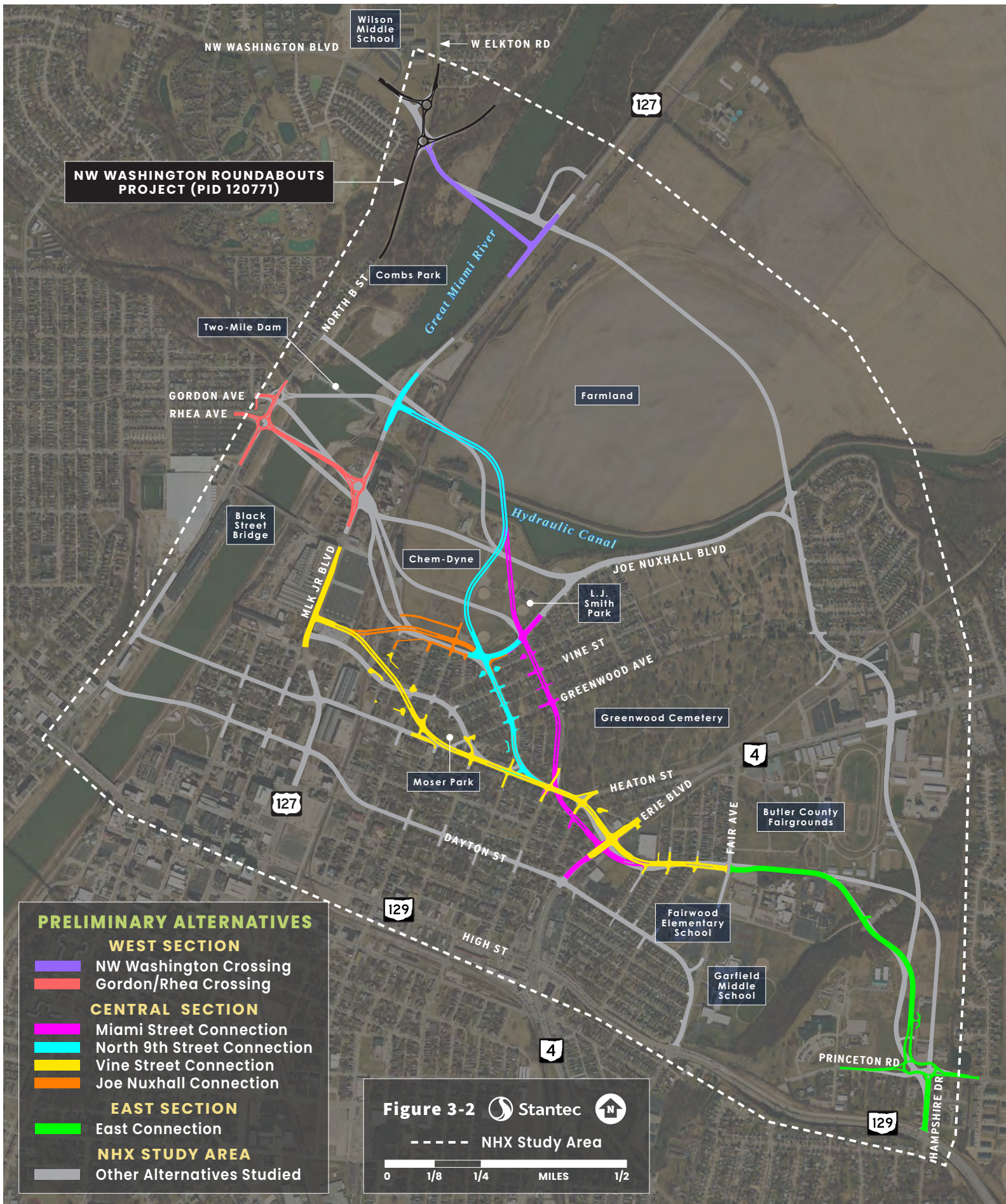
- Alternatives ABE/EBE
- Alternatives AF1/EF1
- Alternatives EBE/EF1 Southern Crossing
- Alternatives ABE/AF1 Northern Crossing
- Alternatives ABE/EBE/AF1/EF1
- Study Area



Notes

- Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
- Data Sources: Base Features Produced from Project Map Designs
- Background: Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Nearmap - February 2023: © OpenStreetMap (and) contributors, CC-BY-SA
World Imagery: Maxar





3.2.2.1 West Section Alternatives (North B Street to US 127)

The West Section (previously Phase 1) includes two alternative river crossings, a north and south crossing. The two Build Alternatives were renamed and modified as described below.

3.2.2.1.1 *NW Washington Crossing*

NW Washington Crossing is located north of the two-mile dam and connects North B Street near Northwest Washington Boulevard to US 127 via a traditional intersection. The proposed alignment of the NW Washington Crossing has not changed since the publication of the FS. The NW Washington Crossing is shown in **Figure 3-3**.

The roundabouts previously shown with this alternative are now an independent project. This project, known as NW Washington Roundabouts Project (ODOT Project: BUT-NW Washington/W. Elkton/N. B St; PID 120771) is moving forward with a separate construction schedule and environmental clearance. The roundabouts project will provide transportation benefits regardless of whether the NHX project is constructed since it addresses congestion and overall safety in the vicinity of Wilson Middle School. While the roundabouts will be single lane, the roundabout layouts could be modified to add a second lane if necessary to accommodate the NHX connection.

3.2.2.1.2 *Gordon / Rhea Crossing*

Located south of the two-mile dam, the Gordon/Rhea Crossing begins where Gordon Avenue and Rhea Avenue intersect with North B Street on the west side of the river (approximately 700 feet north of Black Street Bridge) and connects with US 127 near the intersection with North 2nd Street.

Since publication of the FS, this alternative was modified in several ways. First, the roundabout at North B Street and Gordon Avenue was converted into a right-in right-out intersection to avoid the relocation of Riverview Food Mart and an adjacent residence on Gordon Avenue. This eliminated the need for relocations for the Gordon/Rhea Crossing. Second, the proposed roundabout at North B Street and Rhea Avenue was shifted slightly east to avoid complex utility impacts and to accommodate a higher bridge profile. Additionally, the at-grade traditional intersection proposed at the connection with US 127 on the east side of Great Miami River was replaced with a roundabout.

Finally, the configuration of the proposed shared-use path on the Gordon/Rhea Crossing was modified to better connect with the Beltline Trail on the west side of the river. The path was shifted west of the proposed roundabouts and crosses the river on the south side of the bridge, rather than the north side. A sidewalk is not included on the north side of the bridge because there are no existing pedestrian facilities to connect with on the northwest side of the crossing. Additionally, the proximity of the substation to the proposed east roundabout requires small retaining walls, leaving insufficient space for a sidewalk. Since pedestrian access across the bridge will be provided via the shared-use path, the sidewalk has been removed from the bridge design. The Gordon/Rhea Crossing is shown in **Figure 3-4**.

Table 3-1 provides an evaluation matrix that compares the No Build and Build Alternatives within the West Section across various categories, including impacts to the social, economic, and natural environment, engineering considerations, traffic, and cost.





TABLE 3-1. WEST SECTION EVALUATION MATRIX

Category	No Build Alternative	NW Washington Crossing	Gordon/Rhea Crossing
Purpose and Need			
Meets Primary & Secondary Needs	No	Yes	Yes
Right-of-Way			
Residential Relocations	None	None	None
Commercial Relocations	None	None	None
Community and Land Use Impacts			
Farmland Impacts	None	None	None
Traffic Movement/Public Safety	No change	Improvements to emergency response time and pedestrian mobility	Improvements to emergency response time and pedestrian mobility
Community Cohesion	No change	Improves east-west connectivity	Improves east-west connectivity
Indirect and Cumulative Impacts	No change	None	None
Regulated Materials Review			
Properties Requiring RMR Action	No impacts	None	3 sites require further RMR action
Ecological Resources			
Stream, Wetland, and Pond Impacts	No impacts	• Great Miami River (611 linear feet) • Unnamed Stream (61 linear feet) • 0.9 acre wetland impact	• Great Miami River (490 linear feet) • No wetland impact
Suitable Wooded Habitat (SWH) for Listed Bat Species	No impacts	• 6.97 acres of tree clearing • 3 Potential Maternity Roost Trees impacted	• 0.55 acre of tree clearing • No Potential Maternity Roost Trees impacted
Floodplain and Floodway			
100-year Floodplain and Floodway Impacts	None	• 3.84 acres impact to 100-year floodplain • 3.15 acres impact to Great Miami River floodway	• 0.36 acre impact to 100-year floodplain • 2.33 acres impact to Great Miami River floodway
Drinking Water Resources			
Sole-Source Aquifer	No impacts	Crosses the Greater Miami Sole Source Aquifer	Crosses the Greater Miami Sole Source Aquifer
Cultural Resources			
NRHP-Listed Sites and Districts	No impacts	None	None
NRHP-Recommended Eligible Sites	No impacts	None	None
Section 4(f) Sites			
Combs Park	No impacts	Bisects park and impacts 4 acres	No impacts

Category	No Build Alternative	NW Washington Crossing	Gordon/Rhea Crossing
Great Miami River Water Trail	No impacts	Temporary boat access restrictions during construction	Temporary boat access restrictions during construction
Beltline Recreational Trail	No impacts	No impacts	Temporary closures and/or detours during construction
Great Miami River Trail (GMRT)	No impacts	No impacts	Temporary closures and/or detours during construction
Section 6(f) Sites			
Section 6(f) Sites	None	None	None
Engineering Considerations			
Alternative Length	N/A	0.32 miles	0.32 miles
Design Speed	N/A	35 MPH	35 MPH
Design Considerations	Black Street Bridge is more than 100 years old and will require replacement or closure to vehicular traffic	Bridge structure is an additional 200 feet long	Requires 140 feet of 2 to 8 foot tall retaining wall
Number of New Structures	N/A	1 (bridge over Great Miami River)	1 (bridge over Great Miami River)
Major Utility Relocations and/or Issues	N/A	None	- Requires relocation of overhead electric transmission lines - Coordination with utilities required during construction due to proximity to electric lines, electric substation, and sanitary sewer lines
Traffic / Maintenance of Traffic			
SR 129 Daily Traffic Diversion	None	8% to 13% (Design Year 2050)	10% to 21% (Design Year 2050)
Safety Improvements	None	Roundabouts and dedicated bicycle and pedestrian facilities	Roundabouts and dedicated bicycle and pedestrian facilities
Maintenance of Traffic Concerns	N/A	None	Roundabout construction may require temporary closures of North B Street and SR 127
Preliminary Cost Estimates⁶			
Preliminary Construction Costs	N/A	\$45-\$50 million	\$35-\$40 million
Conclusion			
Recommendation	Not Recommended	Not Recommended	Recommended

⁶ Preliminary construction costs in this table are presented in 2025 equivalent dollars for comparison purposes. Costs for the Preferred Alternative were updated in 2026.

3.2.2.2 Central Section Alternatives (US 127 to North Fair Avenue)

The Central Section (previously Phase 2) included three alignments in the FS: AF1/EF1 and two variations of ABE/EBE through the North End neighborhood. One variation of ABE/EBE followed Miami Street and the other followed North 9th Street. After publication of the FS, the terminus of the Central Section was shifted approximately 0.25 miles to the east, from SR 4 to North Fair Avenue, to accommodate variations in the Build Alternatives between SR 4 and North Fair Avenue. These alternatives were renamed and modified as described below.

3.2.2.2.1 *Miami Street Connection*

The Miami Street Connection is unchanged since the publication of the FS. It begins at US 127 just north of the two-mile dam and bears southeast, bridging over the CSX/Norfolk Southern railroad and traveling across the southwest corner of Bonham Farm and over the canal. From there, it travels through L.J. Smith Park to join Miami Street at Joe Nuxhall Boulevard and then follows Miami Street to Heaton Street. The route continues southeast to a new intersection with SR 4, located just south of Hamilton Fire Station 25. The connection then follows Gilmore Avenue to North Fair Avenue. The Miami Street Connection is shown in [Figure 3-5](#).

3.2.2.2.2 *North 9th Street Connection*

The North 9th Street Connection also is unchanged since the publication of the FS. The North 9th Street Connection is similar to the Miami Street Connection, but instead of following Miami, it travels along the west side of L.J. Smith Park to connect with North 9th Street at Joe Nuxhall Boulevard. The route continues along Heaton Street through a new connection located between North 9th Street and North 10th Street, then continues east to a new intersection with SR 4 located just south of Hamilton Fire Station 25. It crosses SR 4 to connect with Gilmore Avenue and follows it to North Fair Avenue. The North 9th Street Connection is shown in [Figure 3-6](#).

3.2.2.2.3 *Vine Street Connection*

The Vine Street Connection has been modified since the FS publication. The Vine Street Connection begins at US 127 across from Cohen Recycling Center, crosses over the CSX/Norfolk Southern railroad tracks and turns southeast across Vine Street to connect with Heaton Street in the North 7th Street area. At Heaton and North 11th Street, the route follows a new, short connection to SR 4, just south of the fire station. It then continues southeast to connect with Gilmore Avenue and follows Gilmore Avenue to North Fair Avenue.

After publication of the FS, the Vine Street Connection was shifted north; rather than turning northward at 8th Street, the new Vine Street Connection follows Heaton to approximately 7th Street before traveling north towards Vine Street. This change was made in response to public comments received on the FS. The revised alternative avoids impacts to German Village, a historic district listed on the National Register of Historic Places (NRHP), avoids the relocation of businesses near the railroad crossing, and reduces the number of residential relocations.

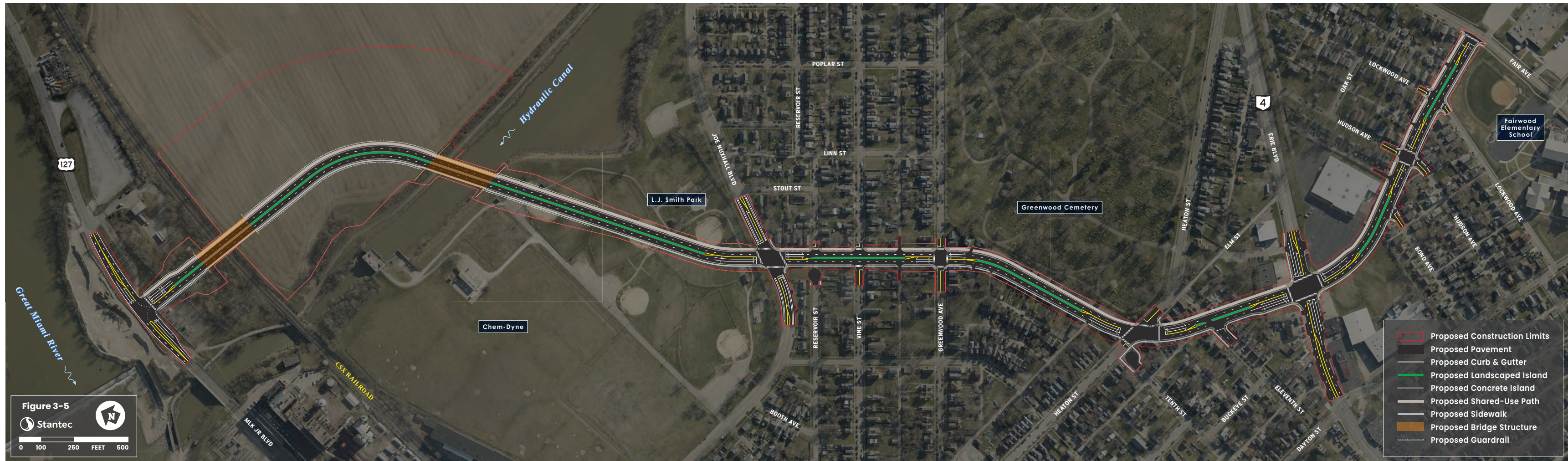
In addition, the Vine Street Connection was modified at Heaton Street and Greenwood Avenue to avoid relocation of a structure at the northeast corner of the intersection. The building, which was determined eligible for the NRHP, includes a commercial business on the ground floor (Stone Tavern bar and restaurant) and three apartments on the second floor.

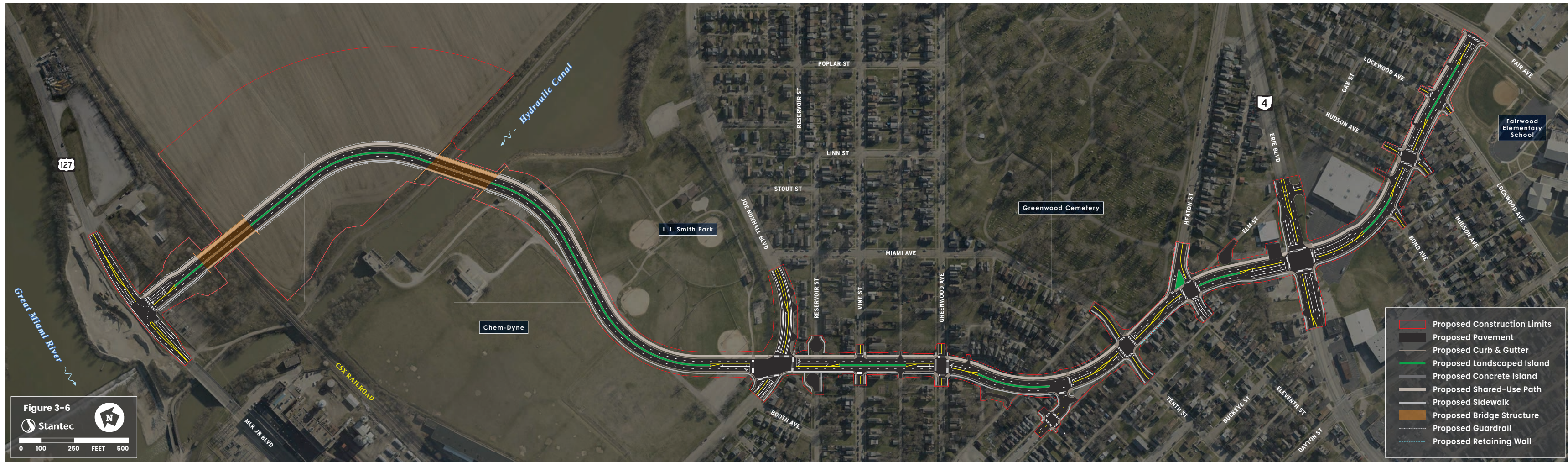
The Vine Street Connection was also modified at its intersection tie-in at US 127 to extend north approximately 700 feet (near Black Street) and south approximately 200 feet (near Vine Street) to accommodate the turn movements onto US 127 from the new NHX roadway. The Vine Street Connection is shown in **Figure 3-7**.

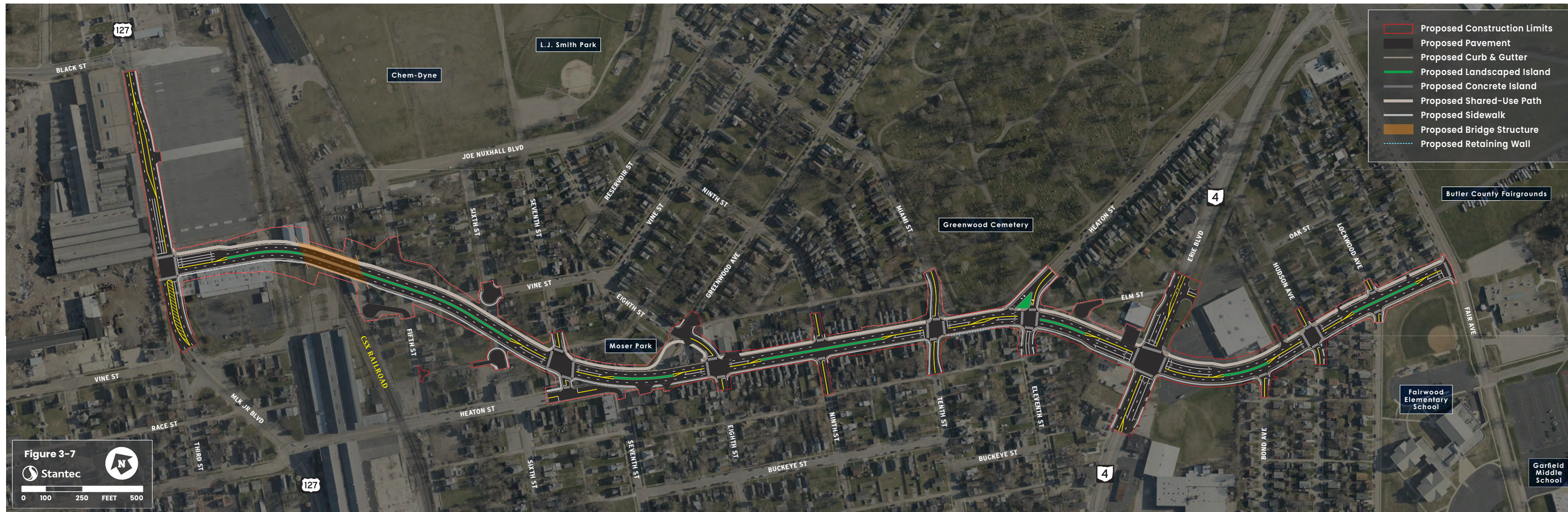
3.2.2.2.4 *Joe Nuxhall Connection*

The Joe Nuxhall Connection is a new Build Alternative developed in response to public comments received on the FS. It begins on US 127 across from Cohen Recycling Center, bridges over the CSX/Norfolk Southern railroad and roughly follows Joe Nuxhall Boulevard before turning southeast on North 9th Street. From there, it briefly follows Heaton Street between North 9th Street and North 10th Street. At North 11th Street, it turns southeast to cross SR 4 just south of Hamilton Fire Station 25, travels through the Butler County Educational Service Center's parking lot to connect with Gilmore Avenue, and follows Gilmore Avenue to North Fair Avenue. The new Joe Nuxhall Connection was presented to the public during a North End Community Workshop meeting on January 22, 2024 (**Section 5**). The Joe Nuxhall Connection is shown in **Figure 3-8**.

Table 3-2 provides an evaluation matrix that compares the No Build and Build Alternatives within the Central Section across various categories, including impacts to the social, economic, and natural environment, engineering considerations, traffic, and cost.







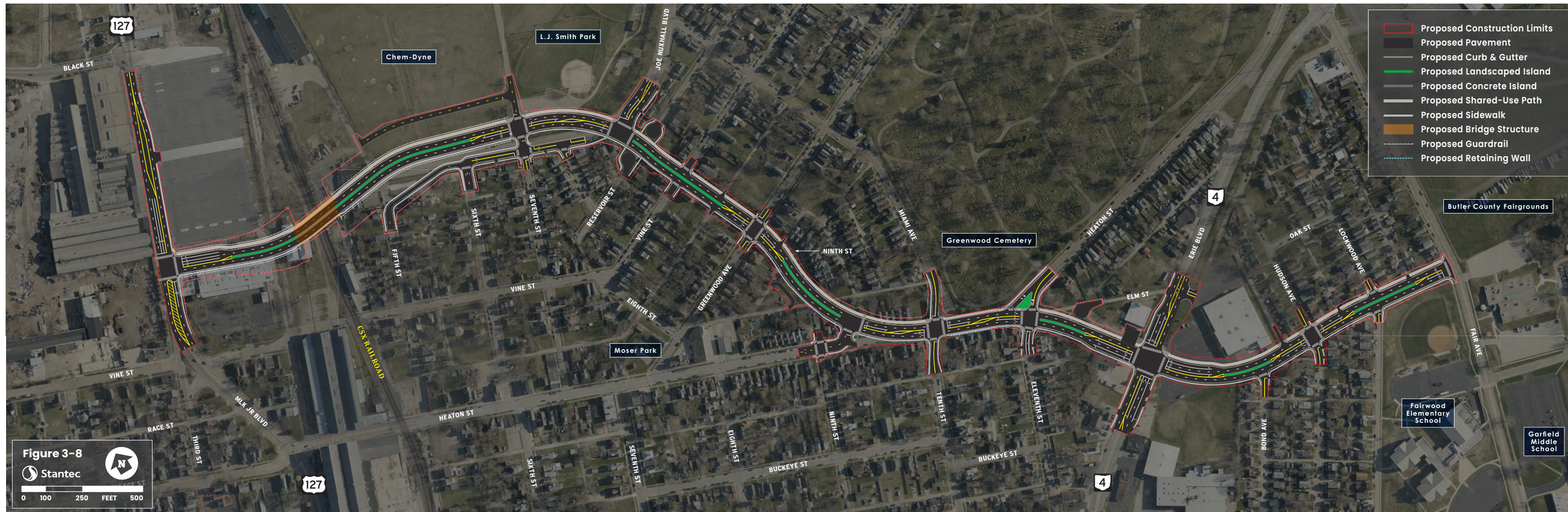


TABLE 3-2. CENTRAL SECTION EVALUATION MATRIX

Category	No Build Alternative	Miami Street	North 9 th Street	Vine Street	Joe Nuxhall
Purpose and Need					
Meets Primary & Secondary Needs	No	Yes	Yes	Yes	Yes
Right-of-Way					
Residential Relocations	None	55-65	45-55	55-65	50-60
Commercial Relocations	None	Fewer than 5	Fewer than 5	10-15	5-10
Community and Land Use					
Farmland Impacts	None	21.13 acres farmland impacts	21.13 acres farmland impacts	None	None
Traffic Movement / Public Safety	No change	- Substantial increase in traffic volumes on Miami Street - Improvements to emergency response time and pedestrian mobility	- Substantial increase in traffic volumes on 9th Street - Improvements to emergency response time and pedestrian mobility - Increases walking distances near railroad overpass	- Substantial increase in traffic volumes on Heaton Street - Improvements to emergency response time and pedestrian mobility - Increases walking distances near railroad overpass	- Substantial increase in traffic volumes on 9th Street - Improvements to emergency response time and pedestrian mobility
Community Cohesion	N/A	- Bisects North End - Isolates residences south of Heaton and west of N 11th St - Relocates 55-65 residences	- Bisects North End - Relocates 45-55 residences	- Severs area north of Heaton - Splits area south of new Vine Connection from neighborhood - Relocates 55-65 residences	- Bisects North End - Relocates 50-60 residences
Regulated Materials Review					
Properties Requiring RMR Action	N/A	6 sites require further RMR action - Minimal property impacts at Chem-Dyne Site	6 sites require further RMR action - Minimal property impacts at Chem-Dyne Site	9 sites require further RMR action	8 sites require further RMR action - Minimal property impacts at Chem-Dyne Site
Ecological Resources					
Stream, Wetland, and Pond Impacts	No impacts	Hydraulic Canal (467 linear feet)	Hydraulic Canal (467 linear feet)	No impacts	No impacts
SWH for Listed Bat Species	No impacts	3.73 acres of tree clearing - No Potential Maternity Roost Trees impacted	3.81 acres of tree clearing - No Potential Maternity Roost Trees impacted	0.52 acre of tree clearing - No Potential Maternity Roost Trees impacted	0.84 acre of tree clearing - No Potential Maternity Roost Trees impacted

Category	No Build Alternative	Miami Street	North 9 th Street	Vine Street	Joe Nuxhall
Floodplain and Floodway					
100-year Floodplain and Floodway Impacts	None	23 acres impact to 100-year floodplain - No floodway impacts	23 acres impact to 100-year floodplain - No floodway impacts	None	None
Drinking Water Resources					
Sole-Source Aquifer	No impacts	Crosses the Greater Miami Sole Source Aquifer	Crosses the Greater Miami Sole Source Aquifer	Crosses the Greater Miami Sole Source Aquifer	Crosses the Greater Miami Sole Source Aquifer
Cultural Resources					
NRHP-Listed Sites and Districts	No impacts	Adjacent to Greenwood Cemetery No graves, monuments or other features impacted	Adjacent to Greenwood Cemetery No graves, monuments or other features impacted	Adjacent to Greenwood Cemetery No graves, monuments or other features impacted Adjacent to German Village Historic District – no impacts	Adjacent to Greenwood Cemetery No graves, monuments or other features impacted
NRHP-Recommended Eligible Sites	No impacts	No impacts	- Hose House #5 demolished - Adjacent to Alwin E. Zschau House	- Adjacent to Niles Tile Works - Minimal impacts (No Adverse Effect) to Stone Tavern (grading, changes to parking lot) - Minimal impacts (No Adverse Effect) to Alwin E. Zschau House (grading, right-of-way from front yard)	- Adjacent to Niles Tile Works - Hose House #5 demolished - Adjacent to Alwin E. Zschau House
Section 4(f) Sites					
Great Miami River Trail	No impacts	Temporary closures and/or detours during bridge construction	Temporary closures and/or detours during bridge construction	No impacts	No impacts
L.J. Smith Park	No impacts	Bisects and impacts up to 5 acres	Impacts up to 5 acres, separation of portions of the park at southern and western boundaries	No impacts	Impacts less than 2 acres along southern edge of park
Moser Park	No impacts	No impacts	No impacts	Impacts approximately 0.1 acre along southwestern edge of park, including park infrastructure	No impacts
Section 6(f) Sites					
Section 6(f) Sites	None	None	None	None	None
Engineering Considerations					
Alternative Length	N/A	1.36 miles	1.42 miles	1.05 miles	1.12 miles
Design Speed	N/A	35 MPH	35 MPH	35 MPH	35 MPH

Category	No Build Alternative	Miami Street	North 9 th Street	Vine Street	Joe Nuxhall
Design Considerations	N/A	- Requires steep grade between US 127 and railroad - Fill required in areas near Chem-Dyne – excavation to be avoided where possible - Requires construction close to buildings	- Requires steep grade between US 127 and railroad - Fill required in areas near Chem-Dyne – excavation to be avoided where possible - Requires construction close to buildings - Requires 150 feet of 2 to 3 foot tall retaining wall - Shared-use path requires a reduced width to avoid impact to cemetery	- Requires steep grade between US 127 and railroad - Raises Heaton Avenue profile by 1-3 feet - Requires construction close to buildings - Requires 150 feet of 2 to 3 foot tall retaining wall - Shared-use path requires a reduced width to avoid impact to cemetery	- Requires steep grade between US 127 and railroad - Fill required in areas near Chem-Dyne – excavation to be avoided where possible - Requires construction close to buildings - Requires 150 feet of 2 to 3 foot tall retaining wall - Shared-use path requires a reduced width to avoid impact to cemetery
Number of New Structures	N/A	2 (railroad overpass & hydraulic canal crossing)	2 (railroad overpass & hydraulic canal crossing)	1 (railroad overpass)	1 (railroad overpass)
Major Utility Relocations and/or Issues	N/A	- Potential electric substation impacts at US 127 - Coordination and FERC Permit modification required for crossing of hydraulic canal due to hydroelectric plant	- Potential electric substation impacts at US 127 - Coordination and FERC Permit modification required for crossing of hydraulic canal due to hydroelectric plant	No significant issues	No significant issues
Traffic / Maintenance of Traffic					
SR 129 Daily Traffic Diversion	None	8% to 10% (Design Year 2050)	8% to 10% (Design Year 2050)	13% to 21% (Design Year 2050)	13% to 21% (Design Year 2050)
Safety Improvements	None	- At-grade rail crossing at Heaton Street to be replaced by overpass - Dedicated bicycle and pedestrian facilities	- At-grade rail crossing at Heaton Street to be replaced by overpass - Dedicated bicycle and pedestrian facilities	- At-grade rail crossing at Heaton Street to be replaced by overpass - Dedicated bicycle and pedestrian facilities	- At-grade rail crossing at Heaton Street to be replaced by overpass - Dedicated bicycle and pedestrian facilities
Maintenance of Traffic Concerns	N/A	No major concerns	No major concerns	Heaton Street to be temporarily closed during construction	No major concerns
Preliminary Cost Estimates⁷					
Preliminary Construction Costs	N/A	\$55-\$60 million	\$60-\$65 million	\$30-\$35 million	\$25-\$30 million
Conclusion					
Recommendation	Not Recommended	Not Recommended	Not Recommended	Recommended	Not Recommended

⁷ Preliminary construction costs in this table are presented in 2025 equivalent dollars for comparison purposes. Costs for the Preferred Alternative were updated in 2026.

3.2.2.3 East Section Alternative (North Fair Avenue to SR 129)

Within the East Section (previously Phase 3), Alternatives ABE, EBE, AF1, and EF1 follow the same alignment. This alternative was renamed and modified as described below.

3.2.2.3.1 *East Connection*

The East Connection has been modified since the FS publication. The East Connection starts at North Fair Avenue across from Gilmore Avenue, then runs east between the Butler County Fairgrounds and Butler County Children Services/Juvenile Detention Center properties before turning southeast. Once past the Humane Society, the road turns south and crosses Princeton Road to connect with SR 129 via Hampshire Drive.

After the FS publication, the skewed intersection originally proposed at Princeton Road and Hampshire Drive was modified to a peanut roundabout. This new configuration avoids impacts to the Princeton Square Apartments, which would have resulted in 32 residential relocations. The East Connection no longer has any proposed relocations. The East Connection is shown in **Figure 3-9**.

Table 3-3 provides an evaluation matrix that compares the No Build and Build Alternative within the East Section across various categories, including impacts to the social, economic, and natural environment, engineering considerations, traffic, and cost.



TABLE 3-3. EAST SECTION EVALUATION MATRIX

Category	No Build Alternative	East Connection
Purpose and Need		
Meets Primary & Secondary Needs	No	Yes
Right-of-Way		
Residential Relocations	None	None
Commercial Relocations	None	None
Community and Land Use Impacts		
Farmland Impacts	None	None
Traffic Movement/Public Safety	No change	• Increase in Design Year (2050) traffic on Hampshire Drive (+115%) • Improvements to emergency response time and pedestrian mobility
Community Cohesion	No change	None
Regulated Materials Review		
Properties Requiring RMR Action	N/A	None
Ecological Resources		
Stream, Wetland, and Pond Impacts	No impacts	• 0.5 acre wetland impacts • 0.63 pond impacts
SWH for Listed Bat Species	No impacts	• 5.25 acres of tree clearing • No Potential Maternity Roost Trees impacted
Floodplain and Floodway		
100-year Floodplain and Floodway Impacts	None	None
Drinking Water Resources		
Sole-Source Aquifer	No impacts	Crosses the Greater Miami Sole Source Aquifer
Cultural Resources		
NRHP-Listed Sites and Districts	No impacts	None
NRHP-Recommended Eligible Sites	No impacts	None

Category	No Build Alternative	East Connection
Section 4(f) Sites		
Section 4(f) Sites	No impacts	None
Section 6(f) Sites		
Section 6(f) Sites	None	None
Engineering Considerations		
Alternative Length	N/A	0.89 miles
Design Speed	N/A	35 MPH
Design Considerations	N/A	New roadway has steep grades and impacts driveways/parking lot at Sojourner Recovery Services
Number of New Structures	N/A	None
Major Utility Relocations and/or Issues	N/A	No significant issues
Traffic / Maintenance of Traffic Considerations		
SR 129 Daily Traffic Diversion	None	8% to 21% (Design Year 2050)
Safety Improvements	None	Roundabout and dedicated bicycle/pedestrian facilities
Maintenance of Traffic Concerns	N/A	Construction of roundabout requires temporary closures of Hampshire & Princeton Roads except for local traffic
Preliminary Cost Estimates⁸		
Preliminary Construction Costs	N/A	\$15-\$20 million
Conclusion		
Recommendation	Not Recommended	Recommended

⁸ Preliminary construction costs in this table are presented in 2025 equivalent dollars for comparison purposes. Costs for the Preferred Alternative were updated in 2026.

3.3 Preferred Alternative

As described in [Section 1.2](#), 18 preliminary Build Alternatives were developed and evaluated in the FS for their ability to meet the project P&N, improve traffic operations, minimize design and utility challenges, and reduce environmental impacts. After this analysis, four preliminary alternatives were recommended for further study and presented to the public for comment. Based on public feedback, further engineering evaluation was performed, resulting in the modification of the four alternatives and the development of the Joe Nuxhall Connection. These changes were documented in the FS Amendment in 2024.

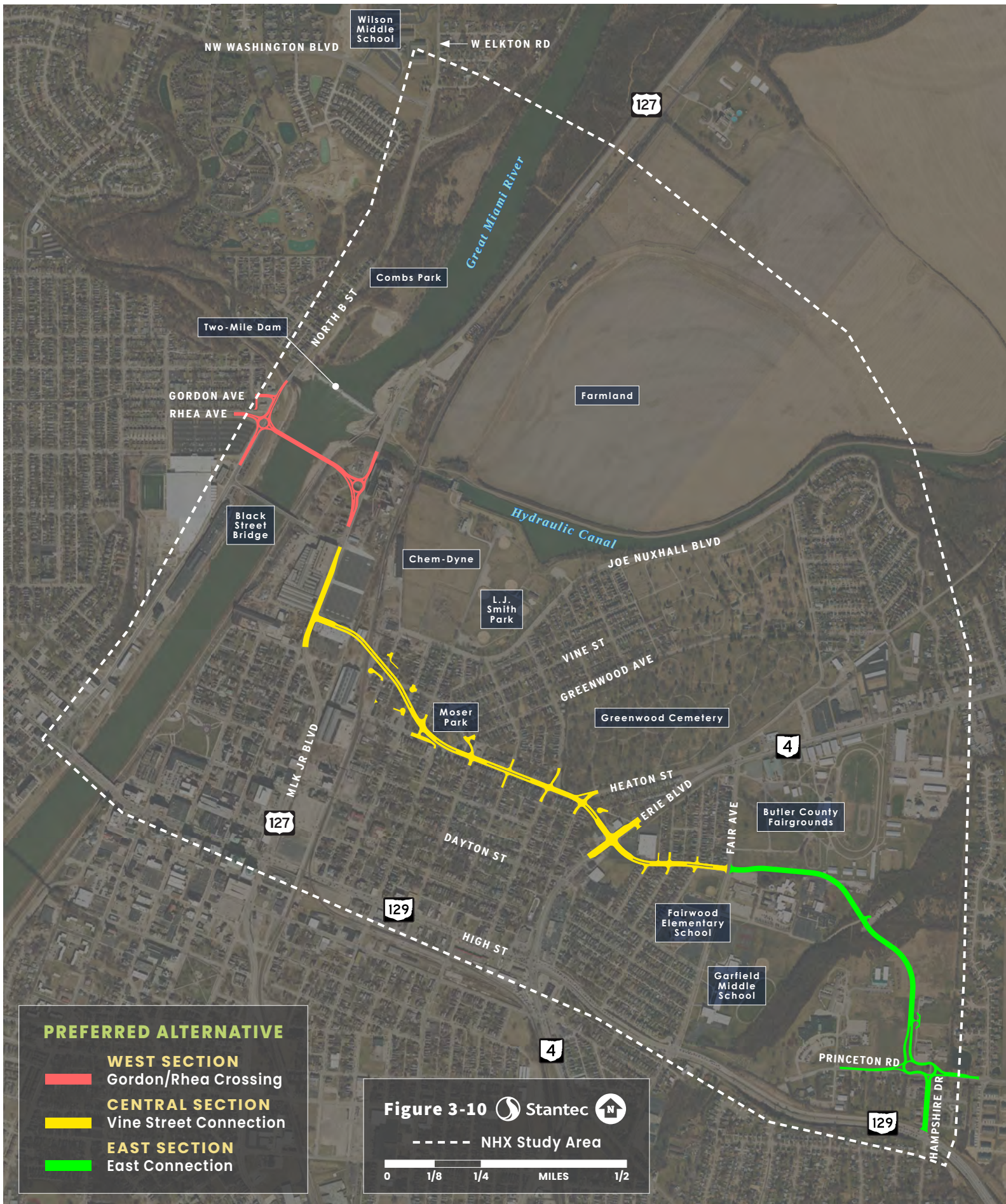
The revised Build Alternatives were studied in detail, again considering transportation performance, environmental impacts, and public input. Given the urban setting and the proximity of sensitive environmental resources, regulated materials sites, and dense residential development, every alternative studied affected community and/or natural resources to some degree. Development of the Preferred Alternative focused on achieving the best balance between minimizing impacts and maximizing project benefits.

Public comments received during the FS comment period highlighted local priorities such as avoiding L.J. Smith Park, Greenwood Cemetery, and the Chem-Dyne regulated materials site. Residents were also concerned that a new roadway could create physical and perceived barriers within neighborhoods, limiting access to destinations such as the North End Market and other community resources. These considerations supported choosing an alternative that follows existing travel patterns to maintain connectivity and minimize disruption. On June 24, 2025, the following alternatives were recommended to the public in an open house style in person meeting and a virtual open house live through August 8, 2025:

- West Section – Gordon/Rhea Crossing
- Central Section – Vine Street Connection
- East Section – East Connection

The responses received during the open house indicate that the Hamilton community generally accepts the City, BCTID, and ODOT's Recommended Preferred Alternative for the NHX project. A majority of respondents agreed with the recommendation in the Central Section (Vine Street Connection – 57%) and East Section (East Connection – 67%). In the West Section, a higher percentage of respondents (57%) preferred the NW Washington Crossing. However, 48% still agreed or strongly agreed with the recommendation to advance Gordon/Rhea as the preferred route. A detailed summary of the open house is included in the Meeting Summary Report in [Appendix A](#).

Following the close of the public involvement comment period, the City, BCTID, and ODOT considered the feedback and confirmed the selection of the Preferred Alternative for advancement. [Figure 3-10](#) and [Figure 3-11](#) show the Preferred Alternative for NHX.



Preferred Alternative

North Hamilton Crossing (NHX) • PID 115775



The Preferred Alternative was selected because it best meets the City's and County's transportation needs while minimizing impacts to environmental resources, community assets, and existing infrastructure. It eliminates impacts to active farmland, and reduces impacts to floodplains, parklands, wetlands, streams, and trees. It also avoids adverse impacts to NRHP-listed historic districts, including German Village and Greenwood Cemetery, and several historic buildings. It avoids L.J. Smith Park and Chem-Dyne, as prioritized by the public.

The Preferred Alternative was also selected because it follows Heaton Street, an existing through traffic route. Using Heaton Street helps prevent large traffic increases on low-volume neighborhood streets and avoids bisecting neighborhoods, reducing the perception of a community barrier.

While the Preferred Alternative involves substantial business and residential relocations, each Build Alternative had a similar magnitude of relocation impacts. To mitigate these impacts, the City and BCTID developed a housing replacement strategy to address displacements (see [Section 4.1.1.6](#)). A detailed description of the Preferred Alternative's impacts is provided in [Section 4](#) and [Section 6](#).

As previously described, the project is a four-lane, boulevard-style road. The road has a speed limit of 35 MPH and includes two travel lanes in each direction, with either a turn lane or landscaped median in the middle. There is a sidewalk on one side of the street and a shared-use path on the other side.

The Preferred Alternative also includes a roundabout at North Fair Avenue, which divides the Central and East Sections. During the FS, two intersection types were considered at North Fair Avenue – a roundabout and a traditional intersection, as shown in [Figure 3-12](#). An Intersection Control Evaluation was completed on May 6, 2026, to determine the best intersection type for this location from a safety and operational perspective. The roundabout was selected based on the identified benefits of this intersection design, including better traffic flow, lower motor vehicle speed, and reduced risk of collisions. A copy of the Intersection Control Evaluation is included in [Appendix A](#).

North Fair Avenue Intersection Types

North Hamilton Crossing (NHX) • PID 115775

SIGNALIZED INTERSECTION



ROUNDBOUT INTERSECTION



Figure 3-12

3.4 Project Phasing / Funding

Planning and constructing the NHX project in its entirety is expected to be a long-term effort. Given the project's scale and cost, it is unlikely that full funding will be secured at one time. Instead, funding will be pursued incrementally over multiple years through a combination of federal and local sources. Potential grant funding may come from OKI, Federal Rail Administration, FHWA, and Transportation Review Advisory Council (TRAC). To date, \$18.8 million has been secured for design, right-of-way, and construction, including \$8.5 million from OKI, \$2 million in TRAC funds, \$1 million from Congressionally Directed Spending, \$450,000 from ODOT Office of Jobs and Commerce, and \$250,000 from BCTID. The City has committed \$6.6 million, representing over 30% of the allocated funds.

Construction is expected to progress from west to east, though sequencing may shift based on funding availability for specific sections. The improvements at North B Street, Gordon Avenue, and Rhea Avenue, which will be the first construction phase, are fully funded and construction is planned for 2029. The new bridge over the Great Miami River is anticipated to be constructed next. This crossing is a priority since the 100-year-old Black Street Bridge is nearing the end of its serviceable life. Once funding is obtained for the new bridge, it is anticipated that detailed engineering, right-of-way acquisition, utility relocation, and construction will take several years. Detailed design for the West Section will begin upon NEPA approval.

The total estimated cost for the Preferred Alternative (West, Central, and East Sections combined) is \$124.5 million, including \$14.7 million for design, \$11.4 million for right-of-way, and \$98.4 million for construction⁹.

4 Environmental Resources, Impacts, and Mitigation

Environmental analyses were completed to understand how the Preferred Alternative may affect natural resources and surrounding communities. The following sections present the results of these analyses. Each section identifies the resources evaluated, describes how those resources may be affected, and summarizes coordination with relevant agencies and stakeholders.

Each section also outlines measures to avoid, minimize, or mitigate potential impacts associated with the Preferred Alternative. Where appropriate, environmental commitments are included. These commitments are specific actions the project will implement during design, permitting, and construction to ensure regulatory compliance, and protect environmental resources.

⁹ Cost estimates are presented in 2026 equivalent dollars. It should be noted that unit costs spiked in 2026 related to global instability of the oil market.

4.1 Social and Economic Resources

4.1.1 Community Impacts

The assessment of NHX project impacts considered how the proposed alternatives may affect the everyday functioning of the community, including potential residential and business relocations, as well as impacts to community resources and assets. The FS, approved in 2023, was developed during a period when environmental justice (EJ) considerations were incorporated into transportation planning and NEPA review pursuant to Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The FS identified potential relocation impacts to EJ populations (low-income and minority) and other underserved populations (limited English proficiency and older adult) within the study area. Further research and tailored public outreach was completed, and in December 2024, ODOT provided scope details for an Environmental Justice Analysis Report (EJAR).

In January 2025, the executive order framework governing EJ analysis changed. EO 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, was rescinded on January 20, 2025, by EO 14148, *Initial Rescissions of Harmful Executive Orders and Actions*. The rescission of EO 12898 followed on January 21, 2025, under EO 14173, *Ending Illegal Discrimination and Restoring Merit-Based Opportunity*. These actions removed the executive-level mandate for federal agencies to conduct standalone EJ analyses or to make formal determinations regarding disproportionate impacts.

As a result, community impacts were considered using a framework that accounts for effects on all populations within the NHX project area. FHWA's NEPA regulations (23 CFR Part 771) remain in effect and continue to require consideration of social, economic, and community impacts as part of transportation decision making. In addition, Title VI of the Civil Rights Act of 1964 remains applicable and continues to prohibit discrimination on the basis of race, color, or national origin by recipients of federal funding. A Community Impact Assessment (CIA) was completed for the project in March 2026 (see the North Hamilton Crossing Website, [Appendix A](#)).

The CIA analyzed demographic information, including minority populations and households in poverty, and assessed community-wide impacts to access, relocations, community resources, pedestrian connectivity, safety, and community cohesion for all Build Alternatives under consideration. The results for the No Build and Preferred Alternatives are summarized below.

4.1.1.1 Land Use and Community Planning

4.1.1.1.1 Impacts

No Build Alternative: The No Build Alternative does not result in any impacts to land use or community planning.

Preferred Alternative: The NHX project area is characterized by a mix of dense urban and suburban land uses, with some agricultural land to the north. NHX impacts a mixture of residential, commercial, and vacant property. The proposed improvements align with local and regional planning documents and initiatives, including the Butler County Thoroughfare Plan (2007, updated in 2017), the OKI 2040 and 2050 Metropolitan Transportation Plans, and *Plan Hamilton* (2019).

The NHX project also supports City initiatives aimed at enhancing multimodal transportation and connectivity. The Active Transportation Plan (2020) emphasizes the importance of alternative transportation modes and calls for expanded pedestrian and bicycle infrastructure. This plan advocates for improved connections to existing and future trail networks, including across the Great Miami River to link the Spooky Nook Sports Complex on the west side with Downtown Hamilton on the east. The Riverfront Master Plan (2018) further complements these goals by outlining strategies to increase investment along the river corridor, with a focus on improving access and mobility to support recreational and economic activity.

The NHX project alleviates congestion and enhances access to Hamilton's riverfront and prime development areas for residents, visitors, and businesses. NHX also encourages further investment by enhancing mobility to key destinations and strengthening the link between emerging development areas and established community assets.

While these improvements align with local and regional planning goals, they may also contribute to redevelopment pressures in neighborhoods near the new boulevard. Enhanced connectivity and increased visibility of previously isolated areas could make surrounding properties more attractive for private investment. Although specific land use changes cannot be predicted, it is foreseeable that improved infrastructure may lead to increased property values and potential gentrification, which could affect housing affordability for existing residents.

4.1.1.1.2 *Coordination*

Local agency coordination and public involvement occurred during development of the FS and subsequent project phases and included meetings with elected officials, planning staff, community organizations, and the general public (see [Section 5](#)). Stakeholder input informed the development and refinement of project alternatives, including consideration of access, connectivity, and compatibility with existing and planned land uses.

4.1.1.1.3 *Mitigation*

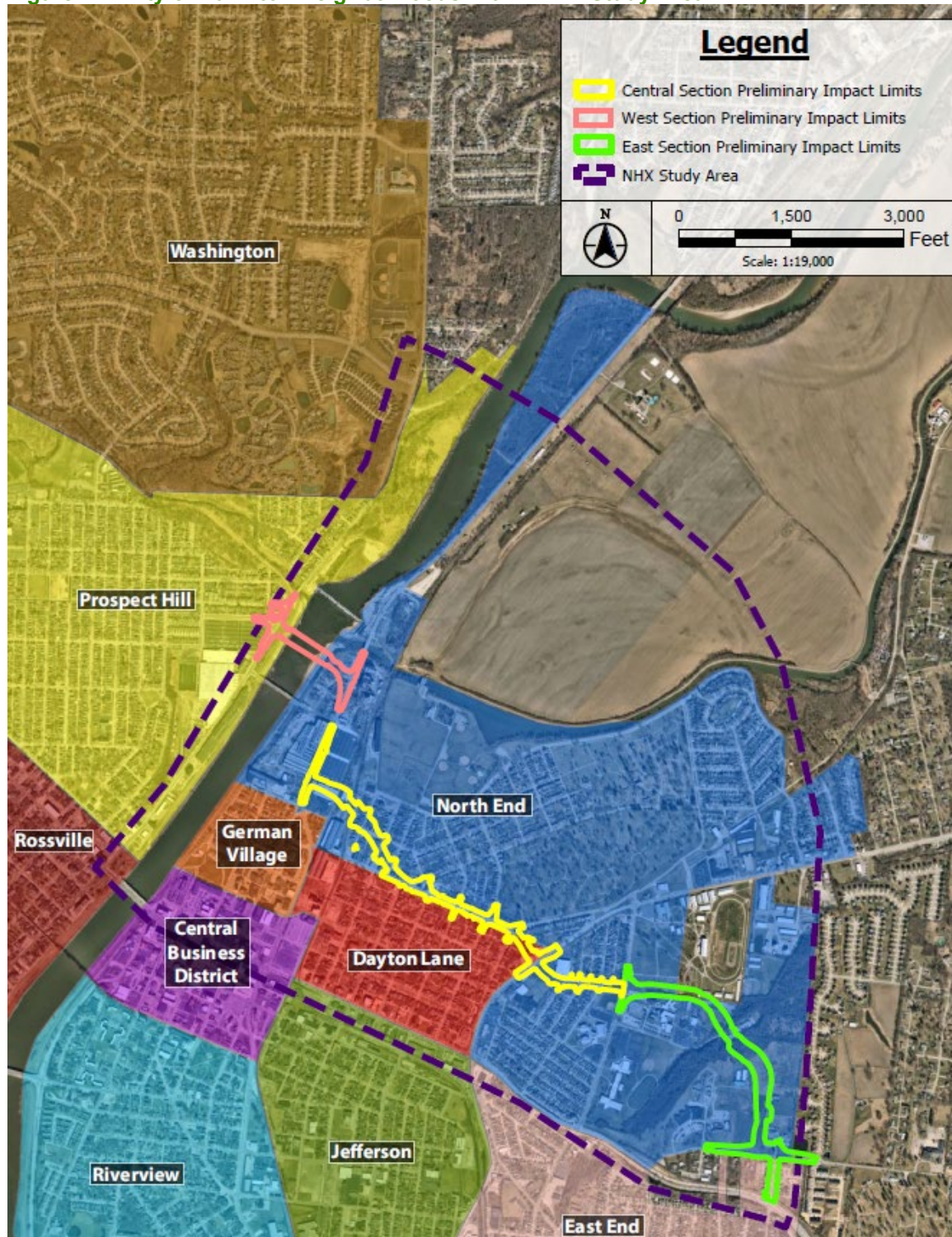
The NHX project is consistent with local and regional planning goals related to mobility, access, and economic development and does not directly conflict with adopted land use plans or zoning. As such, no mitigation or environmental commitments are required.

4.1.1.2 *Community Characteristics*

Communities are defined by geographic, spatial, behavioral, and/or psychological unifying factors. The unifying characteristics can be behavioral patterns, daily social interactions, shared perceptions or attitudes, or shared attributes. The social characteristics of the communities within the NHX project area are demonstrated through the residents' association with their neighborhoods. Neighborhoods within the NHX project area were defined using data from a citizen-led group called 17STRONG.

The Preferred Alternative traverses the neighborhoods of Prospect Hill, North End, Dayton Lane, and East End. Washington is outside the project limits to the west. German Village abuts the Preferred Alternative to the south. [Figure 4-1](#) shows the neighborhoods within the NHX project area overlain with the Preferred Alternative. Areas outside of city limits are undesignated.

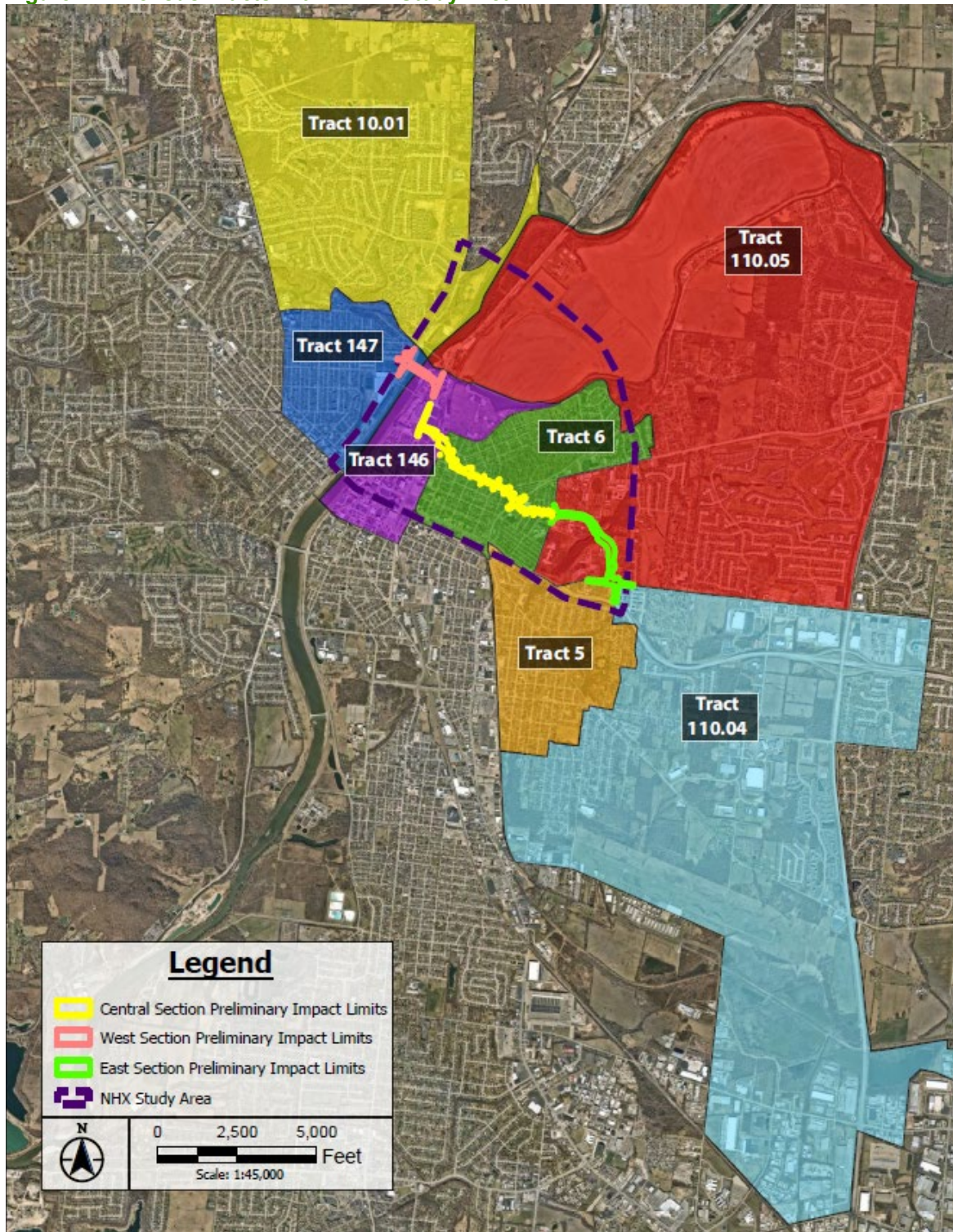
Figure 4-1. City of Hamilton Neighborhoods within NHX Study Area



Shared community attributes are discernable through census data. Community demographics for the proposed NHX project area were identified using US Census Bureau *American Community Survey (ACS) 2019-2023 5-year estimates*. The Preferred Alternative traverses or is adjacent to seven Census Tracts.

Figure 4-2 shows the Census Tract boundaries overlain with the Preferred Alternative.

Figure 4-2. Census Tracts within NHX Study Area



The neighborhood boundaries do not correspond with the Census Tract boundaries. The Census Tracts are listed in [Table 4-1](#) with the neighborhoods that they generally contain. The Census Tracts with populated areas within the project limits are Tracts 147, 146, and 6. The eastern terminus of the project extends into a populated area at the northern edges of Tracts 5 and 110.04.

Census data considered for this analysis includes population, race and ethnicity, poverty and related indicators, the percentage of older adults, individuals with disabilities, English proficiency, housing costs, transportation, and employment. Key demographic data for affected Census Tracts is presented in **Table 4-1** and summarized below. Comparative data for the City, Butler County, and the State of Ohio are included to provide context.

Table 4-1. Population Demographics in the NHX Study Area by Census Tract

Census Tract/ Neighborhood	% Minority	% Households in Poverty ¹⁰	% Over Age 65	% Disabled	% LEP ¹¹ Households	% Renter Occupied Housing	Median Monthly Housing Cost	% Zero Car Household
Tract 10.01 / Prospect Hill, Washington, county	8.2%	10.3%	27.8%	16.6%	1.3%	29.0%	\$1,056	0.0%
Tract 147 / Prospect Hill	14.6%	14.0%	8.9%	14.0%	2.2%	41.9%	\$942	0.7%
Tract 146 / North End, German Village, Central Business District	27.7%	22.8%	9.0%	20.4%	16.5%	92.3%	\$875	6.2%
Tract 6 / North End, Dayton Lane	20.6%	29.2%	13.7%	21.0%	0.0%	42.9%	\$890	6.1%
Tract 110.05 / North End, county	22.6%	2.6%	21.4%	8.6%	3.3%	2.9%	\$1,542	0%
Tract 5 / East End	39.8%	31.7%	10.7%	16.1%	4.8%	57.0%	\$901	4.6%
Tract 110.04 / East End, Enterprise Park ¹² , county	43.9%	19.2%	13.8%	12.7%	5.1%	61.1%	\$1,111	2.8%
City, County, and State Data								
City of Hamilton	26.2%	18.8%	14.3%	16.0%	2.7%	45.6%	\$957	3.1%
Butler County	24.1%	11.7%	15.5%	11.8%	3.3%	30.1%	\$1,174	1.5%
State of Ohio	23.5%	13.2%	17.9%	14.2%	1.5%	33.0%	\$1,042	3.1%

¹⁰ A household is considered in poverty when the total income of the householder's family falls below the federal poverty threshold for its size.

¹¹ Limited English Proficiency (LEP) individuals are people who do not speak English as their primary language and who have a limited ability to read, write, speak, or understand English. A LEP household means no one in the home (over age 14) speaks English "very well."

¹² Enterprise Park is contained within Tract 146 but is southeast of the NHX project limits and will not be impacted.



These populations are considered in accordance with NEPA, Title VI of the Civil Rights Act, and the Americans with Disabilities Act to ensure equitable treatment and meaningful access to project information and decision making. Detailed demographic data is provided in the CIA report ([Appendix A](#)).

Minority Populations: The percentages of non-white populations for the identified Census Tracts range from 8.2% to 43.9%.

- West Section: 8.2% to 27.7%.
- Central Section: 20.6% to 27.7%
- East Section: 22.6% to 43.9%

The proportion of minorities within the Census Tracts impacted by the NHX project is generally comparable to or lower than those of the City, Butler County, and the State of Ohio. The percentages of white non-Hispanic populations in Census Tract 10.01, 147, and 6, and the percentage of Hispanic population in Census Tract 146 are higher than the city, county, and state averages. In Census Tract 5 and Census Tract 110.04 (East Section), the percentages of minority populations are much higher than the percentages for the city, county, and state. Both Tracts 5 and 110.04 are at the very edge of the East Section Alternative.

Populations Experiencing Poverty: The percentage of households in poverty ranges from 2.6% to 31.7%.

- West Section: 10.3% to 22.8%
- Central Section: 22.8% to 29.2%
- East Section: 2.6% to 31.7%

The concentration of households in poverty within Census Tracts 146 and 6 (West and Central Sections – North End neighborhood) is substantially higher than the percentages for the city, county, or state. Additional indicators of poverty, such as percentage of households that receive Supplemental Nutrition Assistance Program assistance, were also elevated in these Census Tracts (18.3%-26.1%), as detailed in the CIA ([Appendix A](#)). In the East Section, the concentration of households in poverty within Census Tract 5 (East End) and Census Tract 110.04 (East End and Enterprise Park) are higher than the percentages for the City, Butler County, or State of Ohio.

Older Adults (Age 65+): The percentage of older adults (age 65 and over) ranges from 8.9% to 21.4%.

- West Section: 8.9% to 27.8%
- Central Section: 9% to 13.7%
- East Section: 10.7% to 21.4%

In the West Section, Census Tract 10.01 contains a higher percentage of older adults compared to the other nearby Census Tracts, the city, county, or state. The impacts within Tract 10.01 are limited to the connection on the west side of the river with no impacts to populated areas. In the Central Section, the percentage of older adults is lower than the city, county, or state. In Census Tract 6 (North End and Dayton Lane), 7% of households have a grandparent who is responsible for the home and lives there with their grandchildren, which is higher than the city, county, or state average. In the East Section, the

percentage of adults aged 65 and older varies. The percentage within 110.05, which is the county tract abutting North End, is higher than the City, Butler County, or State of Ohio.

Individuals with Disabilities: The percentage of individuals with disabilities ranges from 8.6% to 20.4%.

- West Section: 14.0% to 20.4%
- Central Section: 20.4% to 21.0%
- East Section: 8.6% to 16.1%

In the Central Section and portions of the West Section, the population of individuals with disabilities is higher than the city, county, or state averages. In the East Section, percentages are generally comparable to or lower than those of the City, Butler County, or State of Ohio. Public meeting advertisements offered to arrange for accommodations for individuals with disabilities, provide transportation alternatives, and identified accessible entrances to the venues. No requests were received for accommodation, and no attendees were observed utilizing the accessible entrance.

Limited English Proficiency (LEP): The percentage of LEP households ranges from zero to 16.5%. The most common language is Spanish, ranging from 3.1% to 16.8% in the identified Census Tracts.

- West Section: 1.3% to 16.5% LEP Households
- Central Section: 0% to 16.5% LEP Households
- East Section: 3.3% to 5.1% LEP Households

Populations with LEP are present in all NHX project sections. In Census Tract 146 (West and Central Sections – North End neighborhood) the percentage of households with LEP was much higher than the City, Butler County, or State of Ohio. Public involvement efforts included Spanish translations of key materials such as fact sheets, signs, and notification letters. Translation services were also available upon request. No comments were received in languages other than English.

Housing: The percentage of renter-occupied housing and median monthly housing costs were considered. Median monthly housing costs include mortgage payments, property taxes, utilities, condo or mobile home fees, and rent for renter-occupied units paid in cash. Monthly housing costs for owners were similar compared to the cost of renting across all Census Tracts. Costs were comparable to city, county, and state averages, with some Census Tracts being slightly lower.

- West Section: Renter occupied housing 29%-92.3% / Median Monthly housing costs \$875-\$1,056
- Central Section: Renter occupied housing 42.9%-92.3% / Median Monthly housing costs \$875-\$890
- East Section: Renter occupied housing 2.9%-61.1% / Median Monthly housing costs \$925-\$1,111

The percentage of renter occupied housing was notably high for Census Tracts in the North End neighborhood. Tract 146 (West and Central Sections), which is located west of 5th Street, has a home ownership rate of 7.7%, meaning 92.3% of households rent. In Census Tract 6 (Central Section), located east of 5th Street, 42.9% of households are rented. The median housing costs in these Census Tracts are lower than city, county, or state values. Based upon public comments and input from the City, many households within North End (overlaps with Tract 6) are paying below market rents, some reported as low as \$400/month.

Household Transportation: The percentages of zero-car households range from zero to 6.2%. The high range of these values exceed those shown for the City, Butler County, and the State of Ohio.

- West Section: 0.7% to 6.2%
- Central Section: 6.1% to 6.2%
- East Section: 0% to 4.6%

In Census Tract 147 (West Section, Prospect Hill), 0.7% of households have no car. The percentages of zero-car households for Census Tracts 146 and 6 (West and Central Sections) is higher (>6%), compared to 3.1% for the City or 1.5% for Butler County, meaning a greater percentage of households are dependent on walking, carpooling, or transit. Data shows 4.6% of households with no car in Census Tract 5 (East End). With less access to personal vehicles, access to walking, biking, and public transportation options is particularly important.

4.1.1.2.1 *Impacts*

No Build Alternative: The No Build Alternative does not result in changes to community characteristics or demographics within the NHX study area.

Preferred Alternative: Census data indicates that neighborhoods within the NHX study area contain higher proportions of low-income households, minority populations, renters, older adults, individuals with disabilities, limited English proficiency populations, and households without access to a personal vehicle compared to citywide and regional averages. The Preferred Alternative does not alter the demographic composition or defining characteristics of communities within the NHX study area, but these populations may be more sensitive to changes associated with roadway modifications, relocations, and changes in pedestrian access.

For households without access to a personal vehicle in the NHX study area, changes to roadway configurations and pedestrian routes under the Preferred Alternative could affect access to community resources, services, employment areas, and recreational facilities. Older adults and individuals with disabilities may be particularly sensitive to changes in pedestrian connectivity and crossing locations due to mobility and accessibility considerations.

The Preferred Alternative results in localized physical and functional community impacts, including residential and business relocations and changes to access and connectivity, but does not result in shifts in population distribution, neighborhood identity, or broader demographic trends. Impacts related to residential and business relocations and changes to community resources, access, and cohesion are evaluated in detail in **Sections 4.1.1.3** and **4.1.1.4**.

4.1.1.2.2 *Coordination*

The CIA was submitted to ODOT for approval in March 2026. On March 11, 2026, ODOT concurred with the findings of the CIA. All ODOT decision documents and correspondence can be found in **[Appendix B](#)**.

4.1.1.2.3 *Mitigation*

The Preferred Alternative does not result in changes to overall community characteristics or demographics; therefore, no mitigation or environmental commitments specific to community

characteristics are required. To minimize potential access-related effects associated with roadway modifications, particularly for households without access to a personal vehicle, older adults, and individuals with disabilities, the Preferred Alternative includes sidewalks, shared-use paths, pedestrian crossings, pedestrian signals, and lighting. These measures are intended to support continued safe access to community resources, services, employment areas, and recreational facilities. Mitigation measures related to residential and business relocations and changes to community resources, access, and cohesion are evaluated in detail in **Sections 4.1.1.3** and **4.1.1.4**.

4.1.1.3 Right-of-way, Residential and Business Relocations

A Relocation Assistance Program (RAP) Conceptual Study was completed in April 2025 to identify potential displacements and relocations associated with the project. This study identified potentially impacted residential and commercial properties, assessed special relocation needs, and estimated preliminary costs for parcels with structures for the four Build Alternatives within the Central Section (the only section with relocations). The study also evaluated potential impacts to community facilities such as churches, schools, and hospitals. Each proposed alternative was analyzed based on land use, population density, displacement potential, and cost to support informed decision-making and reduce the likelihood of unforeseen issues in later project phases. A copy of the Relocation Conceptual Study is available on the North Hamilton Crossing Website ([Appendix A](#)). The results for the No Build and Preferred Alternatives are presented below.

4.1.1.3.1 Impacts

No Build Alternative: The No Build Alternative does not result in any residential or business relocations or right-of-way acquisition.

Preferred Alternative: There are no residential or business relocations anticipated in the West and East Sections of the project.

In the Central Section, the Preferred Alternative is anticipated to require 55-65 residential relocations. These relocations occur in the North End neighborhood, which has a high percentage of low-income populations as discussed in **Section 4.1.1.2**. These values are presented as a range based on the current design and the Relocation Conceptual Study. These numbers will be better defined throughout final design as refinements are made to minimize relocations and parking or access-related impacts. The residential relocations represent the number of households, not the number of buildings. It is currently unconfirmed whether any of the residential units are unoccupied. Per the Relocation Conceptual Study, the number of relocations may exceed the capacity of the NHX project area real estate market to absorb.

Based on preliminary project impact limits for the Preferred Alternative, seven businesses are relocated by the Preferred Alternative, as listed below. Each commercial relocation is a separate building, which includes several that are vacant (wine seller warehouse, the former Brown Bar) or used for storage only (Edmond's Carpet, Benton Metal and Stone Care, Butler Glass). Advanced Auto Parts is a national retail chain that is impacted by all alternatives.

- Advanced Auto Parts, 323 North Erie Boulevard
- Edmonds Carpet , 956 Heaton Street
- Professional Motor Services, 530 North 3rd Street

- Benton Metal & Stone Care, 501 North 5th Street
- Vacant (former Brown Bar), 502 Vine Street
- Wine Seller, 802 Heaton Street
- Butler Glass, 626 Heaton Street

These businesses provide services to the region, such as fence installation, electric motor parts and repair services, concrete construction, and maintenance services. Relocation of these businesses is not expected to have a substantial impact on local employment or access to services for the neighborhoods. There are several commercial properties with impacts to storage, parking, or outbuildings. These properties will be evaluated further during design and right-of-way negotiations.

Right-of-way plans have not yet been developed for the project. Preliminary right-of-way needs anticipated for the Preferred Alternative are presented in **Table 4-2**.

Table 4-2. Right-of-way Acquisition Needs by NHX Preferred Alternative

Section	Right-of-way (acres)	Parcels
West	± 1 permanent / ± 3 temporary	± 50
Central	± 10 permanent / ± 3 temporary	± 245
East	± 14 permanent / ± 6 temporary	± 30
Total	± 25 permanent / ± 12 temporary	± 325

4.1.1.3.2 Coordination

The CIA was submitted to ODOT for review in March 2026. On March 11, 2026, ODOT concurred with the findings of the CIA. All ODOT decision documents and correspondence can be found in [Appendix B](#).

4.1.1.3.3 Mitigation

Recognizing the potential shortage of replacement housing for families to remain in their current neighborhood, the City has committed to working with Neighborhood Housing Services of Hamilton, Inc. (NHS) and/or other housing development partners to identify City-owned vacant lots in and around the North End neighborhood. These lots can be used to construct affordable single-family homes for displaced residents. In addition, the City is exploring rehabilitation of existing vacant homes within the neighborhood to further support relocation within the community. For residents who are renters or do not wish to purchase a home, NHS's rental program is expected to provide additional relocation options.

The City also proposes to provide housing-related financial literacy and homebuyer and renter education, intended to improve budgeting, credit readiness, and understanding of housing costs to support successful and sustainable homeownership or tenancy.

During public involvement, residents (both with and without access to vehicles) expressed concern that relocation outside the area would limit their ability to walk to jobs and stores they currently rely on. Providing opportunities to relocate within the neighborhood will be essential to providing access to jobs and community facilities and maintaining community ties for these individuals.

During the June 2025 public open house event (see [Section 5](#)), the public input survey asked respondents to indicate how interested they would be in staying in their current neighborhood if they were relocated by the project. Of the respondents that indicated they would be affected by the project, about 50% said that they were interested or somewhat interested in staying in the same neighborhood. Respondents who wanted to stay in the same neighborhood were generally interested in all possible housing options that the City and BCTID are exploring new housing built on vacant property (64%), existing housing that's move-in ready (43%), and renovated housing (43%). A Meeting Summary Report is available on the North Hamilton Crossing Website ([Appendix A](#)).

Environmental Commitments: The acquisition of right-of-way and the relocation of residences and businesses will be conducted in accordance with ODOT-Office of Real Estate procedures, Titles II and III of the Federal Uniform Relocation and Real Property Acquisitions Policy Act of 1970, the Surface Transportation and Uniform Relocation Assistance Act of 1987, and 49 CFR Part 24. Residential and commercial displacements will receive fair market value and will be eligible to participate in ODOT's RAP. These are ODOT standard practices, and no environmental commitment is necessary.

The City and BCTID will implement an advanced replacement and affordable housing program to mitigate the community impacts of the NHX project. In advance of the right-of-way acquisition phase for the Central Section of the NHX project, the advanced replacement and affordable housing program shall carry out the following:

- Execution of an agreement establishing an advanced replacement and affordable housing program (the "Housing Program Agreement") for the NHX Project.
- At a minimum, the Housing Program Agreement will include benefits that go beyond traditional Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970 provision of benefits, such as construction of reduced cost new single-family housing, rehabilitation of existing housing, and assistance to low-income residents on becoming homeowners with specific training on financial literacy, etc.

4.1.1.4 Community Resources, Access, and Cohesion

The CIA also evaluated the potential effects and changes to community resources, changes to existing access and community cohesion, and changes in travel patterns associated with the project. Community resources include public buildings that provide services to the community, such as religious institutions, healthcare, educational facilities, libraries, senior centers, parks and bike trails, and community centers. Community assets include buildings that are used for the well-being of the community such as restaurants and grocery stores. In communities where residents often walk to facilities and stores, these features are vital to the well-being of the residents.

4.1.1.4.1 Impacts

No Build Alternative: The No Build Alternative does not result in any impacts, negative or positive, to community resources, access, and cohesion, and travel patterns in the NHX project area remain the same.

Preferred Alternative: Impacts to community resources and changes in access, cohesion, and travel patterns in the NHX project area are described in the following sections.

Parks, Recreational Resources, and Community Gathering Spaces

There are several parks, recreational resources, and other community gathering spaces that are impacted by the Preferred Alternative, including John R. Moser Park, two shared-use paths (Great Miami River Trail and Beltline Trail), the Great Miami River (a state and national water trail), and the Butler County Fairgrounds. This section discusses the importance of these resources to the community. Regulatory protection of these resources by Section 4(f) of the Department of Transportation Act is discussed in **Section 4.4**.

West Section: The Preferred Alternative has temporary impacts on the Great Miami River and adjacent shared-use paths (see **Section 4.4**).

Central Section: John R. Moser Park (Moser Park) is a 0.5-acre pocket park with a picnic shelter and a playground. The community visits Moser Park regularly, and it is host to local programs such as YMCA youth groups and “Art in the Park.” The Preferred Alternative impacts portions of the park, including the shelter house, which will temporarily disrupt the use of these facilities during construction. The project will expand and improve Moser Park, resulting in an overall benefit to the community. More details are included in **Section 4.4**.

East Section: The Butler County Fairgrounds were identified as an important community resource by the public and project stakeholders. The property consists of 54 acres of exhibition buildings, a track with grandstand seating, numerous barns and a camping area. The fairgrounds are home to the annual week-long Butler County Fair, an event which hosts between 80,000 and 100,000 visitors from around the region. The Preferred Alternative is located along the southern edge of the fairgrounds’ property, and impacts a mechanical storage shed, horse wash pit, and a portion of a campground. During a meeting with the Fairgrounds Board Members, concerns were raised about noise and light impacts from vehicular traffic at the horse barns at the south end of the fairgrounds. To address these concerns, a noise analysis was conducted to determine if a barrier is appropriate in this location. This analysis determined that a barrier is not feasible and reasonable based on ODOT’s current policy. More details on the noise analysis are included in **Section 4.1.6**.

Markets / Restaurants / Grocery Stores

West Section: Riverview Food Mart, located at 901 North B Street in the Prospect Hill neighborhood, serves as the only accessible grocery store for residents near Gordon Avenue, Rhea Avenue, and Webster Avenue. The Preferred Alternative has been designed to avoid direct impacts to this resource. In addition, several design elements are included in the project which enhance pedestrian access and walkability in this location. Vehicle turning movements are restricted to make crossing the street in this location easier and safer. There is a center refuge island at the crossing, allowing pedestrians to cross one direction of traffic at a time. Additionally, the sidewalk along Gordon Avenue is shifted further from the building frontage, providing additional space for pedestrians.

Central Section: Food Town, located at 536 Heaton Street, is another local market within easy walking distance of the affected neighborhoods. The Preferred Alternative alters pedestrian access to Food Town due to the rise in grade over the existing railroad, requiring cul-de-sacs on North 5th and North 6th Streets. New sidewalks reconnect the neighborhood streets north and south of the new roadway. The longest

pedestrian detour to Food Town is an increase from a 400-foot walk (2 minutes) to a walking distance of 900 feet (4 minutes).

The Preferred Alternative requires access changes at Minnicks Drive Thru, located at 810 Heaton Street, which impact the current traffic circulation through the property. Minnicks Drive Thru can not remain in operation without changing the location of the building. They may choose to reconstruct on site, to move elsewhere, or to close this location.

The Stone Tavern, located at 701 Greenwood Avenue, is also adjacent to the Preferred Alternative. Some minor right-of-way impacts are necessary and Greenwood Avenue in front of the building will be abandoned, but the business can remain in operation. Access and parking will be evaluated further during design and right-of-way negotiations.

East Section: No markets, restaurants, or grocery stores are impacted by the Preferred Alternative in the East Section.

Religious Institutions

Several religious institutions are located within or near the Preferred Alternative. While no direct impacts to these facilities are anticipated, changes in access and neighborhood connectivity may affect how residents interact with these resources.

West Section: Free Christian Church of God is located at 916 Summer Street, adjacent to the Preferred Alternative. It is unclear whether this building has a current congregation based upon publicly available data, as it is currently listed as a commercial property on the auditor's website. No impact on the property is anticipated.

Central Section: Friendship United Baptist Church is located at 502 North 6th Street. It is unclear whether this building has a current congregation. This location is adjacent to Preferred Alternative where the new boulevard is climbing in elevation. Access from the south is rerouted via North 7th Street.

The Hamilton Christian Family Center is located at 601 Heaton Street, across from Food Town, two blocks west of the location where the Preferred Alternative splits from existing Heaton Street. Traffic is expected to decrease in front of the facility, and access for vehicles, bicycles, and pedestrians is improved via North 7th Street. However, residents north of the new boulevard will experience increased walking distances (approximately 900 feet).

Kelly's House of Love Ministries is an active church located at 701 Heaton Street across from Moser Park near the Preferred Alternative. The Preferred Alternative improves access for vehicles and connections for bicycles and pedestrians via North 7th Street.

East Section: No religious institutions are impacted by the Preferred Alternative.

Schools

West Section: No schools will be impacted by the Preferred Alternative in the West Section.

Central Section: Fairwood Elementary School and Garfield Middle School are located south of the intersection of Gilmore Avenue and North Fair Avenue. There are no direct impacts to Garfield Middle

School. Fairwood Elementary School's ballfield is located directly southwest of the intersection. The Preferred Alternative impacts approximately 0.25-acre of school property along Gilmore Avenue. No physical impacts are expected to the school building, ballfield, or playground. Traffic volumes adjacent to Fairwood Elementary School increase after the construction of the project. More traffic affects students that must cross the new boulevard to get to and from school. Additional detail on the traffic impacts in this area is provided in the traffic movement/public safety section below. Mitigation measures for these impacts are described in further detail in **Section 4.1.1.4.3**.

East Section: No schools are directly or indirectly impacted by the Preferred Alternative.

Medical Facilities

West Section: No medical facilities are impacted by the Preferred Alternative.

Central Section: No medical facilities are impacted by the Preferred Alternative.

East Section: The Sojourner Recovery Services is a comprehensive mental health and substance use treatment facility at 249 Fair Avenue. The Preferred Alternative bisects the parking lot of the facility. However, this parking lot can be reconstructed elsewhere on the property. The new parking lot location will be determined as part of real estate negotiations.

Traffic Movement / Public Safety

West Section: The Preferred Alternative improves traffic flow and emergency access. Replacing the signalized intersection at North B Street and Rhea Avenue also improves safety. It provides direct access to the Spooky Nook development, as well as the prime development areas on the east side of the river in the vicinity of North 3rd Street and Black Street. It also improves connections at a pedestrian scale between Prospect Hill, North End, and German Village.

Central Section: The Preferred Alternative is located within the North End neighborhood, where the population reportedly often walks to and from facilities and stores. The North End neighborhood contains a high percentage of the population having household incomes below the federal poverty line and over 6% without a car. Traffic volumes on Heaton Street through the North End increase with the Preferred Alternative. Based on traffic studies, it is projected that the Annual Average Daily Traffic (AADT)¹³ on Heaton Street increases from 6,000 vehicles with the No Build to 23,100 with the Preferred Alternative in future year 2050. Increasing traffic volumes on pedestrian routes may impact access to facilities and stores and create a perceived barrier within the neighborhood. The Preferred Alternative partially follows Heaton Street, which currently carries through traffic in the neighborhood, reducing the relative traffic increase compared to other alternatives studied. Students who live north of the new boulevard have to cross a busier road to walk to Fairwood Elementary School or Garfield Middle School.

Existing heavy traffic was identified as a problem for pedestrian safety during multiple public involvement events. Community members noted that speeding and aggressive driver behavior is creating unsafe crossing conditions for pedestrians near schools and at signalized intersections. Additionally, commenters expressed concern that drivers would not obey the 35 MPH speed limit on the new boulevard. The installation of a roundabout at North Fair Avenue and Gilmore Avenue (adjacent to Fairwood Elementary),

¹³ AADT is the number of all vehicle trips on a roadway segment during the year, in both directions, divided by 365 to calculate the average number of daily trips.

and landscaped center medians throughout the Central Section, serve as engineering controls to slow down vehicular traffic, making it more difficult to speed. The NHX project is expected to provide improved pedestrian and bicycle access within the North End neighborhood by including a landscaped median, lighting, and pedestrian amenities to assist with comfort and safety when walking or crossing the roadway. These are described in further detail in **Section 4.1.1.4.3**.

Hamilton Fire Station 25 is located at 335 North Erie Boulevard, which has existing access to the North End and Dayton Lane neighborhoods via Elm Street to Heaton Street. Access is available to the new four-lane boulevard within approximately 200 feet along North Erie Boulevard. The Hamilton Police Department is located at 331 South Front Street, which is approximately one mile southwest of the NHX project area on the opposite side of the railroad tracks. The Preferred Alternative includes a grade-separated railroad crossing connection to MLK Boulevard, providing an alternative to High Street for accessing the area east of the railroad tracks. Therefore, the project is expected to improve response times for fire and emergency services. Closure of existing at-grade rail crossings also provide a safety benefit.

East Section: The Preferred Alternative improves access to Butler County Board of Developmental Disabilities, Animal Friends Humane Society, Butler County Board of Elections, and Sojourner Recovery Services. Access for emergency services to and from SR 129 is improved. Traffic is expected to increase from 11,100 vehicles per day to 23,900 vehicles per day on Hampshire Drive due to routing of the new connection. The project includes sidewalk, shared-use path, a roundabout, and crosswalks to provide traffic calming and improve pedestrian access and safety.

Community Cohesion

Community cohesion is expressed through strong social networks, opportunities for interaction, shared problem-solving, and a sense of belonging to a place. As part of 17STRONG, Hamilton residents defined their neighborhood identities, clearly identifying the neighborhood to which each household belongs. Additionally, cohesion can represent cross-neighborhood connectivity.

West Section: The Preferred Alternative primarily affects the Prospect Hill neighborhood. Prospect Hill is a residential neighborhood of primarily single-family homes. The Preferred Alternative does not impact any parks, churches, grocery stores, or any other gathering places, and it does not sever any pedestrian connections. Pedestrian improvements and the shared-use path constructed as part of the project serve to enhance such connections.

A new river crossing connection at Gordon Avenue and Rhea Avenue improves vehicular east-west connectivity. Due to its proximity to the Prospect Hill, North End, and German Village neighborhoods, it also improves pedestrian connections between neighborhoods. The Preferred Alternative does not displace any residential or commercial properties in the West Section or result in any negative impacts to community cohesion.

Central Section: The Central Section alternatives primarily affect the North End neighborhood and, to a lesser extent, the Dayton Lane neighborhood. Public involvement discussions indicate that North End residents have strong social ties and informal support networks, visible both through in-person engagement and online platforms such as Nextdoor, where neighbors routinely share resources and assist one another. The North End Market provides community support and place of connection. Moser



Park, the Stone Tavern, Food Town, and several faith organizations are situated on or near Heaton Avenue, where Dayton Lane and North End meet.

Residents expressed concerns during public outreach that introducing a boulevard through the neighborhood could diminish its sense of community. The new road physically separates certain blocks, creating a perceived barrier and reducing the neighborhood's cohesiveness. Although it is an urban boulevard with sidewalks and crosswalks, it alters the sense of place that currently exists in North End.

The Preferred Alternative follows the existing Heaton Street corridor along the southern boundary of North End, where through traffic already exists. The new connection diagonally bisects three blocks as it turns northwest toward a proposed railroad overpass, but it does not fully bisect the neighborhood. Due to the overpass embankment, North 5th and North 6th Streets do not have direct access to the new road. This results in slightly longer walking distances to neighborhood resources south of the boulevard, such as Food Town and the Hamilton Christian Family Center. This affects approximately 25 residences on those blocks, and the maximum increase in walking distance is about 900 additional feet. Planned improvements to Moser Park as part of the Preferred Alternative, which are detailed in [Section 4.4](#), could strengthen community connections between North End and Dayton Lane residents.

The quantity of relocations anticipated by the Preferred Alternative may affect the social bond of the residents with their current neighbors. One positive aspect of clustered relocations is that few residences will be left isolated on a block.

The NHX project includes pedestrian improvements that support community cohesion. New sidewalks and ADA compliant crosswalks enhance pedestrian access to neighbors, services, and businesses. Bike lanes across the alternatives facilitate active transportation and improve local connectivity. The Preferred Alternative also provides a new grade-separated rail crossing, improving access between the North End and amenities to the west, including downtown Hamilton and the riverfront. Apart from the access considerations described above, the project is not expected to hinder general travel or affect access to transit, grocery stores, or employment opportunities if displaced residents are able to relocate locally.

East Section: The Preferred Alternative includes the North End and East End neighborhoods and non-residential county property. The Preferred Alternative does not relocate any residents or businesses, does not impact any parks, churches, grocery stores, or any other gathering places, and provides improved vehicle and pedestrian connections. The sidewalks proposed as a part of the project improves community cohesion by making it easier for pedestrians to navigate residential streets. The project provides ADA compliant pedestrian crossings, making it easier for disabled residents to use the sidewalks. The addition of the shared-use path facilitates more active transportation in the area. The Preferred Alternative provides a boulevard connecting East End to North End, improving pedestrian, biking and vehicular access between the neighborhoods.

4.1.1.4.2 *Coordination*

The CIA was submitted to ODOT for approval in March 2026. On March 11, 2026, ODOT concurred with the findings of the CIA. All ODOT decision documents and correspondence can be found in [Appendix B](#).

4.1.1.4.3 Mitigation

The NHX project increases traffic volumes along the Preferred Alternative and changes the way pedestrians access community resources within the neighborhood. The Preferred Alternative partially follows Heaton Street, which currently carries through traffic in the neighborhood, reducing the relative traffic increase compared to other alternatives studied.

To mitigate these impacts, the NHX project will improve pedestrian and bicycle access within the North End neighborhood by adding a shared-use path, sidewalks, and ADA compliant pedestrian crossings along the route. Streetlights will be incorporated along the entire corridor to promote safety for walkers, bikers, and drivers. The use of landscaped medians and roundabouts at key intersections will serve as engineering controls that slow traffic down.

Additionally, the project will include:

- A mid-block crossing with pedestrian refuge and Rectangular Rapid Flashing Beacon (RRFB)¹⁴ in areas of high pedestrian activity where a signalized crossing is not close by, such as near Moser Park.
- A Pedestrian Hybrid Beacon (PHB)¹⁵ signal (pedestrian activated warning light) for the crosswalk near Fairwood Elementary School.
- Bump-outs on side streets to shorten crossing distances.
- Leading pedestrian intervals¹⁶ at signalized intersections.
- Sidewalks at the existing grade, connecting neighborhood streets that are severed by the railroad grade separation.

Coordination will occur with Hamilton's Board of Education to identify additional measures to promote safety for students traveling to and from Fairwood Elementary School and Garfield Middle School. The School Board currently utilizes crossing guards to assist students in getting to and from school. When the new boulevard is constructed, additional crossing guards may be added.

To promote regional connectivity, coordination with Butler County Regional Transit Authority will occur when the next phase of the project advances to detailed design to identify options to expand transit along the Preferred Alternative route.

Environmental Commitments: During detailed design, the Sponsor's Design Engineer will incorporate a mid-block crossing with a RRFB at Moser Park near the existing intersection with North 7th Street, and at Greenwood Cemetery between the existing intersections with Miami Street and North 11th Street.

During detailed design, the Sponsor's Design Engineer will incorporate a pedestrian crossing with a PHB signal at the existing intersection with Lockwood Avenue near Fairwood Elementary School.

¹⁴ A RRFB is a traffic control device that signals drivers to yield using yellow flashing lights when a pedestrian pushes a button to cross the street.

¹⁵ A PHB signal at a crosswalk is a traffic control device that signals drivers to stop using a red light when a pedestrian pushes a button to cross the street.

¹⁶ A leading pedestrian interval is a signal timing feature that allows pedestrians to begin crossing a few seconds before vehicles receive a green light, making them more visible and reducing conflicts with turning traffic.



During detailed design, the Sponsor's Design Engineer will incorporate bump outs on side streets at the following intersections: North 8th Street, North 9th Street, North 11th Street, Bond Avenue, Hudson Avenue, and Lockwood Avenue.

During detailed design, the Sponsor's Design Engineer will incorporate leading pedestrian intervals at the intersection with North Erie Boulevard and the intersection with US 127.

During detailed design, the Sponsor's Design Engineer will incorporate at-grade sidewalks connecting North 5th Street to North 6th Street north and south of the new roadway.

During detailed design, the City will coordinate with Hamilton's Board of Education to identify measures to protect student safety while walking to school during construction and post-construction operations.

During detailed design, the City will coordinate with Butler County Regional Transit Authority to identify opportunities to expand existing transit service along the Preferred Alternative route.

4.1.2 Visual Resources

This section considers the visual appeal and aesthetics of the transportation system and how it is experienced by both users and observers. This includes the "view from the road," which reflects how travelers perceive the surroundings while using the facility, as well as the "view of the road," which refers to how the transportation infrastructure is seen from adjacent sidewalks, buildings, and public spaces.

4.1.2.1 Impacts

No Build Alternative: Under the No Build Alternative, there are no changes to the local transportation system or the surrounding environment within the study area. As a result, the aesthetic character of the existing transportation infrastructure remains unchanged, and there are no impacts to visual quality or appearance.

Preferred Alternative: The NHX project includes a boulevard-style roadway featuring a shared-use path, sidewalk, 5-foot tree lawns on both sides, and either a landscaped median or a center turn lane. This new design replaces the existing narrow four-lane road, which currently includes sidewalks and limited tree lawns or landscaping. The proposed improvements incorporate more green space, lighting, and aesthetic enhancements, making the roadway more visually appealing and better integrated with the surrounding community. Specific aesthetic considerations for key project features of the Preferred Alternative are described below.

Raising North B Street: To meet clearance requirements for the existing levee system, North B Street will be elevated by 2 to 5 feet. This change requires the construction of a retaining wall to accommodate the connection of the Beltline Trail and the proposed bridge over the Great Miami River, resulting in potential visual impacts. To mitigate these impacts, aesthetic treatments such as decorative form liners are proposed for the wall facings.

Great Miami River Crossing: The new bridge over the Great Miami River is a prominent structural element of the project, significantly influencing the river view at the crossing location. As an important addition to the cityscape, the proposed bridge design considered elements like material type, color, lighting, and bridge type to ensure visual harmony with its surroundings.

The design team reviewed stylistic features from the Black Street Bridge and High-Main Bridge in Hamilton, as well as a similar bridge in Piqua, Ohio. Key aesthetic elements considered included concrete arches, a combination of concrete and metal railings, balconies, and pier post lighting. Bridge renderings were developed to illustrate proposed aesthetic treatments (see **Figure 4-3** and **Figure 4-4**) and were presented to the public in June 2025. Subsequently, a structure type study completed in July 2025 determined that steel beams are a more economical option for the bridge. The steel beams will be shaped to mimic the haunched concrete girders shown in the earlier renderings.

Grade-Separated Railroad Crossing: The project includes a new grade-separated crossing over the CSX/Norfolk Southern railroad, which has noticeable visual impacts in the surrounding area. To meet clearance requirements, the roadway will be elevated more than 30 feet, using a combination of embankment slope and retaining walls. This elevated structure is a prominent visual feature of the project. Design elements of this structure are similar to those used on the South Hamilton Crossing, a comparable rail crossing project completed in Hamilton in 2018. These include a 2-foot parapet with vandal fencing and decorative walls between 3 and 5 feet high. The decorative walls serve in place of traditional guardrails and/or bike path fencing. Renderings of the new crossing will be presented to the public during the public hearing (see **Section 5**).

Retaining Walls: In the Central Section, a 2 to 5 foot high retaining wall is proposed along Heaton Street between North 10th Street and North 11th Street to preserve three residential structures. This new wall will replace an existing retaining wall in this area.

The East Section travels through a steeply graded area behind the Humane Society on Princeton Road. Near Sojourner Recovery Services on North Fair Avenue, a retaining wall may be required to construct a replacement parking lot for the facility. As with other retaining walls, aesthetic treatments will be incorporated to enhance visual quality and reduce potential impacts.

Figure 4-3. NHX Bridge Rendering View 1



Figure 4-4. NHX Bridge Rendering View 2



4.1.2.2 Coordination

Bridge and roadway aesthetics were developed in coordination with the City and BCTID, and renderings were presented to the public during the meeting in June 2024. Visualizations will be prepared and presented to the public during the public hearing (see [Section 5](#)).

4.1.2.3 Mitigation

Visual impacts and aesthetic treatments were considered during project development, to ensure that the new roadway is visually appealing and blends with the surrounding area. The baseline standard aesthetic treatments will be incorporated through implementation of standard ODOT engineering and construction specifications. Additional design elements to promote an aesthetically pleasing roadway, including street lighting and landscaping along the corridor, have been incorporated into the conceptual design.

Environmental Commitments: The Sponsor's Design Engineer will incorporate the aesthetic elements including arches, concrete and metal railings, balconies, and pier post lighting into the detailed design of the bridge over the Great Miami River.

The Sponsor's Design Engineer will incorporate decorative concrete barriers on the proposed overpass embankment (east of the proposed overpass structure of the CSX/Norfolk Southern railroads and west of 7th Street) into the design.

The Sponsor's Design Engineer will incorporate baseline aesthetic treatments to cast-in-place retaining walls, mechanically stabilized earth walls, or other concrete retaining walls. Treatment will consist of an ashlar block, dry stack, or fractured fin (vertical groove) formliner pattern, or enhanced pattern identified by the City during final design.

4.1.3 Farmland

In accordance with the Farmland Protection Policy Act (FPPA) of 1981, ODOT is required to consider the impact of a proposed project on farmlands for federal-aid highway projects that involve right-of-way acquisition. Consistent with FPPA requirements, the implementing regulations at 7 CFR Part 658, Ohio Revised Code (ORC) 929.05, and the Farmland Memorandum of Understanding (MOU) Between the Natural Resource Conservation Service (NRCS) and ODOT (Agreement # 42470) executed September 29, 2025, a farmland analysis was completed for the preliminary Build Alternatives.

According to TIGERWeb 2020 Census Urban Area Mapping, the Preferred Alternative is completely within an urban area. Because land within an urbanized area or committed to urban development or storage is not subject to the FPPA, no additional farmland analysis is required.

4.1.3.1 Impacts

No Build Alternative: Under the No Build Alternative, there are no impacts to farmland.

Preferred Alternative: The Preferred Alternative is located entirely within a mapped urban area, thus, there are no impacts to farmlands associated with the NHX project.

4.1.3.2 Coordination

The amount of right-of-way needed for the project exceeds established criteria of the above-referenced MOU between the NRCS and ODOT. Therefore, a FCIR for Corridor Type Projects (NRCS-CPA-106) was prepared for the preliminary Build Alternatives and coordinated with NRCS on January 7, 2025. On February 28, 2025, the NRCS land evaluation was completed. The NRCS did not provide written comments. A copy of the FCIR is available on the North Hamilton Crossing Website ([Appendix A](#)). NRCS was notified of the Preferred Alternative selection on October 30, 2025. Since the Preferred Alternative is in an urbanized area and not subject to the FPPA, no further coordination is required.

4.1.3.3 Mitigation

As there are no farmland impacts under the Preferred Alternative, no environmental mitigation or commitments are proposed.

4.1.4 Regulated Materials

The RMR process is used to identify and manage potential environmental concerns associated with regulated materials early in project development. The purpose of the RMR process is to identify properties with potential contamination, evaluate the type and extent of contamination that may be present, and avoid or appropriately manage impacts to contaminated properties. This process includes three levels of studies: RMR Screening, RMR Assessment, and RMR Investigation.

RMR Screening: The RMR Screening includes a review of current and historic land uses, existing property records, and the types of project impacts (right-of-way acquisition, deep excavation, and structure demolition). The screening determines whether regulated materials are likely to be present and

whether further study is warranted. The RMR Screening may result in one of the following recommendations for each property studied:

- No further RMR work (i.e. RMR Complete)
- Construction plan notes addressing materials management
- An RMR Assessment
- An RMR Investigation

In 2024, RMR Screenings were conducted for all Build Alternatives in the West, Central, and East Sections of the NHX project ([Appendix A](#)).

Construction Plan Note: Contamination such as petroleum impacts associated with leaking underground storage tanks can typically be managed through construction plan notes for Petroleum Contaminated Soils (PCS). A PCS plan note is a written instruction in the construction plans telling the contractor how to properly handle and dispose of contaminated soils during construction.

RMR Assessment: The assessment builds on RMR Screening results and includes a detailed review of regulatory files, visual site observations, in-depth evaluation of historic and current land uses, interviews, and consideration of site geology and hydrogeology. The results of the RMR Assessment, together with the proposed right-of-way acquisition and anticipated excavation depth, are used to determine whether the RMR process is complete or whether additional actions (RMR Investigation or construction plan note) are needed. RMR Assessments were completed for eight sites impacted by the Preferred Alternative in November 2025 (see [Appendix A](#)).

RMR Investigation: An RMR Investigation is conducted when sampling is needed to verify the presence or absence of regulated materials through sampling and testing of soils and/or groundwater. RMR Investigation also provides details about the type and extent of contamination. This helps determine the potential impact of the project and aids in real estate decision-making and the development of construction plan notes, as necessary. RMR Investigations require a higher level of engineering and are included as environmental commitments at this stage.

Based on the information contained in the RMR Screenings and RMR Assessments, ODOT made recommendations for further RMR work in the ODOT decision document dated December 1, 2025, as described below.

4.1.4.1 Impacts

No Build Alternative: The No Build Alternative does not impact properties with regulated materials concerns within the study area.

Preferred Alternative: The Preferred Alternative impacts nine properties, listed below, that will require RMR Investigations or materials management construction plan notes to address regulated materials concerns. RMR Investigations will be conducted during detailed design of the project and may result in additional construction plan notes. The following properties require RMR Investigations:

- J&J Towing, 807 North B Street (RM-W13)
- Hamilton Electrical Substation, 963 North 3rd Street (RM-W18)

- Kornylak Corp, 400 Vine Street (RM-011)
- Professional Motor Services, 530 North 3rd Street (RM-013)
- Connaughton Welding & Fencing, 440 Vine Street (RM-014)
- 5-Points Auto Sales, 723 Heaton Street (RM-025)
- AMD Auto Sales, 317 North Erie Boulevard (RM-028)

Construction plan notes will be developed during detailed design to address materials management during construction at the following properties:

- Hamilton Power Plant, 960 North 3rd Street (RM-W19)
- Niles Tool Works, 550 North 3rd Street (RM-012)

During public involvement, concerns were raised about potential disturbance of the Chem-Dyne Superfund site. This site is listed on the National Priorities List (NPL) and is located north of Joe Nuxhall Boulevard and adjacent to L.J. Smith Park. In 1985, a Record of Decision (ROD) was signed requiring site remediation, and a consent decree was entered into by the U.S. Environmental Protection Agency (USEPA), the State of Ohio, and approximately 174 potentially responsible parties to operate and maintain the remedial action systems. As part of the RMR process, ODOT takes steps to characterize a site and ensure proper management of excavated materials and protection of public health. The Preferred Alternative does not impact Chem-Dyne, and those concerns have been addressed through avoidance of the site.

Figure 4-5 shows the locations of the nine RMR properties ODOT recommended for further RMR analysis/construction plan notes for the NHX project.

4.1.4.2 Coordination

All ODOT RMR decision documents and correspondence can be found in [Appendix B](#).

4.1.4.3 Mitigation

Environmental Commitments: During detailed design and prior to construction, RMR Investigations for J&J Towing, 807 North B Street (RM-W13), Hamilton Electrical Substation, 963 North 3rd Street (RM-W18), Kornylak Corp, 400 Vine Street (RM-011), Professional Motor Services, 530 North 3rd Street (RM-013), Connaughton Welding & Fencing, 440 Vine Street (RM-014), 5-Points Auto Sales, 723 Heaton Street (RM-025), and AMD Auto Sales, 317 North Erie Boulevard (RM-028) will be conducted. In addition, construction plan notes will be developed as necessary based on the results of the RMR Investigation.

During detailed design and prior to construction, construction plan notes will be developed to address materials management during construction at Hamilton Power Plant, 960 North 3rd Street (RM-W19) and Niles Tool Works, 550 North 3rd Street (RM-012).

4.1.5 Air Quality

The USEPA established the National Ambient Air Quality Standards for common air pollutants (called Criteria Air Pollutants) in the Clean Air Act (CAA) and the 1990 CAA Amendments. Four of the six criteria pollutants are caused by transportation-related sources and are a concern to human health and the environment. These include Carbon Monoxide (CO), Ozone (O₃), Particulate Matter (PM), and Nitrogen Oxides (NO_x). In Ohio, PM_{2.5} is the only pollutant required to be analyzed at the project level. Ozone is required to be analyzed at the regional level and must be included in the State Transportation Improvement Plan (STIP)/TIP. ODOT also evaluates projects based upon Mobile Source Air Toxics (MSAT) emissions. MSATs refer to hazardous air pollutants from motor vehicles and motor vehicle fuels which also pose potential health risks.

In addition to an evaluation of the impacts of the NHX project on each of the transportation-related criteria pollutants, the air quality analysis for the NHX project includes an MSAT analysis and an emissions burden analysis that includes Volatile Organic Compounds (VOC) in addition to PM_{2.5} and NO_x.

The NHX project is within Butler County and the City, both of which are in the regional planning area of OKI. OKI maintains a detailed travel demand model and performs air quality conformity analysis using the USEPA Motor Vehicle Emission Simulator (MOVES3) model for the OKI 2024-2027 TIP and 2050 Metropolitan Transportation Plan.

4.1.5.1 Impacts

To analyze the air quality impacts of the NHX project, OKI used the MOVES3 model to determine values for the annual vehicle miles of travel (VMT) and the annual emissions in metric tons per year for several scenarios including: 2023 existing conditions, 2030 Build, 2030 No Build, 2050 Build, and 2050 No Build. The Build scenarios assume complete construction of the project. The No Build scenarios assume the project is not constructed and no improvements are made to the existing roadway network.

CO: CO concentrations in Ohio have dramatically improved in recent trends, with every county in attainment for CO. Therefore, conformity requirements for CO do not apply in Ohio and no CO analysis is required.

Ozone: Butler County is in an ozone maintenance area. If a project is in an ozone nonattainment or maintenance area, the project is included in the regional conformity analysis as part of the OKI conformity determination on the TIP. The project is listed in OKI's 2024-2027 TIP as project identification (PID) 115755. Therefore, ozone conformity has been addressed.

PM: The project is not located in a PM_{2.5} nonattainment or maintenance area. Per ODOT Air Quality guidelines, the project does not require an analysis for particulate matter. Although additional analysis for particulate matter is not required, PM_{2.5} levels were modeled as part of the emissions burden analysis discussed below.

MSATs: Per ODOT Air Quality guidelines, the project is classified as having a low potential for MSAT effects. A project with low potential for MSAT effects requires a qualitative MSAT evaluation. For the project to be classified as having high potential for MSAT effects, the projected ADT needs to reach 140,000 vehicles per day by the design year and the projected ADT for the NHX project is expected to be less than 40,000.

A qualitative MSAT analysis was completed by Lawhon & Associates in June 2025 for the Preferred Alternative. Regardless of the alternative chosen, the Design Year emission levels are likely to be lower than the Existing Year levels as a result of EPA's national control programs that are projected to reduce MSAT emissions by over 80% from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great that MSAT emissions in the study area are likely to be lower in the future in nearly all cases. The analysis concluded that no appreciable difference in overall MSAT emissions is anticipated with the proposed project.

Although a quantitative analysis is not required for a project with low potential for MSAT effects, the air quality modeling results provided by OKI allow for a quantitative evaluation. These data are presented below.

Based upon data provided by OKI, VMT will increase by 3% between 2023 and 2050 in the No Build condition. For the Build condition, the increase is reduced to 2.9% over the same period. As shown in **Table 4-4**, the emissions for analyzed pollutants are expected to decrease between current conditions and the 2050 conditions, with no notable difference between Build and No Build results. Therefore, even if VMT increases by 3% by 2050, a combined reduction of 76.8% in total annual emissions are expected over that period. Thus, no MSAT impacts are anticipated. **Table 4-4** presents the expected MSAT emissions for the study area and does not represent emissions for any one point along the corridor.

Table 4-4. NHX Annual MSAT Emissions and Vehicle Miles of Travel

MSAT (mt/yr) or Vehicle Miles of Travel	Scenario			Difference (%)		
	2023 Existing	2050 No Build	2050 Build	2050 No Build	2050 Build	2050 Build
Benzene	18.4866	8.2904	8.2876	-55.2%	-55.2%	0.0%
1,3-Butadiene	2.1547	0.7932	0.7932	-63.2%	-63.2%	0.0%
Formaldehyde	8.8990	2.4361	2.4347	-72.6%	-72.6%	-0.1%
Acrolein	0.7083	0.1990	0.1989	-71.9%	-71.9%	0.0%
Naphthalene	1.2038	0.3493	0.3492	-71.0%	-71.0%	0.0%
POM	0.4860	0.1386	0.1386	-71.5%	-71.5%	0.0%
Ethyl Benzene	16.6482	7.9591	7.9560	-52.2%	-52.2%	0.0%
Acetaldehyde	8.1482	2.9714	2.9704	-63.5%	-63.5%	0.0%
Diesel PM	52.8646	2.2605	2.2587	-95.7%	-95.7%	-0.1%
Total MSAT	109.5993	25.3977	25.3875	-76.8%	-76.8%	0.0%
VMT	2,802	2,886	2,884	3.0%	2.9%	0.0%
Notes: 1. mt/yr = Metric tons per year 2. POM = Polycyclic organic matter 3. PM = particulate matter 4. Vehicle Miles of Travel in million/per year						

Emissions Burdens Analysis: An emissions burden analysis based upon the OKI data considered the levels of VOC, NOx, and PM_{2.5} for 2023 existing conditions, 2050 No Build, and 2050 Build scenarios. As shown in **Table 4-5**, emissions burdens are expected to decrease in 2050 compared to current

conditions, with no notable difference between the Build and No Build scenarios. These reductions are likely due to the implementation of federal emissions standards over time, as reflected in the model.

Table 4-5. NHX Emissions Burdens and Vehicle Miles of Travel

Pollutant (mt/yr) or Vehicle Miles of Travel	Scenario			Difference (%)		
	2023 Existing	2050 No Build	2050 Build	2050 No Build to 2023 Existing	2050 Build to 2023 Existing	2050 Build to 2050 No Build
VOC	1,069	490	490	-54.10%	-54.20%	0.00%
NOx	1,697	404	404	-76.20%	-76.20%	-0.10%
PM_{2.5}	42	12	12	-72.10%	-72.10%	0.00%
VMT	2,802	2,886	2,884	3.00%	2.90%	0.00%
Notes: 1. mt/yr = Metric tons per year 2. VOC = Volatile Organic Compounds 3. Vehicles Miles of Travel in million/per year						

4.1.5.2 Coordination

Based on the results of the Qualitative MSAT Analysis, ODOT concluded that this project does not result in substantial construction-related MSAT emissions that are likely to occur over an extended building period or a post-construction scenario where the NEPA analysis indicates potentially meaningful MSAT levels. On July 9, 2025, Ohio Environmental Protection Agency (Ohio EPA) concurred with this determination and did not provide further comment on the report. A copy of the MSAT Analysis is available on the North Hamilton Crossing Website ([Appendix A](#)). A copy of the Ohio EPA concurrence is available in [Appendix B](#). No further coordination is required.

4.1.5.3 Mitigation

No mitigation is needed, and no environmental commitments were developed.

4.1.5.4 Construction Impacts

Air quality impacts associated with construction activities were also considered for the NHX project in accordance with applicable federal, state, and local air quality regulations. See [Section 4.7](#) for a discussion of construction-related air quality impacts and mitigation.

4.1.6 Noise

A traffic noise analysis was conducted for the Preferred Alternative in accordance with the ODOT Highway Traffic Noise Analysis Manual (April 2015) and applicable updates (last updated October 2023), issued under the authority of FHWA Highway Traffic Noise: Analysis and Abatement Guidance (December 2011) and Title 23 Code of Federal Regulations Part 772 (23 CFR 772) Procedures for Abatement of Highway Traffic Noise and Construction Noise (July 2010). The Noise Analysis Report is included on the North Hamilton Crossing Website (see [Appendix A](#)).

Existing (2023) and project Design Year (2050) Build condition sound levels were analyzed using the FHWA Traffic Noise Model, version 2.5 (TNM 2.5) for 896 receptors within 42 Noise Sensitive Areas in the NHX study area. A receptor is a discrete location representing a sensitive area of use or activity where sound levels are assessed. A Noise Sensitive Area (NSA) is a defined area which groups noise sensitive receptors based on similar characteristics such as land use, geography, proximity, and/or similarity in exposure to existing or future traffic noise.

4.1.6.1 Impacts

No Build Alternative: The No Build Alternative does not impact the existing noise levels in the NHX project area.

Preferred Alternative: Traffic noise impacts occur when predicted Design Year Build condition sound levels approach the noise abatement criteria (NAC) specified in 23 CFR 772.11 or constitute a substantial increase over existing levels. The criteria which define approach and substantial are prescribed in noise policies issued by state transportation agencies. Per ODOT policy, a sound level approaches the applicable NAC if it is within 1 A-weighted decibel (dB(A)) of that NAC, and a substantial increase is defined as one which is 10 or more dB(A) over the existing noise level.

Analysis of predicted Design Year (2050) Build condition sound levels identifies 150 noise impacts at residential and recreational receptors in 22 NSAs associated with the Preferred Alternative. Of these impacts, 70 are applicable to the NAC impact criterion and 77 are applicable to substantial increase impact criterion described above. Three impacts are applicable to both criteria. Identified impacts occur at receptors representing 114 dwelling units (residences) throughout the NHX project area, 21 campsites at the Butler County Fairgrounds, and a baseball field at the Fairwood Elementary School located on North Fair Avenue.

4.1.6.2 Coordination

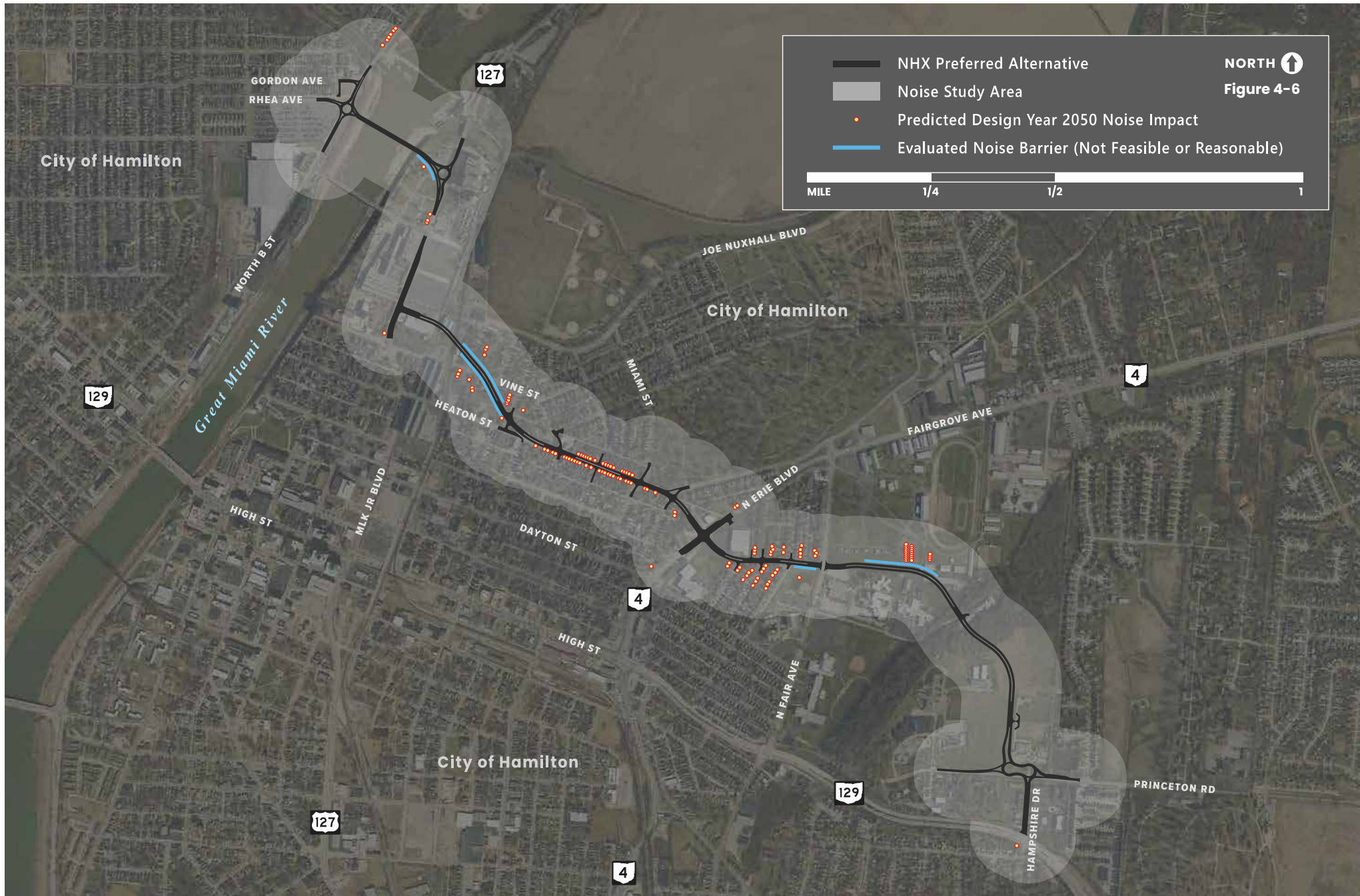
The Noise Analysis was submitted to ODOT for approval in September 2025. On October 2, 2025, ODOT concurred with the Noise Analysis conclusions. All ODOT decision documents and correspondence can be found in [Appendix B](#).

4.1.6.3 Mitigation

Noise Barriers: Noise abatement options were considered for all identified impacts, and structural abatement measures (noise barriers) were evaluated where feasible to construct. It was determined that barrier installation is not feasible for 109 impacted receptors due to constructability issues including project right-of-way constraints, maintenance of access issues, and potential safety conflicts for vehicular and pedestrian traffic. Where feasible to construct, noise barriers were not found to meet ODOT cost reasonableness criteria and are not recommended for further consideration. The locations of the impacts and the modeled noise barriers for the project are shown in [Figure 4-6](#).

Evaluated Noise Barriers and Impacts

North Hamilton Crossing (NHX) • PID 115775



Decorative Concrete Barriers: The project team is recommending the installation of decorative concrete barriers in lieu of guardrail for the section of the Preferred Alternative on proposed overpass embankment (east of the proposed overpass structure of the CSX/Norfolk Southern railroads and west of 7th Street) to address project traffic noise as well as safety standards. The decorative barriers ranging from 3 to 5 feet in height were evaluated using the FHWA TNM 2.5 program to assess noise attenuation provided to adjacent houses upon barrier installation.

The attenuation provided by these two concrete barriers lowers predicted noise increases from a range of 9.7 to 11.6 dB(A) without barrier implementation to a range of 8.2 to 9.4 dB(A) for these nine houses.

4.1.6.4 Construction Noise

Noise associated with construction activities was also considered for the NHX project in accordance with CFR 772.19. See [Section 4.7](#) for a discussion of construction-related noise impacts and mitigation.

4.2 Natural and Ecological Resources

Field investigations for the NHX project were conducted from August through September 2024. A Level 1 Ecological Survey Report (ESR) was submitted in September 2025 ([Appendix A](#)). As part of the ESR, aquatic resources, terrestrial habitat, and threatened and endangered species were evaluated for the Preferred Alternative. A conservative impact footprint was developed for use in calculating ecological resource impacts (see [Figure 4-7](#)). This approach was intended to provide a worst-case impact scenario, with the expectation that the final construction impacts will be reduced.

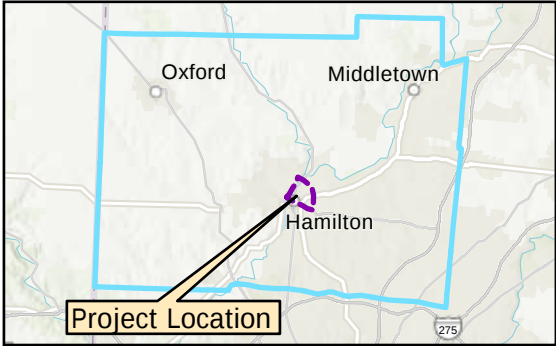
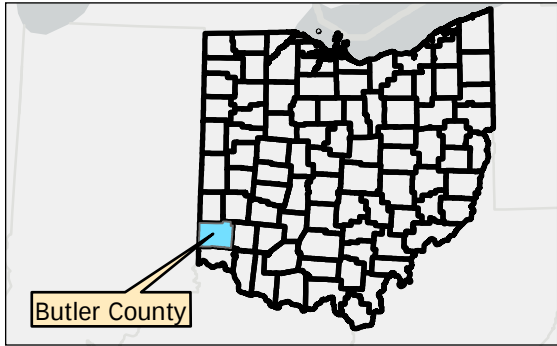
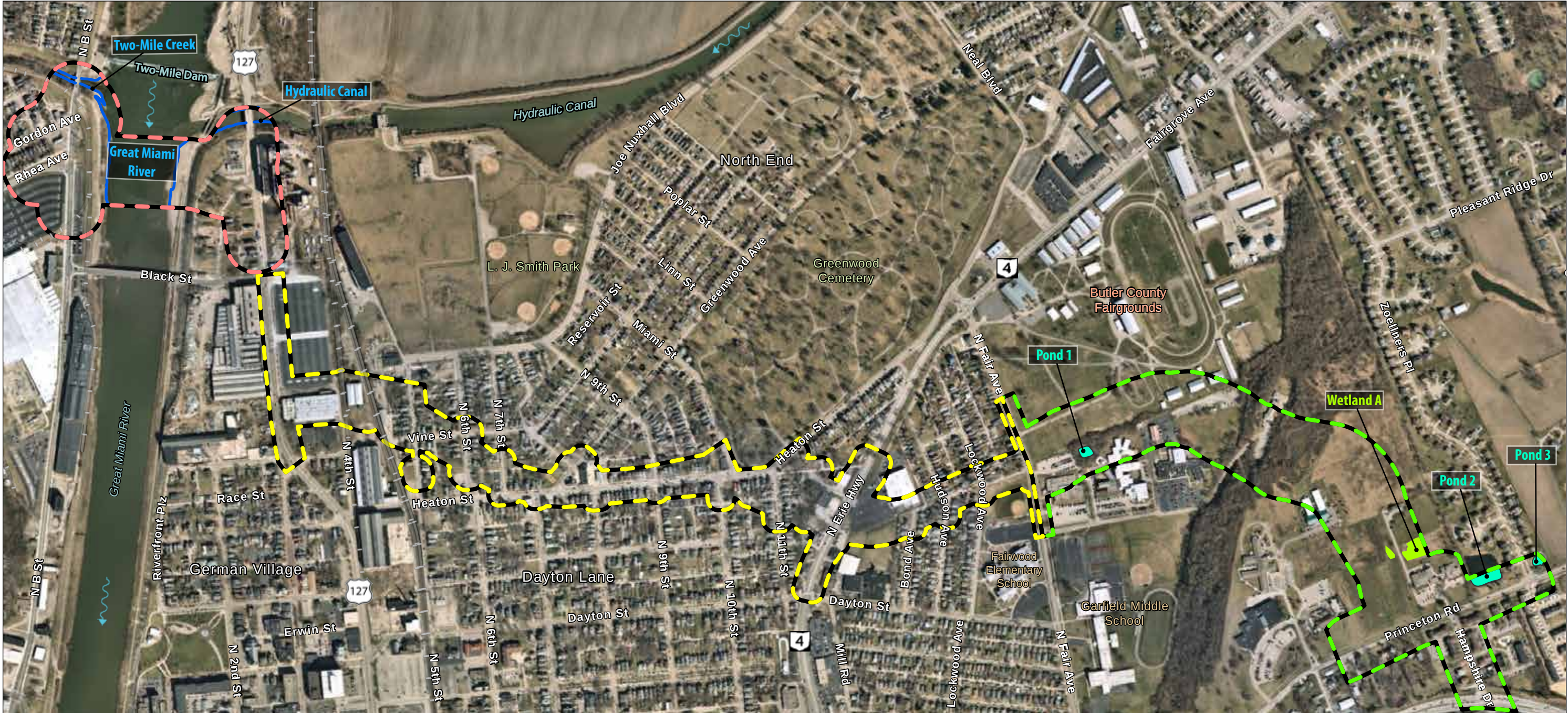
4.2.1 Streams, Wetlands, and Ponds

The ESR study area includes three streams (Great Miami River, Two Mile Creek, and the Hydraulic Canal), one wetland (Wetland A), and three ponds (Pond 1, Pond 2, and Pond 3). The flow characteristics, connectivity, and quality of these features were assessed during the ecological survey and are summarized below. The locations of the features are shown in [Figure 4-7](#).

The streams within the study area (Great Miami River, Two Mile Creek, and Hydraulic Canal) are perennial streams, meaning they maintain surface flow most of the year. These streams are considered warmwater habitat (WWH), indicating they can support a diverse community of aquatic organisms. The Hydraulic Canal is a feature which was constructed in the mid-19th century to divert water from the Great Miami River to power local industries. This reach of the Great Miami River is impounded by a low head dam and subject to gravel mining operations within the channel south of the dam.

Ohio EPA defines three categories of wetland based upon their quality (Category 1, 2, and 3). Wetland A is a Category 1 wetland, meaning it exhibits minimal ecological function and integrity.

Ponds 1, 2, and 3 all appear to be manmade features. Pond 1 appears to be isolated (not connected to any other waterways). Ponds 2 and Pond 3 currently function as stormwater retention/detention basins.



- Legend**
- West Section Ecological Study Limits
 - Central Section Ecological Study Limits
 - East Section Ecological Study Limits
 - Ponds
 - Wetlands
 - Streams

0 500 1,000 Feet
(At original document size of 11x17)
1:8,500



Project Location
City of Hamilton
Butler County, OH
Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment
Figure No.
4-7
Title
Streams, Wetlands, and Ponds Map

V:\173620130\environmental\mapping\NHX-Preferred Alignments\NHX-Preferred Alignments.aprx Revised: 2026-04-09 By: rgonzo

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

4.2.1.1 Impacts

No Build Alternative: The No Build Alternative does not impact any streams, wetlands, or ponds.

Preferred Alternative: In the West Section, the Preferred Alternative impacts the Great Miami River for construction of a new bridge. The Central Section traverses primarily developed land, and there are no impacts to streams, wetlands, or ponds. In the East Section, the Preferred Alternative impacts one wetland (Wetland A) and three ponds (Ponds 1, 2, and 3) (see [Table 4-6](#)).

Table 4-6. Summary of Stream, Wetland, and Pond Impacts by NHX

Impact Type	West Section	Central Section	East Section	Total
Stream Impact (linear feet)	490	0	0	0
Wetland Impact (acres)	0	0	0.5	0
Pond Impact (acres)	0	0	0.63	0

Construction activities impacting surface waters result in short-term water quality impacts. Placement and removal of temporary access fills for construction of the new Great Miami River crossing will result in increased siltation and turbidity. Except for the permanent impacts for bridge piers and abutments, the channel will be restored to preconstruction conditions once work is complete.

Additionally, the permanent fill of wetlands and ponds eliminates the ecological function of these features. These effects are restricted to active construction and post-construction stabilization as vegetation becomes reestablished through both natural growth and project-specific erosion control measures.

4.2.1.2 Coordination

The Level 1 ESR was submitted to the Ohio Department of Natural Resources (ODNR), the U.S. Fish and Wildlife Service (USFWS), Ohio EPA, and the U.S. Army Corps of Engineers (USACE) on October 1, 2025 ([Appendix B](#)). The ESR included detailed information on the ecological impacts associated with the Preferred Alternative. ODNR and USFWS provided comments on October 29, 2025, related to project impacts on threatened and endangered species. These comments and ODOT's responses are summarized in [Section 4.2.3.2](#). No comments were received from Ohio EPA within the 30-day review timeframe. The USACE contacted ODOT on October 1, 2025, to request a Jurisdictional Determination field review. ODOT responded that a Jurisdictional Determination field review would be scheduled when Stage 1 design is available. The USACE did not have any project comments. Copies of agency comments are included in [Appendix B](#).

4.2.1.3 Mitigation

Impacts to streams and wetlands will be mitigated in accordance with the Clean Water Act's permitting requirements under Sections 404 and 401. Short-term water quality impacts during construction will be minimized using sediment and erosion control measures, implemented in compliance with ODOT Construction and Materials Specifications (CMS). Impacts to environmental resources associated with contractor-determined waste and borrow and staging locations will be addressed per ODOT CMS 107.10.

Long-term water quality impacts related to increased impervious surface area and roadway runoff will be addressed through post-construction best management practices per ODOT Location and Design (L&D) Manual guidance, and the replacement of lost ecological function by purchasing mitigation credits as required during the permit process.

In addition, EO 11990, *Protection of Wetlands*, requires ODOT to assess potential impacts to wetlands and to avoid, where practicable, adverse effects from occupancy, modification, or destruction. The project satisfies the criteria for a Wetland Finding, indicating that no practicable alternative exists to avoid construction within wetlands. To completely avoid impacts to Wetland A, the alignment would have to shift west, resulting in the relocation of the Humane Society. This finding is supported by the following considerations:

- There is no practicable alternative to the Preferred Alternative. Although the No Build Alternative does not impact any wetlands, it is not practicable because it does not meet the project P&N, detailed in **Section 2**.
- Each of the Build Alternatives evaluated for the NHX project impacts wetlands. Developing an alternative that satisfies the project P&N and completely avoids all wetlands results in substantial adverse impacts to adjacent homes, businesses, or other sensitive environmental resources, and substantially increases project costs. Therefore, avoiding wetland impacts is not practicable.
- The Preferred Alternative includes all practicable measures to minimize harm to wetlands.

Environmental Commitments: The City will obtain all appropriate waterway permits prior to any work within the jurisdictional boundary of any waterway, including wetlands. All applicable waterway permits will be included in the plans, and the permit conditions complied with during construction.

The Sponsor's Design Engineer will add and label the jurisdictional boundaries of wetlands, streams, and ponds to the design plans and indicate areas of avoidance with a "do not disturb" label.

The Sponsor's Design Engineer will add the following construction plan notes to the design plans:

Do not perform any work within the jurisdictional boundaries of any waterway, including wetlands, until the City obtains the necessary waterway permits. Work includes the placement of any temporary or permanent fills.

Demarcate areas marked "do not disturb" in the field prior to construction with temporary construction fencing or similar to protect undisturbed wetlands and streams.

4.2.2 Terrestrial Habitat

The NHX project area is urban in nature. Most of the area has been disturbed by past human activities. These areas include paved roads, parking lots, sidewalks, driveways, as well as maintained lawn and agricultural fields. There are also areas with less disturbance, such as infrequently maintained grassy areas, scrub/shrub growth, and forested land. No unique, rare, or high-quality terrestrial habitats were identified within the NHX project area.

4.2.2.1 Impacts

No Build Alternative: The No Build Alternative does not result in changes to the existing terrestrial habitat in the NHX project area.

Preferred Alternative: The Preferred Alternative impacts approximately 145 acres, 31 of which is undeveloped or natural land (see [Table 4-7](#)).

Table 4-7. Summary of Terrestrial Impacts by NHX Section

Terrestrial Community Impact Type	West Section	Central Section	East Section	Total
Developed Land	24.76 acres	49.37 acres	39.95 acres	114.08 acres
Forested Land	0.55 acre	0.53 acre	5.25 acres	6.33 acres
Open Water	5.31 acres	0 acre	0.63 acre	5.94 acres
Other Undeveloped / Cultivated Crops	2.30 acres	0.36 acre	16.40 acres	19.06 acres

Project-related impacts to terrestrial habitat are anticipated for construction of the new boulevard, sidewalks and shared-use paths, right-of-way, medians, and drainage. Most of the habitats being converted are highly disturbed, developed areas due to the urban nature of the NHX project area. The loss of habitat is expected to have only minimal effects on species commonly found in the area, as these species are well-adapted to disturbed environments.

4.2.2.2 Coordination

Terrestrial impacts for the Preferred Alternative were coordinated with ODNR, USFWS, Ohio EPA and USACE as part of the Level 1 ESR, as described in [Section 4.2.1.2](#).

4.2.2.3 Mitigation

Complete avoidance is not feasible without causing greater effects to residential and commercial properties, or to potential wooded habitat for protected bat species. The impacts presented above are based on preliminary limits and will be reduced during detailed design. Mitigation for impacts to forest considered suitable bat habitat has been coordinated with the USFWS, as outlined in [Section 4.2.3](#) below. No additional mitigation for terrestrial habitat impacts is proposed, and no environmental commitments are necessary.

4.2.3 Threatened and Endangered Species

Butler County is within the known range of the federally endangered Indiana bat and the northern long-eared bat, the federally threatened eastern massasauga rattlesnake, and the federally endangered rayed bean mussel. It is also within the range of the tricolored bat, which is currently proposed for federal listing, and the bald eagle, which is protected under the Bald and Golden Eagle Protection Act.

The NHX project also lies within the known range of several state-listed species, including the state endangered little brown bat, cave salamander, and upland sandpiper, as well as the state threatened Kirtland's snake, least bittern, and black-crowned night-heron.

The following sections include descriptions of the species and their protected habitats, along with anticipated project impacts for each species.

4.2.3.1 Impacts

4.2.3.1.1 Federally Listed Species

No Build Alternative: The No Build Alternative does not result in direct impact to any federally threatened or endangered species.

Preferred Alternative: The impact determinations to federally threatened and endangered species are based, in part, on the suitable habitat impacts for that species.

Suitable habitat for protected bat species (**Indiana bat, northern long-eared bat, and tricolored bat**), includes any forested area at least 0.5-acre in size that contains potential roost trees—live or dead trees with exfoliating bark, cracks, crevices, or cavities. Smaller woodlots also qualify if they are in the vicinity of larger wooded areas. A potential maternity roost tree (PMRT) is a tree that can support a colony of reproductive female bats and their young. These trees typically have loose bark or cavities and are in areas with good sun exposure and access to nearby wooded habitat.

The quality of the suitable wooded habitat (SWH) depends on the distance from the existing edge of pavement (EOP) and the vicinity to perennial waterbodies. Bridges over streams may serve as summer roosting habitat. In winter, bats hibernate in caves, mines, or other underground structures with cool, humid, and stable conditions.

Impacts to SWH for the Preferred Alternative are detailed in **Table 4-8** and shown in **Figure 4-8**.

Table 4-8. Summary of SWH Impacts by NHX Section

SWH Impact Type	West Section	Central Section	East Section	Total
0–100 ft from EOP	0.30 acre	0.27 acre	1.13 acres	1.7 acres
>100 ft from EOP	0.25 acre	0.26 acre	4.12 acres	4.63 acres
Number of PMRTs	0	0	0	0

The wooded habitat within the study area is moderately disturbed, consisting of a mix of younger, scrubby growth interspersed with older, mature trees. A survey of the study area found no suitable winter hibernacula (e.g., caves or mine openings) for bat species. Additionally, no impacted bridges within the study area contain suitable bat habitat. The project is not located within one mile of known records of endangered bats (see Threatened and Endangered Species Records Request results in **Appendix B**).

Suitable habitat for the **eastern massasauga rattlesnake** includes wet prairies, meadows, and adjacent wooded or shrubby edges. Small areas of potentially suitable habitat exist in the East Section. The NHX project is not located within one mile of a known record of the eastern massasauga rattlesnake, and this species is not expected to be present (see Threatened and Endangered Species Records Request results in [Appendix B](#)).

This section of the Great Miami River is listed as a “Group 4” stream by ODNR. A Group 4 listing by ODNR indicates the stream may contain endangered **rayed bean and other protected mussels**. Based on the Butler County Natural Heritage records, no federally listed mussel species have been observed in this reach in the last 40 years. An Environmental DNA (eDNA) study in 2023 sampled three sites for eDNA analysis, including the Great Miami River (NW Washington Crossing and Gordon/Rhea Crossing), and the Hydraulic Canal (North 9th Street and Miami Street Connections). This study analyzed the DNA present in the water column to determine what mussels were present. Eight mussel species were detected, but no federally listed species were detected at any of the three sampling sites. A copy of the eDNA mussel survey is available on the North Hamilton Crossing Website ([Appendix A](#)).

A Phase 1/Phase 2 mussel survey was completed in September 2025 to confirm the results of the eDNA study within the Preferred Alternative. No federally listed mussel species were collected. A copy of this survey report is available on the North Hamilton Crossing Website ([Appendix A](#)).

Bald eagles typically nest in mature trees near open water, and some suitable habitat was observed near the Great Miami River and Hydraulic Canal. This habitat is impacted by the Preferred Alternative. No bald eagle nests were documented within 0.5 miles of the project in the 2025 breeding season. No eagles or nests were observed during field surveys conducted in summer and fall of 2024.

Based on the presence of and proposed impact to suitable habitat, ODOT consulted with the USFWS to determine the extent of impact the project has on each federally protected species (see [Section 4.2.3.2](#)). The impact determinations for the Preferred Alternative are presented in [Table 4-9](#).

Table 4-9. Federally Listed Species in Butler County and NHX Impact

Common Name	Scientific Name	Listing Status	Impact Determination
Indiana bat	<i>Myotis sodalis</i>	Endangered	May Affect, Likely to Adversely Affect
Northern long-eared bat	<i>Myotis septentrionalis</i>	Endangered	May Affect, Likely to Adversely Affect
Bald eagle	<i>Haliaeetus leucocephalus</i>	Species of Concern	No Effect
Eastern massasauga	<i>Sistrurus catenatus</i>	Threatened	No Effect
Rayed bean	<i>Villosa fabalis</i>	Endangered	May Affect, Not Likely to Adversely Affect
Tricolored bat	<i>Perimyotis subflavus</i>	Proposed endangered	May Affect, Not Likely to Adversely Affect

4.2.3.1.2 State Listed Species

No Build Alternative: The No Build Alternative does not directly impact any state listed threatened or endangered species.

Preferred Alternative: A Natural Heritage Database request was submitted to ODNR on June 11, 2024, to obtain any known records of listed species within a one-mile radius of the project study area, and no records were returned by this search (see Threatened and Endangered Species Records Request results in [Appendix B](#)). A summary of each species with a known range in Butler County, its habitat, and the impact determination for the Preferred Alternative is described below and in [Table 4-10](#).

There is one state listed species within the project area which may be impacted, the **Kirtland's snake**. It is a reclusive species that prefers wet fields and meadows. The East Section contains limited suitable habitat, and the presence of this species is assumed. While impacts to the species are possible, they are unlikely due to the species' moderate mobility and the absence of high-quality habitat.

Table 4-10. State Listed Species in Butler County and NHX Impact

Species Common Name	Scientific Name	Listing Status	Impact Determination
Little brown bat	<i>Myotis lucifugus</i>	Endangered	No Impact
Kirtland's snake	<i>Clonophis kirtlandii</i>	Threatened	Not Likely to Impact
Cave salamander	<i>Eurycea lucifuga</i>	Endangered	No Impact
Upland sandpiper	<i>Bartramia longicauda</i>	Endangered	No Impact
Least bittern	<i>Ixobrychus exilis</i>	Threatened	No Impact
Black-crowned night-heron	<i>Nycticorax nycticorax</i>	Threatened	No Impact

No records of **little brown bat** exist within one mile of the project. Like the federally protected bat species, the little brown bat roosts in trees with exfoliating bark, cavities, or crevices, and occasionally in barns or bridges. In winter, it hibernates in caves or mines. As described in [Section 4.2.3.1](#), SWH is impacted by the Preferred Alternative. No suitable winter hibernacula occur within the NHX project area, and no barns or bridges are proposed to be impacted. Due to the implementation of seasonal tree clearing restrictions, described in detail in [Section 4.2.3.3](#), no impacts to little brown bat are anticipated.

The **upland sandpiper** nests in dry grasslands and pastures. Limited suitable habitat is present in the East Section. Presence is assumed, but impacts are not expected due to high mobility and availability of unaffected habitat outside the NHX project area.

The **black-crowned night-heron** forages in wetlands and roosts in nearby trees, nesting in vegetation near water. Limited habitat may be affected by the Preferred Alternative. Presence is assumed, but impacts to this bird species are unlikely due to its high mobility and the availability of nearby unaffected habitat.

Cave salamanders inhabit caves, springs, and limestone streams. **Least bitterns** prefer dense emergent wetlands. No suitable habitat for either species occurs within the NHX project area, and no impacts to either species are expected.

The Great Miami River provides suitable habitat for **state-listed freshwater mussels**. No state-listed mussel species were identified in the Natural Heritage Database records search for the project. The 2023 eDNA study detected eight mussel species including the state endangered pocketbook (*Lampsilis ovata*) and the state species of concern elktoe (*Alasmodonta marginata*).

A Phase 1/Phase 2 mussel survey was completed in September 2025 to confirm the results of the eDNA study within the Preferred Alternative and to determine the presence or probable absence of listed mussel species. Four individuals were collected during the survey, three of which were elktoe. The other individual collected was a pink heelsplitter (*Potamilus alatus*), which is not a state listed species. It is likely that the repeated and persistent disturbance by the gravel mining operation in this reach is a negative influence on the mussel community south of the dam. The Phase 1/Phase 2 mussel survey was submitted to ODOT on November 7, 2025, for review and coordination ([Appendix A](#)).

4.2.3.2 Coordination

As described in [Section 4.2.1.2](#), impacts for the Preferred Alternative were coordinated with ODNR, USFWS, Ohio EPA, and USACE as part of the Level 1 ESR. Ohio EPA did not provide project comments. The USACE requested a Jurisdictional Determination field review on October 1, 2025. ODOT responded that a Jurisdictional Determination field review would be scheduled when Stage 1 design is available. ODNR and USFWS provided comments on October 29, 2025. These comments and ODOT's responses are summarized below.

ODNR: To address potential impacts to the federally protected Indiana bat, northern long-eared bat, little brown bat, and tricolored bat, and the state endangered little brown bat, ODNR recommended tree and/or limb clearing only occur from October 1 through March 31. ODNR also recommended that a winter bat habitat assessment be conducted to determine if potential hibernacula are present within the NHX project area. ODNR stated that this project must not have an impact on native mussels, listed or unlisted, and requested information to indicate that no mussel impacts will occur. ODNR noted that due to the location, the type of habitat within the NHX project area, and the type of work proposed, this project is not likely to impact the Kirtland's snake and the cave salamander.

In response to ODNR comments, ODOT stated that tree clearing will only occur between October 1 and March 31 and noted that the requested bat hibernacula survey was provided in the ESR. ODOT provided the Phase 1/Phase 2 mussel survey report to ODNR on November 17, 2025, noting that four mussels of two species were found during the Phase 1/Phase 2 mussel survey and requested that no mussel relocation be required based on the low number of mussels found. ODNR concurred with the Phase 1/Phase 2 mussel survey report findings and granted ODOT's request that no further mussel work be required for this project. Copies of coordination between ODNR and ODOT, and ODNR approval, are included in [Appendix B](#).

USFWS: USFWS confirmed that the proposed project's effects are consistent with those analyzed in the Programmatic Biological Opinion (PBO) and concurred with ODOT's determination that the project is likely to adversely affect Indiana bats and northern long-eared bats and may affect but is not likely to jeopardize the continued existence of the tricolored bat. USFWS noted that 9.46 acres of credits will be debited from a USFWS-approved mitigation site. The USFWS stated that all workers should be instructed not to handle any live, dead or injured bats discovered at the project site. Any party finding a dead, injured, or sick specimen must promptly notify the Ohio Field Office at (614) 416-8993. If a specimen is discovered, it should be preserved in the best possible condition and disturbance minimized pending further direction from USFWS. A copy of the USFWS response letter is included in [Appendix B](#).

The Phase 1/Phase 2 mussel survey was also provided to USFWS on November 17, 2025. As no threatened or endangered species were amongst the individuals found, USFWS concurred with ODOT's

determination that the project may affect but is not likely to adversely affect the rayed bean. A copy of USFWS approvals is included in [Appendix B](#).

4.2.3.3 Mitigation

ODOT assumes the presence of federally protected bat species within the study area and the preliminary work limits of the Preferred Alternative. Based on the project's type, location, and anticipated impacts, and in accordance with the 2016 Ohio Programmatic Biological Opinion (OH-PBO) and the July 2023 amendment, the project may affect and is likely to adversely affect both the Indiana bat and the northern long-eared bat and may affect but is not likely to adversely affect the tricolored bat.

The impacts described in the Level 1 ESR are based on a worst-case limit, intended to encompass all possible areas of disturbance before detailed design is complete. As such, it is anticipated that the acreage of impacts to SWH will be reduced prior to construction. To address potential impacts to bat species, the following avoidance, minimization, and compensation measures will be implemented as outlined in the OH-PBO:

- Impacts to aquatic resources, forested areas, and upland habitats have been minimized during project development. The project footprint will be minimized to the extent practicable during detailed design.
- All phases/aspects of the project will be designed to avoid tree removal beyond that required to implement the project.
- To avoid impacts to protected summer roosting bats, SWH will only be cleared between October 1 and March 31, when the species would not be present.
- Construction fencing or similar will be installed prior to any tree clearing to ensure contractors stay within clearing limits. City will ensure that contractors understand clearing limits and how they are marked in the field.

Environmental Commitments: To compensate for the SWH removal related to this project, 9.46 acres of high-quality forested land that provides summer roosting and foraging habitat for protected bat species will be preserved in perpetuity. The preserved acreage is based on the replacement requirements outlined in the OH-PBO. The acreage will be purchased from an approved bat conservation bank or other USFWS-approved mitigation site. If significant changes are made to the amount of habitat being removed, consultation with USFWS will be re-initiated and habitat preservation/methods will be re-calculated.

The Sponsor's Design Engineer will add the following construction plan notes to the design plans:

To minimize impacts to state and federally listed bats, do not remove trees from April 1 through September 30. Perform all necessary tree removal from October 1 through March 31. Demarcate clearing limits in the field with temporary construction fencing or similar to avoid any unauthorized tree clearing. City of Hamilton will hold a preconstruction meeting to ensure that contractors understand clearing limits and how they are marked in the field. For the purposes of this note, a tree is defined as a live, dying, or dead woody plant, with a trunk 3 inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet.

Instruct all workers not to handle any live, dead or injured bats discovered at the project site. Any party finding a dead, injured, or sick specimen must notify the Ohio Field Office at (614) 416-8993 within 24

hours. Biological material must be preserved in the best possible condition; therefore, project personnel are responsible for ensuring that any evidence essential for determining the cause of death or injury is not unnecessarily disturbed.

4.2.4 Floodplains and Hydrology

Floodplain impacts must be evaluated under two overlapping regulatory frameworks: First, floodplains are regulated through the National Flood Insurance Program (NFIP) administered by the Federal Emergency Management Agency (FEMA). Second, floodplain impacts must be considered and acknowledged in any NEPA document, as required by EO 11988, *Floodplain Management*.

The NHX project intersects with the 100-year floodplain and floodway of the Great Miami River. The 500-year floodplain is adjacent to the north. Flow in the study reach is influenced by backwater from the Black Street Bridge (about 700 feet downstream) and the two-mile dam (about 750 feet upstream). Backwater is the extra depth of water upstream of a bridge or dam because the structure interferes with the river's ability to flow freely. Additionally, this reach of the Great Miami River is protected by levees. The levees were built to keep floodwaters within the river channel through the city and to prevent flooding of adjacent areas. The Miami Conservancy District (MCD) is responsible for managing levees and flood protection systems in this area.

4.2.4.1 Impacts

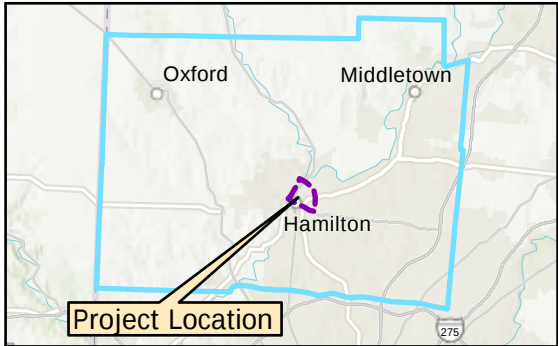
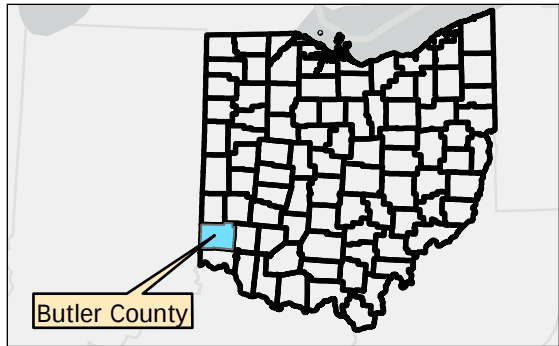
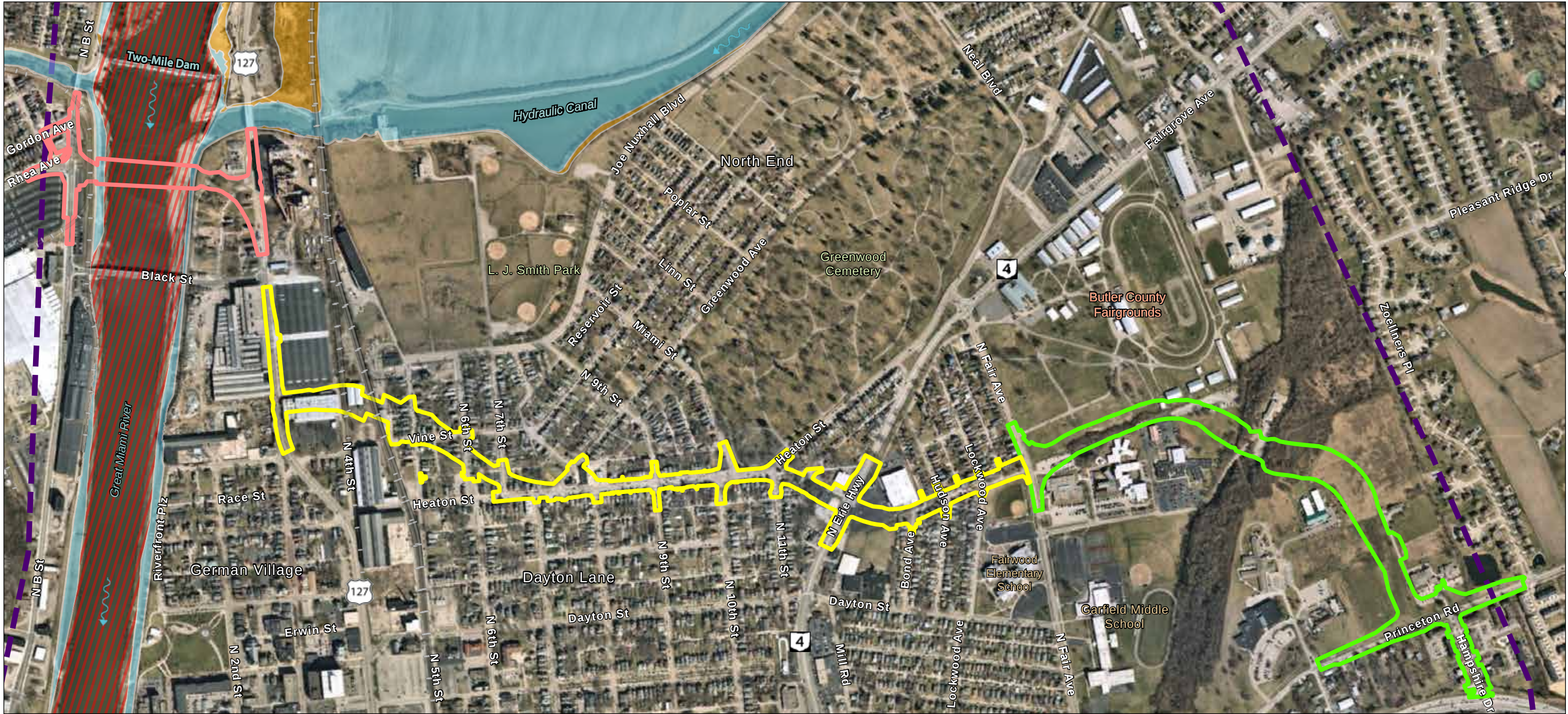
No Build Alternative: The No Build Alternative does not result in impacts to floodplains or floodways.

Preferred Alternative: Impacts are presented as acres and were calculated based on the area within preliminary impact limits for the bridge crossing. These limits include the footprint of the new bridge and areas of anticipated disturbance for construction, including temporary fill areas. The total permanent fill in the floodway is expected to be less than the impacts reported below.

The Preferred Alternative reduced impacts to both the Great Miami River floodway and the 100-year floodplain compared to the other alternatives. The Preferred Alternative bridge is proposed in an area protected by levees which restrict the floodplain area. Construction near the levees requires coordination and permitting from MCD. **Figure 4-9** shows the FEMA floodplain areas and the levees in the NHX project area. The new bridge will impact 0.36 acre of the 100-year floodplain and 2.33 acres of the floodway for a total impact of 2.37 acres. A Hydraulic Analysis Report is being completed for the West Section of the Preferred Alternative. In this area, MCD does not allow new construction along the river to increase flood elevations during peak flood conditions. However, due to the addition of a new structure in the river, a slight rise in the regulated water surface elevation¹⁷ is currently anticipated. This slight increase is expected to be contained within the existing levee system, and will not impact adjacent properties.

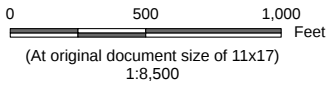
¹⁷ Regulated water surface elevation is the water level used as a reference for managing and evaluating flood conditions.

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Legend

- West Section Preliminary Impact Limits
- Central Section Preliminary Impact Limits
- East Section Preliminary Impact Limits
- 100 Year Floodplain
- 500 Year Floodplain
- Floodway
- NHX Study Area



Project Location
City of Hamilton
Butler County, OH

Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment

Figure No.
4-9

Title
FEMA Floodplains Map

Prepared by RG on 2026-04-08
173620130

Notes:
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Base Features Produced from Project Design Elements, FEMA (2025)
3. Background Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
World Topographic Map: City of Hamilton, OH; Esri, TomTom, Garmin, SafeGraph, FAO, METINASA, USGS, EPA, NPS, USFWS
Hybrid Reference Layer: Esri Community Maps Contributors, City of Hamilton, OH; Butler County, Ohio Rail Development Commission, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Imagery: Vector
Neatmap - February 2023; © OpenStreetMap (and) contributors, CC-BY-SA
World Hillshade: Esri, NOAA, USGS

4.2.4.2 Coordination

A February 2024 letter notified MCD of the project and requested any applicable local flood zone regulations if they differ from FEMA regulations. On June 25, 2024, MCD, the City, and the project design team held a meeting to discuss hydraulic analysis and design requirements. In September 2024, MCD provided these requirements and additional information. Copies of the coordination emails and meeting minutes are included in [Appendix B](#). The hydraulic analysis will be provided to MCD for approval when complete.

Coordination with FEMA will be needed to ensure compliance with flood regulations and standards. A FEMA Conditional Letter of Map Revision (CLOMR), FEMA's conditional approval of proposed floodplain/floodway changes before construction, is likely required. Coordination with local floodplain administrators (City and Butler County) will be conducted during detailed design of the bridge.

4.2.4.3 Mitigation

EO 11988 requires federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains. As the project includes a new bridge crossing over the Great Miami River, there are no practicable alternatives that avoid the floodplain/floodway. However, the Preferred Alternative reduces impacts to flood hazard areas to the greatest extent possible, and bridge piers permanently impact less acreage than the 2.37 acres reported above.

Due to new fills in the floodway, NHX will likely result in a rise in base flood elevation for the Great Miami River. This rise is anticipated to be contained within the existing constraints of the levee system. Therefore, this project is not expected to have positive or negative, concentrated or dispersed, and short-term or long-term impacts to lives and property or the natural and beneficial floodplain values.

Environmental Commitments: The Sponsor's Design Engineer will ensure that the project complies with all applicable federal, state, and local floodplain protection standards. Coordination with the local floodplain administrators (City and Butler County), FEMA, and MCD will continue as final plans are developed.

The City will obtain a floodplain permit prior to plan file.

The City will complete a Floodplain Statement of Findings prior to construction and will post it on the project website for 30 days.

The City will obtain a permit from MCD prior to construction.

4.2.5 Drinking Water

Drinking water resources include residential wells, public water systems (from ground water and surface water sources), drinking water source protection areas and sole source aquifers. The USEPA administers the Sole Source Aquifer (SSA) Protection Program and associated project review requirements under the Safe Drinking Water Act. The Ohio EPA implements state drinking water protection programs, including the Wellhead Protection and Source Water Assessment and Protection (SWAP) programs, and is



responsible for delineating and managing drinking water source protection areas and coordinating with public water systems.

Based on a review of the Ohio EPA Drinking and Ground Waters online mapping system, the project is partially located within the boundaries of the designated Great Miami Buried Valley Aquifer (GMBVA) and the OKI Extension of the Miami Buried Valley Aquifer (OKI Extension). The GMBVA and OKI Extension (southern portion) are recognized as SSAs by USEPA. The SSA designation applies only to aquifers serving as the sole or principal source of drinking water for the petitioned area and which, if contaminated, creates a significant hazard to public health. In addition, based on a review of ODNR's Ohio Water Wells online database, there are nine wells within a 50-foot buffer of project construction limits for the Preferred Alternative. See [Figure 4-10](#) and [Figure 4-11](#) for the location of the SSA and ODNR well records.

4.2.5.1 Impacts

No Build Alternative: There are no impacts to drinking water resources as a result of the No Build Alternative.

Preferred Alternative: The Preferred Alternative is partially underlain by the SSAs, including the new bridge crossing over the Great Miami River.

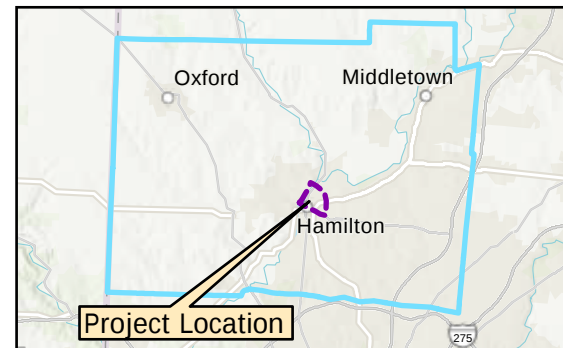
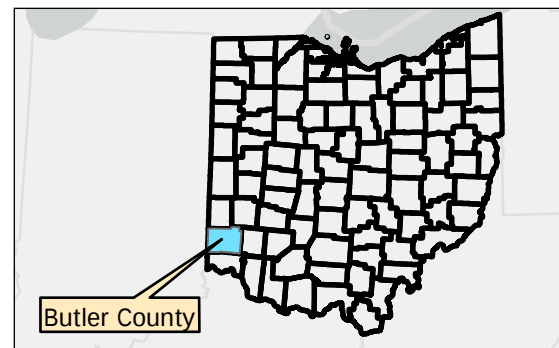
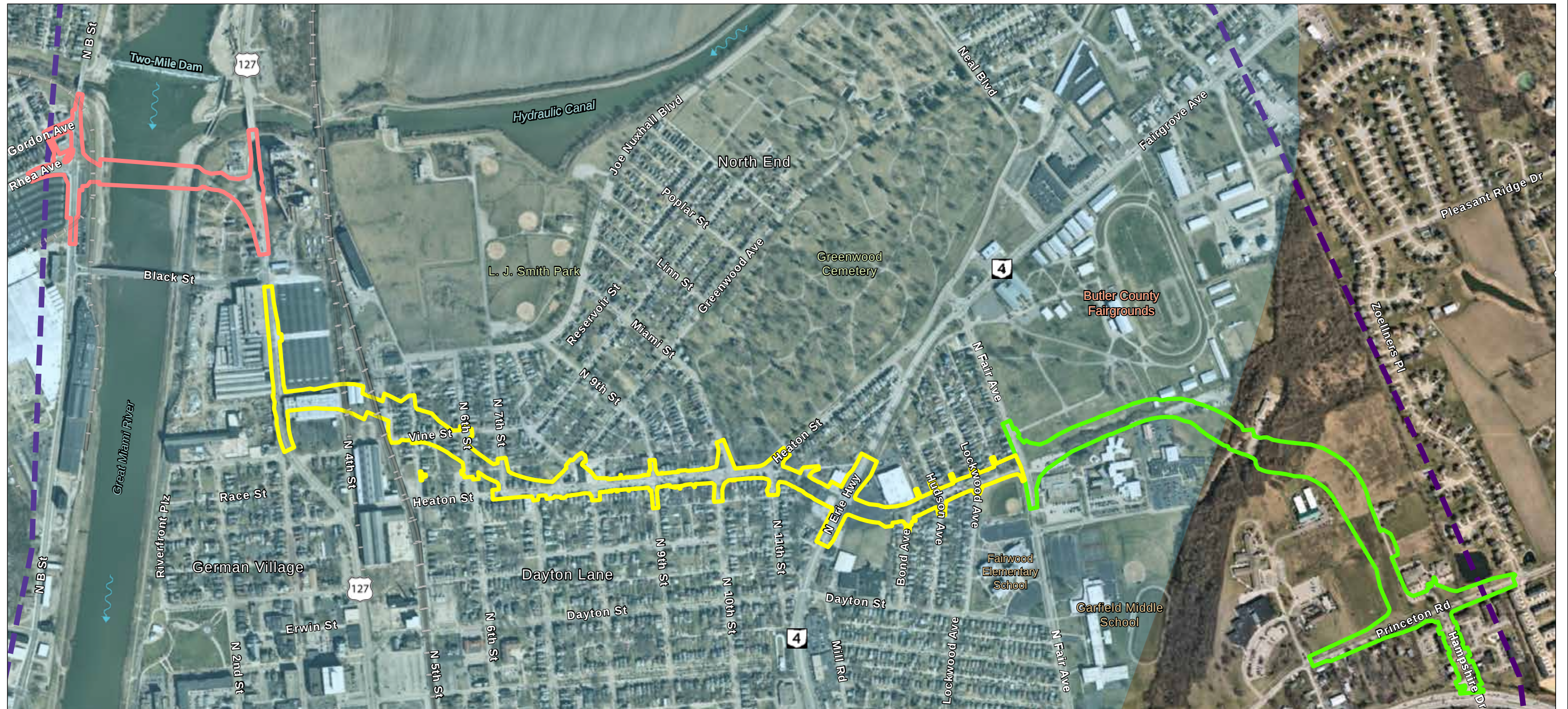
As previously noted, there are nine wells in the vicinity of the Preferred Alternative. One of these wells is identified as a domestic well (ODNR Log No. 217443). Of the other eight wells, one is used for monitoring (ODNR Log No. 3021737) and five for dewatering (ODNR Log Nos. 2047912, 2047013, 2047014, 2047015, and 2047016). The usage of two wells is not provided but both are owned by businesses (ODNR Log Nos. 114526 and 95060). The ODNR Division of Water Resources *Water Withdrawal Facility Locator Tool* shows no public water locations within the NHX project area.

4.2.5.2 Coordination

In accordance with the FHWA/USEPA Memorandum of Understanding on project review for SSAs, coordination with the USEPA is required. Coordination is conducted by ODOT through the Office of Environmental Services (OES), which serves as the liaison and submits project information for review. This coordination will be completed during the detailed design phase of the project.

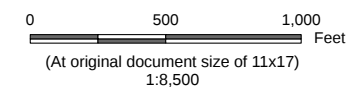
Additionally, on October 2, 2025, a letter with Preferred Alternative mapping was sent to the City's Director of Utility Operations outlining mitigation measures to prevent impacts to the SSAs during project construction. These measures include adherence to standard ODOT construction procedures, and the inclusion of a construction plan note in the project plans, as detailed in the following section. This coordination is documented in [Appendix B](#).

If a private drinking water well is impacted, a new well may be drilled or the property can be connected to the local public water supply. If this is not feasible, the property and/or dwelling may be acquired.



Legend

- West Section Preliminary Impact Limits
■ Central Section Preliminary Impact Limits
■ East Section Preliminary Impact Limits
■ Greater Miami Buried Aquifer and OKI Extension
■ NHX Study Area



Project Location
Prepared by RG on 2026-04-08

Butler County, OH

Client/Project 173620130
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment

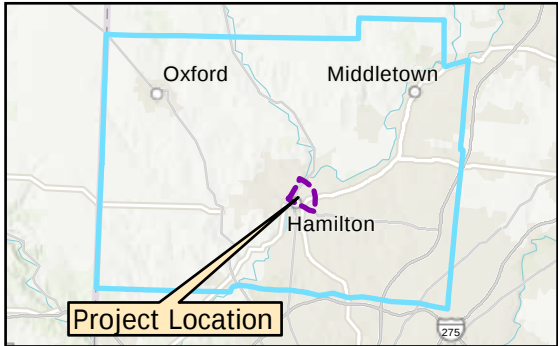
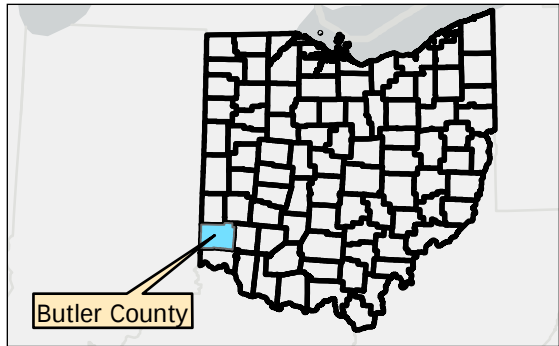
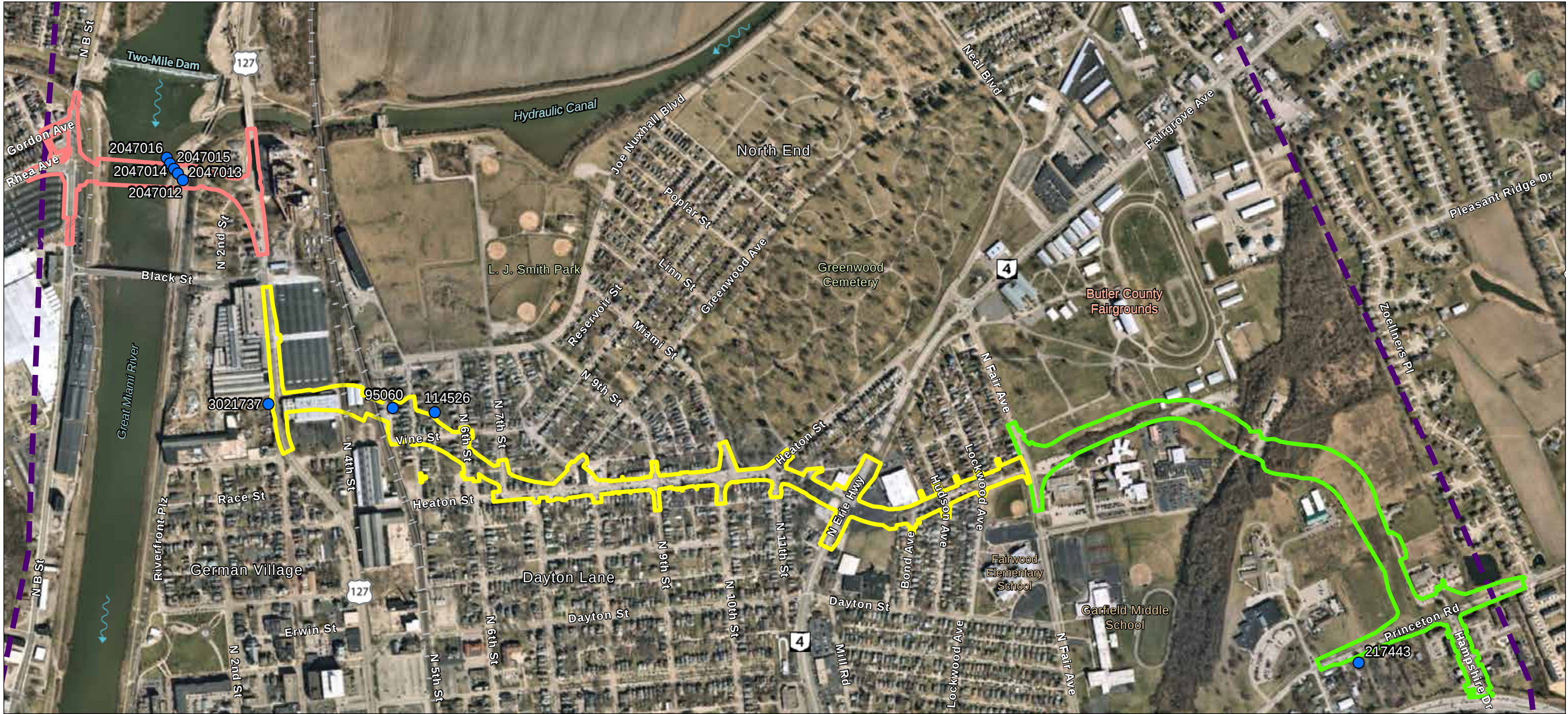
Figure No.

4-10

Title
Drinking Water Resources Map

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
 2. Data Sources: Base Features Produced from Project Design Elements, OEPA (2025)
 3. Background/Light Grey Base: Esri, TomTom, Garmin, FDOT, NOAA, USGS, EPA, USFWS
 4. Topographic Data: City of Hamilton, OH, Esri, TomTom, Garmin, SafeGraph, FDOT, METLINASA, USGS, EPA, NPS, USFWS
 Hybrid Reference Layer: Esri Community Maps Contributors, City of Hamilton, OH, Butler County, Ohio Rail Development Commission, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METLINASA, USGS, EPA, NPS, US Census Bureau, USGS
 World Imagery: Vector
 Neemap - February 2023, © OpenStreetMap (and) contributors, CC-BY-SA
 World Hillshade: Esri, CGIAR, USGS

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Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Base Features Produced from Project Design Elements, ODNR (2025)
3. Background Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
World Topographic Map: City of Hamilton, OH; Esri, TomTom, Garmin, SafeGraph, FAO, METINASA, USGS, EPA, NPS, USFWS
Hybrid Reference Layer: Esri Community Maps Contributors, City of Hamilton, OH; Butler County, Ohio Rail Development Commission, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Imagery: Vantor
Neatmap - February 2023 © OpenStreetMap (and) contributors, CC-BY-SA
World Hillshade: Esri, COGAS, USGS

Legend

- ODNR Water Wells
- ▭ West Section Preliminary Impact Limits
- ▭ Central Section Preliminary Impact Limits
- ▭ East Section Preliminary Impact Limits
- ▭ NHX Study Area

0 500 1,000 Feet
(At original document size of 11x17)
1:8,500



Project Location
City of Hamilton
Butler County, OH
Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment

Prepared by RG on 2026-04-08

173620130

Figure No.

4-11

Title

ODNR Water Wells Map

4.2.5.3 Mitigation

To protect the City's drinking water supply during construction, ODOT CMS 107.19 will be followed and management plans for control/containment of fuels, oils, and other construction materials will be implemented during construction.

The bridge over the Great Miami River will be designed with no over-the-rail drainage, and no scuppers on the bridge with direct flow to the river. If scuppers are required, they will enter a drainage collection system.

Environmental Commitments: During detailed design, ODOT OES will submit a letter with project information to USEPA. ODOT will provide any requirements resulting from this coordination to the Sponsor's Design Engineer to be incorporated into final design and construction documents.

The Sponsor's Design Engineer will add the following construction plan note to the design plans:

This project is located within the Great Miami Buried Valley Aquifer (GMBVA) and the OKI Extension of the Miami Buried Valley Aquifer, both of which are Sole Source Aquifers (SSA). Use proper containment and diking in refueling areas. Do not store fuels, toxic/hazardous materials, and chemicals near drainage ways, ditches, or streams. Maintain a spill kit on-site throughout construction activities. Immediately mitigate any event, such as a spill of fuels, oils, or chemicals, that could threaten to contaminate the drinking water supply. Report all spills or events to the City of Hamilton Public Works Department at 513-785-7206. If the spill is a reportable amount (per Ohio EPA's Release Reporting Requirements), contact City of Hamilton Fire Department at 513-785-7500 or the Ohio EPA's Spills Hotline 1-800-282-9378 for clean-up of the spill.

Impacted drinking water wells (if encountered during project construction) will be properly abandoned in accordance with the State Coordinating Committee on Ground Water's Regulations and Technical Guidance for Sealing Unused Water Wells and Boreholes, and a suitable water replacement plan will be developed if/when a well owner is impacted by the construction project.

During detailed design of the bridge over the Great Miami River, the Sponsor's Design Engineer will ensure that no over-the-rail drainage or scuppers with direct outlet to the river are incorporated into the bridge's drainage system.

4.3 Cultural Resources

In compliance with Section 106 of the National Historic Preservation Act of 1966, properties listed in or eligible for listing in the NRHP were identified and evaluated for potential effects by the project. During the FS, the following resources were identified within the NHX study area:

- German Village Historic District (NRHP-listed)
- Hamilton Downtown Historic District (NRHP-listed)
- Dayton-Campbell Historic District (NRHP-listed)
- Greenwood Cemetery Historic District (NRHP-listed)
- Black Street Bridge (NRHP-eligible)

Other notable cultural resources identified include remnants of the Miami and Erie Canal in the northern portion of the NHX study area, as well as several archaeological sites on the Ohio Archaeological Inventory (OAI) including a Fort Ancient Village site, a former mound, and remnants of the Fort Hamilton archaeological site.

Potential impacts to these resources were an important factor in which alternatives were recommended for further study. After completion of the FS, additional engineering analysis led to the modified Vine Street Connection (the Preferred Alternative for the Central Section), which was refined to avoid impacts to the German Village Historic District and to avoid relocation of the Stone Tavern (NRHP-eligible).

4.3.1 Section 106 Consulting Parties

Under Section 106, Consulting Parties are invited to participate in the process and are provided opportunities to participate at specific steps, including identification of historic properties, determination of effect, and identification of mitigation measures for adverse effects. As part of the NHX Section 106 process, invitations were sent to 21 entities including: Ohio State Historic Preservation Office (Ohio SHPO), Ohio Archaeological Council (OAC), local and county historical societies, neighborhood associations, Dayton Campbell and German Village Historic Districts, the City, Greenwood Cemetery Historic District, the Greater Hamilton Chamber of Commerce, BCTID, and others. Applications to be Consulting Parties were also provided to the general public at the in-person Public Open House held on June 24, 2025, as well as on the North Hamilton Crossing Website (<https://www.northhamiltoncrossing.org/consultingparty>).

Of the entities sent Consulting Party invitations, six applied and were accepted as Consulting Parties. These include a resident who lives in the Dayton Lane Historic District and is part of the Lane Library Historic Research Team; a resident who lives in the Dayton Lane Historic District and is involved with 17Strong, the Dayton Lane Historic District Association, and the Rotary Club of Hamilton; two other private residents; the Butler County Historic Society; and the OAC. No additional Consulting Party requests were received. Consulting Party applications and acknowledgement letters are included in [Appendix B](#).

4.3.2 History/Architecture

A Section 106 Scoping Request was prepared in August 2024 which included a comprehensive review of Ohio SHPO and TMS Bridge Inventory records for each of the sections of the NHX study area (West, Central, and East) to determine what cultural resources investigations are required. An area of potential effects (APE) was established of sufficient size to encompass the new roadway locations under review.

In November and December of 2024, a Phase I History/Architecture Survey was completed for the NHX Build Alternatives. A total of 257 resources 50 years of age or older were identified within the APE. The Phase I Report, submitted to ODOT on May 30, 2025, identified two NRHP-listed or NRHP-eligible properties, the Greenwood Cemetery Historic District and Hose House #5. No additional historic districts were identified within the APE. The Phase I History/Architecture Survey is available on the North Hamilton Crossing Website ([Appendix A](#)).

Upon review of the Phase I Report, Ohio SHPO recommended further investigations for three resources: the C.H. & D Railroad Bridge (#105), 905 Heaton Street (OH#BUT0064609), and 701 Greenwood

Avenue (OH#BUT0071609). To address Ohio SHPO's comments, an addendum survey was prepared in October 2025. The C.H. & D Railroad Bridge is outside the APE of the Preferred Alternative and was not evaluated. NRHP-listed or NRHP-eligible sites within the vicinity of the Preferred Alternative are described below and shown in **Figure 4-12**. The Phase I History/Architecture Addendum is available on the North Hamilton Crossing Website ([Appendix A](#)).

Niles Tool Works (609 North 3rd Street/MLK Boulevard) (OHI# BUT0096509) is eligible for inclusion in the NRHP under Criteria A¹⁸ as a representative example of the industrial growth of the City after the construction of the hydraulic canal and through the World Wars, and Criteria C for its association with modern industrial design and technology in the second half of the 19th century. The historic boundary includes the footprint of the extant buildings adjacent to North 3rd Street/MLK Boulevard. and Black Street. The buildings located on the south side and west side of the complex include a 10-foot buffer from the footprint of the extant buildings. Existing public right-of-way is excluded from the historic boundary.

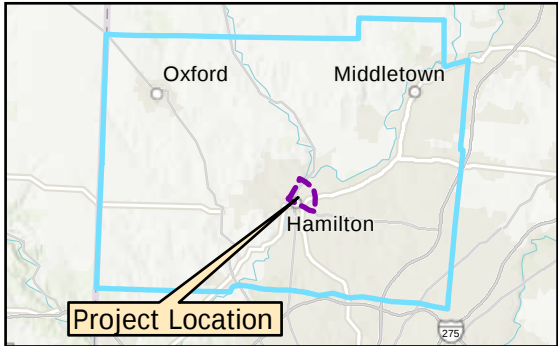
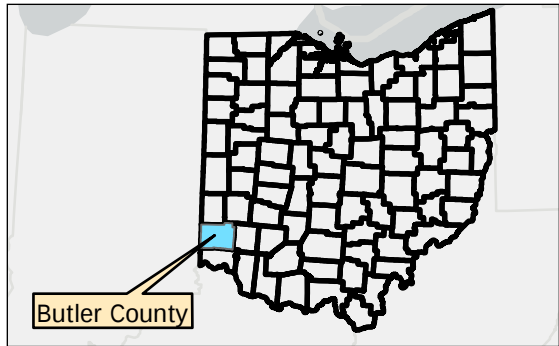
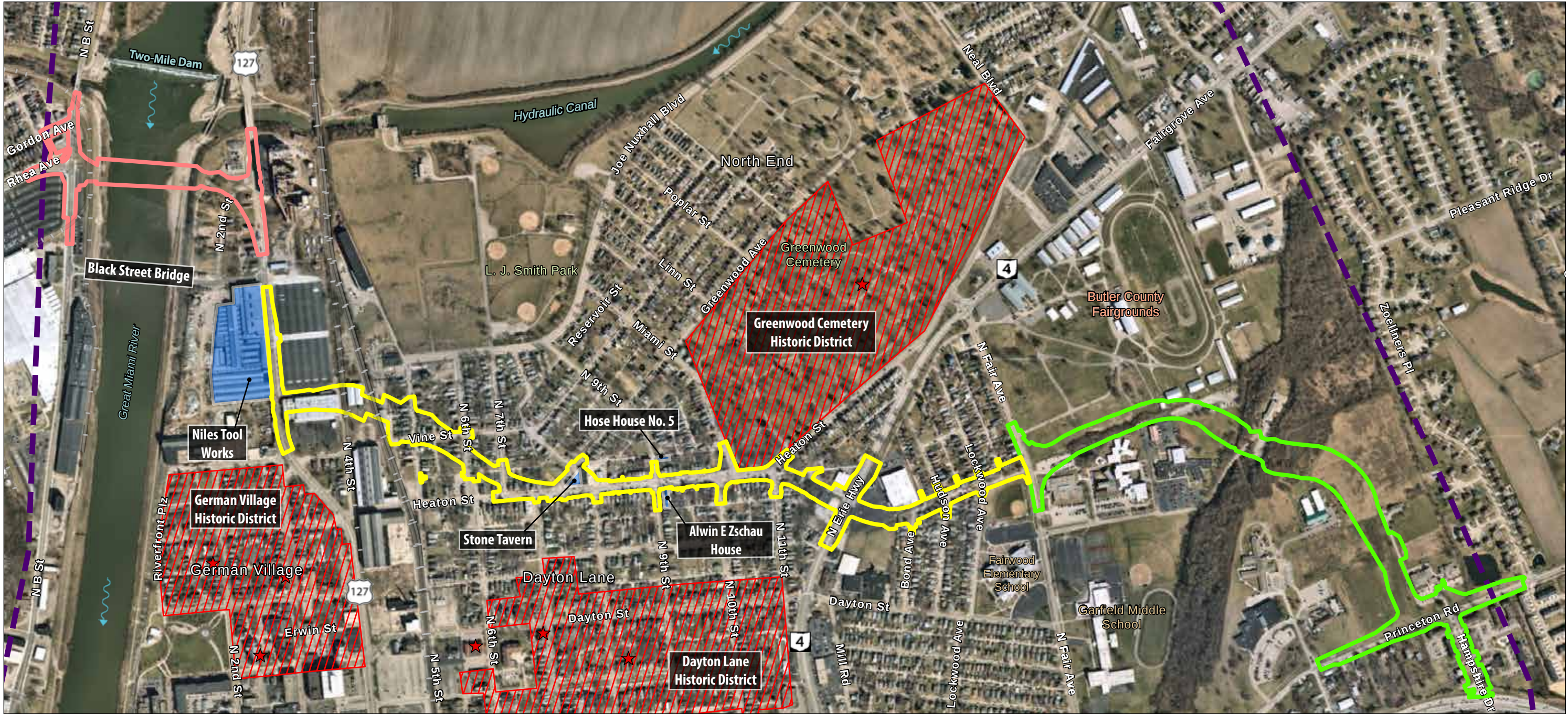
German Village Historic District (NRHP 90002216) is listed in the NRHP under Criteria C (architecture 1829-1831) and Criteria B (association with significant industrialists and businessmen influential in the industrial development of Hamilton). It is characterized by a cohesive collection of architecturally significant residences dating from the early 19th to early 20th centuries. These buildings collectively reflect high-style design and demonstrate strong thematic associations, which contribute to the district's historic integrity. German Village Historic District maintains a high degree of integrity in design, materials, workmanship, setting, and feeling. The district encompasses approximately 45 acres. The historic boundary extends along the west side of North 3rd Street.

Stone Tavern (701 Greenwood Avenue) (OHI# BUT0071609) is eligible for inclusion in the NRHP under Criteria A and Criteria C. The resource is representative of a commercial property that evolved over time to meet the demands of the community during the residential and industrial expansion of Hamilton after the construction of the hydraulic canal through the World Wars. The resource is eligible under Criteria C as representing the work of a local craftsman. The stone building is prominently located at the corner of Heaton Street and Greenwood Avenue. The architectural design, workmanship, materials, and location enhance its visual presence. Changes over time complement the original design and do not obscure its original form or features. The resource retains integrity of location, setting, association, design, workmanship, materials, and feeling. The historic boundary corresponds with the parcel boundary.

Hose House #5 (420 North 9th Street) (OHI# BUT0053509) is eligible for inclusion in the NRHP under Criteria A for its association with the broad pattern of civic firefighting in the late 19th and early 20th centuries, and under Criteria C as an example of a diminishing resource type within the City, representative of its time, place, and function. It is one of the few remaining fire stations built shortly after Hamilton's fire department was incorporated into city government in 1874. Constructed in 1900, as confirmed by its datestone, the building served as a firehouse until 1959. Since then, it has remained largely vacant, despite multiple ownership changes and proposed rehabilitation efforts. The building's design reflects historical firefighting practices, including a hose-drying tower—a feature that became obsolete with technological advancements in the 1910s. The historic boundary corresponds with the parcel boundary.

¹⁸ NRHP eligibility is evaluated using four criteria: Criteria A (significant events), B (significant persons), C (distinctive design or construction), and D (potential to yield important historical or archaeological information). Full criteria definitions are provided in 36 CFR 60.4, Criteria for Evaluation.

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Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Base Features Produced from Project Design Elements, S:\P\ (2025)
3. Background Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
World Topographic Map: City of Hamilton, OH; Esri, TomTom, Garmin, SateGraph, FAO, METNUSA, USGS, EPA, NPS, USFWS
Hybrid Reference Layer: Esri Community Maps Contributors, City of Hamilton, OH; Butler County, Ohio Rail Development Commission, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SateGraph, GeoTechnologies, Inc, METNUSA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Imagery: Vantor
Neatmap - February 2023 © OpenStreetMap (and) contributors, CC-BY-SA
World Hillshade: Esri, COGAS, USGS

Legend

- West Section Preliminary Impact Limits
- Central Section Preliminary Impact Limits
- East Section Preliminary Impact Limits
- National Register Listings
- National Register Historic Sites
- National Register Eligible Parcels
- NHX Study Area

0 500 1,000 Feet
(At original document size of 11x17)
1:8,500



Project Location
City of Hamilton
Butler County, OH
Prepared by RG on 2026-04-08

Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment
173620130

Figure No.
4-12

Title
NRHP Eligible Historic Properties Map

Alwin E. Zschau House (905 Heaton Street) (OHI# BUT0064609) is eligible for inclusion in the NRHP under Criteria A for its association with the migration of skilled craftsmen to the City during the City's industrial and residential expansion. The resource is representative of a home owned and designed by a trained craftsman who relocated to Hamilton during the city's industrial and residential expansion. The residence is eligible under Criteria C as a representative example of the work of a master craftsman during the industrial and residential expansion of Hamilton. The historic boundary corresponds with the parcel boundary.

Greenwood Cemetery Historic District (NRHP #94000771, OHI #BUT0038609, OGSID #1261) was established in 1848 and occupies a large, well-maintained parcel at the northeast corner of Miami and Heaton Streets. The district is listed in the NRHP under Criteria A and C and Criteria Consideration D in the areas of social history, landscape architecture, and architecture. It is distinctive in that its design, landscape, architecture, grave markers, and its monuments are representative of the rural cemetery movement. The NRHP boundary encompasses nearly 70 acres.

4.3.2.1 History/Architecture Impacts

No Build Alternative: The No Build Alternative does not directly impact any NRHP-listed or NRHP-eligible historic properties or districts.

Preferred Alternative: No NRHP-listed or NRHP-eligible properties or districts were identified in the West or East Sections of the NHX project. In the Central Section, the Preferred Alternative avoids adverse effects to all NRHP properties. The Preferred Alternative was modified to avoid impacts to NRHP districts and properties in the following ways:

- Connection to US 127 was shifted north to avoid the German Village Historic District
- Widening at the connection to US 127 was shifted east to maintain the existing curb in front of Niles Tool Works
- Lane widths were reduced from 11 feet to 10 feet for 125 feet in front of Stone Tavern and the shared-use path was routed behind the property to avoid adverse impacts to this building.
- The vertical roadway profile was lowered to avoid impacts to the Alwin E. Zschau House (905 Heaton Street)
- The connection to existing Heaton Street at Greenwood Cemetery Historic District was shortened to avoid impacts to the cemetery entrance and gate

On December 23, 2025, ODOT submitted the Effect Determination to the SHPO for concurrence. On January 5, 2026, the SHPO concurred that a finding of "no adverse effect" is applicable to the project. The effect on each NRHP-listed and NRHP-eligible property is listed below:

- **Niles Tool Works** (OHI# BUT0096509): Work adjacent to the property is limited to the existing curb line. No contributing features will be removed or altered by the project and no land from the historic boundary will be required. Niles Tool Works will not be affected by the Preferred Alternative.
- **German Village Historic District** (NRHP 90002216): Widening is to the east away from the historic district. No contributing features will be removed or altered and no land from within the historic boundary will be required. The Preferred Alternative will not affect the German Village Historic District.

- Stone Tavern** (OHI# BUT0071609): Work is proposed adjacent to the property on all sides. Work northwest of the property includes the removal of a section of Greenwood Avenue between Heaton Street and North 8th Street. This section of Greenwood Avenue divides Stone Tavern from Moser Park. Options for the reuse of this area may include a public plaza, green space, and/or parking. Work northeast of the property includes a new connector road between Heaton Street and Greenwood Avenue. A shared-use path will be constructed adjacent to the connector road and will travel behind the building and into Moser Park. The rear driveway entrance will be modified to connect to the new road. South of the building, a 5-foot sidewalk will be installed between the building and the new curb at Heaton Street. The new curb will be approximately 5.5 feet from the south side of the building, which is about 6.5 feet closer than the existing curb. Temporary right-of-way (0.008-acre) and permanent right-of-way (0.02-acre) will be required from the historic boundary for this work. The resource, integrity of materials, workmanship, design, location, setting, and association will be maintained. No contributing features will be removed or altered by the project. The resource will retain its existing corner location as a commercial property. The resource will be accessible to pedestrian traffic due to the proximity of the shared-use path, park, and enhanced pedestrian crossings. The Preferred Alternative will not adversely affect Stone Tavern.
- Hose House #5** (OHI# BUT0053509): Work adjacent to the property is limited to the existing curb line. No contributing features will be removed or altered by the project and no land from the historic boundary will be required. Hose House # 5 will not be affected by the Preferred Alternative.
- Alwin E. Zschau House** (OHI# BUT0064609): Heaton Street will be approximately 2.5 feet higher than the existing roadway adjacent to the property. The curb will move about 13 feet closer to the residence. The southern edge of the new sidewalk will be about 9 feet from the front of the house and 18 feet from the front of the porch. Due to the proposed elevation of the roadway, there will be a slight slope from the sidewalk to the lawn area in front of the house. The existing porch steps will be retained. A tree lawn (approximately 1.6 feet) will be located between the curb and the new 5-foot sidewalk and a landscaped median will be installed along Heaton Street adjacent to the property. The urban character of the streetscape will be retained. Residential properties will remain in close proximity to each other and Heaton Street. Pedestrian improvements, including the installation of a 5-foot sidewalk, shared-use path, crosswalks, and landscaped medians, will enhance the streetscape. Temporary right-of-way (0.005-acre) and permanent right-of-way (0.005-acre) will be required from the historic boundary. No contributing features of the residence will be altered. Integrity of materials, workmanship, design, setting, location, association, and feeling will be retained. The Preferred Alternative will not adversely affect the Alwin E. Zschau House.
- Greenwood Cemetery Historic District** (NRHP #94000771, OHI #BUT0038609, OGSID #1261): The curb line will remain in its existing location on the north side of the street adjacent to Heaton Street. Miami Street will be moved away from the cemetery to connect with 10th Street. No contributing features will be removed or altered and no land from within the historic boundary will be required. The Greenlawn Cemetery Historic District (NRHP 94000771) will not be affected by the Preferred Alternative.

4.3.3 Archaeology

ODOT provided guidance on the scope of the Phase I Archaeology investigations for the Preferred Alternative on July 24, 2025. Due to previous disturbance along the Preferred Alternative and the low potential for archaeological resource impacts, less than 10% of the proposed alignment (950 feet) required archaeological investigation.

A Phase I Archaeological Survey was completed in October 2025 for the undisturbed area comprised of fallow agricultural fields and manicured lawns parallel to Leeds Lane, north of Princeton Road. A total of 37 shovel test units (STUs) and nine shovel probes were dug across the defined area. The testing did not identify any unrecorded sites or further expand the boundaries of any recorded sites.

A visual inspection was completed and a disturbance assessment summary was prepared to document conditions along the remainder of the Preferred Alternative. This report included a summary of the current physical condition of the Hamilton Burial Mound. No surficial evidence of the recorded Hamilton Mound (BU0006) was found anywhere within the mapped boundary. The study area has been thoroughly disturbed by past construction and demolition activities. Based on the literature and field reviews, minimal potential exists for significant archaeological deposits in the impact area of the Preferred Alternative.

4.3.3.1 Archaeology Impacts

No Build Alternative: There are no impacts to archaeological sites as a result of the No Build Alternative.

Preferred Alternative: Due to the disturbed nature of the NHX project area, and the results of the Phase I Archaeological Survey, the Preferred Alternative is unlikely to impact archaeological sites.

4.3.4 Cultural Resources Coordination

4.3.4.1 Phase I History/Architecture Survey

ODOT approved the recommendations of the Phase I History/Architecture Survey on June 6, 2025. In accordance with 36 CFR 800.4(b) and the Section 106 Programmatic Agreement (Agreement No. 38503) executed June 29, 2023, ODOT requested Ohio SHPO's concurrence with the following:

- Greenwood Cemetery Historic District (NR #9400771), listed in the NRHP, remains eligible for inclusion in the NRHP.
- Hose House #5 (OHI BUT0053509) is eligible for inclusion in the NRHP. The historic boundary corresponds with the parcel boundary.
- No additional history/architecture properties eligible for inclusion in the NRHP individually or as a district are located within the APE.

Ohio SHPO: On July 3, 2025, Ohio SHPO provided comments on the Phase I History/Architecture Survey for the NHX project. The agency agreed that Hose House #5 is eligible for inclusion in the NRHP, and the Greenwood Cemetery and German Village Historic Districts remain eligible for inclusion in the NRHP. Ohio SHPO recommended further investigations for three resources: the C.H. & D Railroad Bridge (#105), Alwin E. Zschau House (905 Heaton Street) (OH#BUT0064609), and Stone Tavern (701 Greenwood Avenue) (OH#BUT0071609).

Consulting Parties: On June 6, 2025, copies of the Phase I History/Architecture Survey and ODOT's recommendations were sent to the Consulting Parties; no comments were received.

4.3.4.2 Addendum Phase I History/Architecture Survey

A Phase I History/Architecture Addendum Survey Report was prepared to address SHPO's request for additional information on the Alwin E. Zschau House (905 Heaton Street) (OHI #BUT0064609) and Stone Tavern (701 Greenwood Avenue) (OHI# BUT0071609) and to evaluate properties previously outside of the area of potential effects. The C.H. & D Railroad Bridge is outside the APE of the Preferred Alternative and was not evaluated. On October 10, 2025, ODOT submitted the Addendum Survey to Ohio SHPO, requesting concurrence with the following:

- Hose House No.5 (OHI# BUT0053509) is eligible for inclusion in the NRHP. The historic boundary corresponds with the parcel boundary.
- Niles Tool Works (OHI# BUT0096509) is eligible for inclusion in the NRHP. The historic boundary includes the footprint of the extant complex including a 10 foot buffer area on the south and west sides of the complex. The historic boundary corresponds with the footprint of the extant buildings on the north and east sides of the complex.
- Alwin E. Zschau House (OHI# BUT0064609) is eligible for inclusion in the NRHP. The historic boundary corresponds with the parcel boundary.
- Stone Tavern (OHI# BUT0071609) is eligible for inclusion in the NRHP. The historic boundary corresponds with the parcel boundary.
- No additional history/architecture resources listed in or determined eligible for listing in the NRHP were identified within the APE of the preferred alternative.

Ohio SHPO: On October 31, 2025, the Ohio SHPO concurred with the addendum and eligibility findings.

4.3.4.3 Archaeology

On December 23, 2025, ODOT transmitted the Phase I Archaeology Survey and the Section 106 Determination of Effect (see **Section 4.3.4.4**) to Ohio SHPO, Tribes, and the OAC for review and comment.

Ohio SHPO: On January 5, 2026, Ohio SHPO concurred with the effect findings.

Tribal Consultation: ODOT coordinated this project with the following Tribes:

- Delaware Tribe of Oklahoma
- Eastern Shawnee Tribe
- Miami Tribe of Oklahoma
- Osage Nation
- Peoria Tribe
- Pokagon Band Potawatomi
- Shawnee Tribe
- Wyandotte Nation

On January 13, 2026, the Wyandotte Nation indicated no objection to the project. On February 10, 2026, the Shawnee Tribe concurred that no known NRHP properties will be negatively impacted by this project but noted that there is still potential for the discovery of unknown resources. The Tribe requested that in the event of an inadvertent discovery of archaeological resources or human remains during construction, use, or maintenance of this location, ODOT reinstate consultation immediately. No other comments or objections to the project were received. Tribal Consultation documents are included in [Appendix B](#).

Ohio Archaeological Council: On January 16, 2026, OAC requested additional information regarding the NHX project's vertical APE, and copies of the Phase I History/Architecture Report for historical context. In subsequent correspondence on February 9, 2026, OAC expressed concern with the efficacy of the methods used to determine the presence of archaeological sites, particularly sites which are too deep to be discovered using traditional surface sampling techniques. OAC noted that these sites could be impacted by soil compaction or soil chemistry related to new construction.

ODOT provided the Phase I History/Architecture Report and Addendum the same day they were requested. On February 11, 2026, ODOT stated that Stage 1 Design is not currently available but would be provided to OAC upon receipt. ODOT further explained how the Phase I Archaeology Survey was scoped relative to the underlying soils as well as industrial and residential development in the area. Based on the conditions within the Preferred Alternative, there are not sufficient open spaces for encountering intact and interpretable buried archaeological deposits.

Other Consulting Parties: On January 14, 2026, a copy of the Phase I Archaeology Survey and a copy of ODOT's effect determination (see [Section 4.3.4.4](#)) were transmitted to the Consulting Parties. No comments were received within 30 days.

Copies of Ohio SHPO, Tribal, and Consulting Party coordination are included in [Appendix B](#).

4.3.4.4 Section 106 Determination of Effect

In November and December 2025, ODOT reviewed the footprint of the Preferred Alternative in relation to the historic boundary of each NRHP-listed and NRHP-eligible property/district within the APE. Based on measures to minimize effects on historic properties, in accordance with 36 CFR 800.5(b) and the Section 106 Programmatic Agreement (Agreement No. 38503) executed June 29, 2023, ODOT determined a finding of "no adverse effect" is applicable to the Stone Tavern (701 Greenwood Avenue; OHI# BUT0071609), and the Alwin E. Zschau House (905 Heaton Street) (OHI# BUT0064609), and "no effect" for the remaining history/architecture resources. Based on literature and field reviews minimal to ODOT also determined no potential exists for significant archaeological deposits in the Preferred Alternative, and noted no additional archaeological investigation is needed. This determination was transmitted to Ohio SHPO on December 23, 2025.

Ohio SHPO: On January 5, 2026, Ohio SHPO concurred with the effect findings.

Consulting Parties: On January 14, 2026, the Addendum Phase I History/Architecture Survey, ODOT's History/Architecture Review, the Phase I Archaeology Survey, and a copy of ODOT's effect determination were transmitted to the Consulting Parties. No comments were received within 30 days.

Copies of Ohio SHPO and Consulting Party coordination are included in [Appendix B](#).

4.3.5 Mitigation

Due to the proximity of the project to the German Village Historic District, Niles Tool Works, Stone Tavern, Alwin E. Zschau House, and Greenwood Cemetery Historic District, modifications were made to the Preferred Alternative design to avoid or minimize impacts to these properties, as described in **Section 4.3.2.1**. Additionally, the following environmental commitments were developed to further protect these properties during construction.

Environmental Commitments: During detailed design, the Sponsor's Design Engineer will mark and label the historic boundaries of Niles Tool Works, German Village Historic District, Stone Tavern, Hose House No. 5, Alwin E. Zschau House, and Greenwood Cemetery Historic District in the design plans.

ODOT District Environmental Staff will provide Stage 2 plans to ODOT OES for coordination with Ohio SHPO staff for a 15-day review period prior to finalization of the plans.

The Sponsor's Design Engineer will add the following construction plan notes to the design plans:

Do not work within the historic property boundary of Niles Tool Works, including staging construction equipment or materials. No work should occur west of the existing curb line.

Do not work within the historic property boundary of German Village Historic District, including staging construction equipment or materials.

Do not work within the historic property boundary of Stone Tavern except as noted in the design plans. Do not disturb the existing building.

Do not work within the historic property boundary of Hose House #5, including staging construction equipment or materials.

Do not work within the historic property boundary of Alwin E. Zschau House except as noted in the design plans. Maintain a minimum distance of 3 feet from the existing building for ground disturbance. Do not disturb the existing building, including the existing porch steps.

Do not work within the historic property boundary of Greenwood Cemetery Historic District, including staging construction equipment or materials. Do not remove or work beyond the existing chain link fence along the property boundary.

4.4 Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act of 1966 mandates the protection of certain public lands and historic sites during transportation project development. Specifically, it applies to publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic sites that are either publicly or privately owned and listed or eligible for listing on the NRHP. The FHWA implements Section 4(f) through 23 CFR Part 774, which outlines the conditions under which a transportation project constitutes a "use" of a Section 4(f) property. These include permanent incorporation of land, temporary occupancy that results when Section 4(f) property is required for construction-related activities, or constructive use where there is no physical use of the Section 4(f) property, but proximity impacts substantially impair the property's protected features.

When a use is identified, the impact is categorized as either “*de minimis*” or not. A *de minimis* impact is considered minor and does not adversely affect the activities, features, or attributes that qualify the property for protection. For parks, recreation areas, and refuges, this determination is made after considering avoidance, minimization, mitigation, and enhancement measures. For historic properties, a *de minimis* impact corresponds to a finding of “no adverse effect” or “no historic properties affected” under Section 106 of the National Historic Preservation Act. This determination requires coordination with the official with jurisdiction (OWJ) over the property and includes opportunities for public involvement.

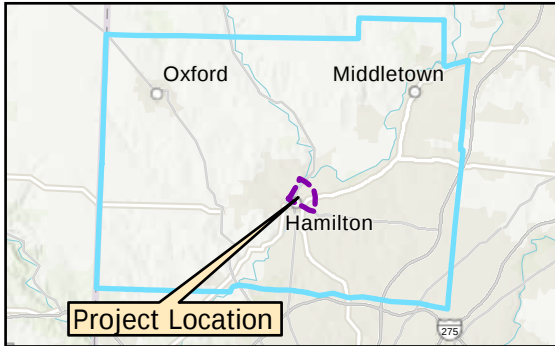
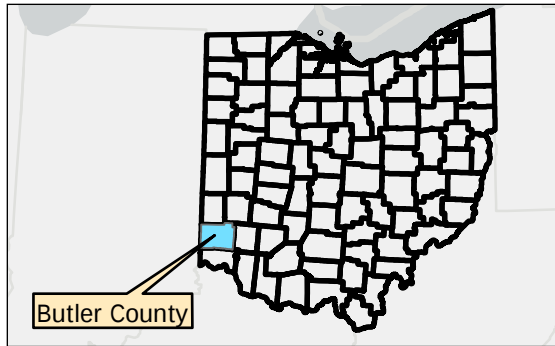
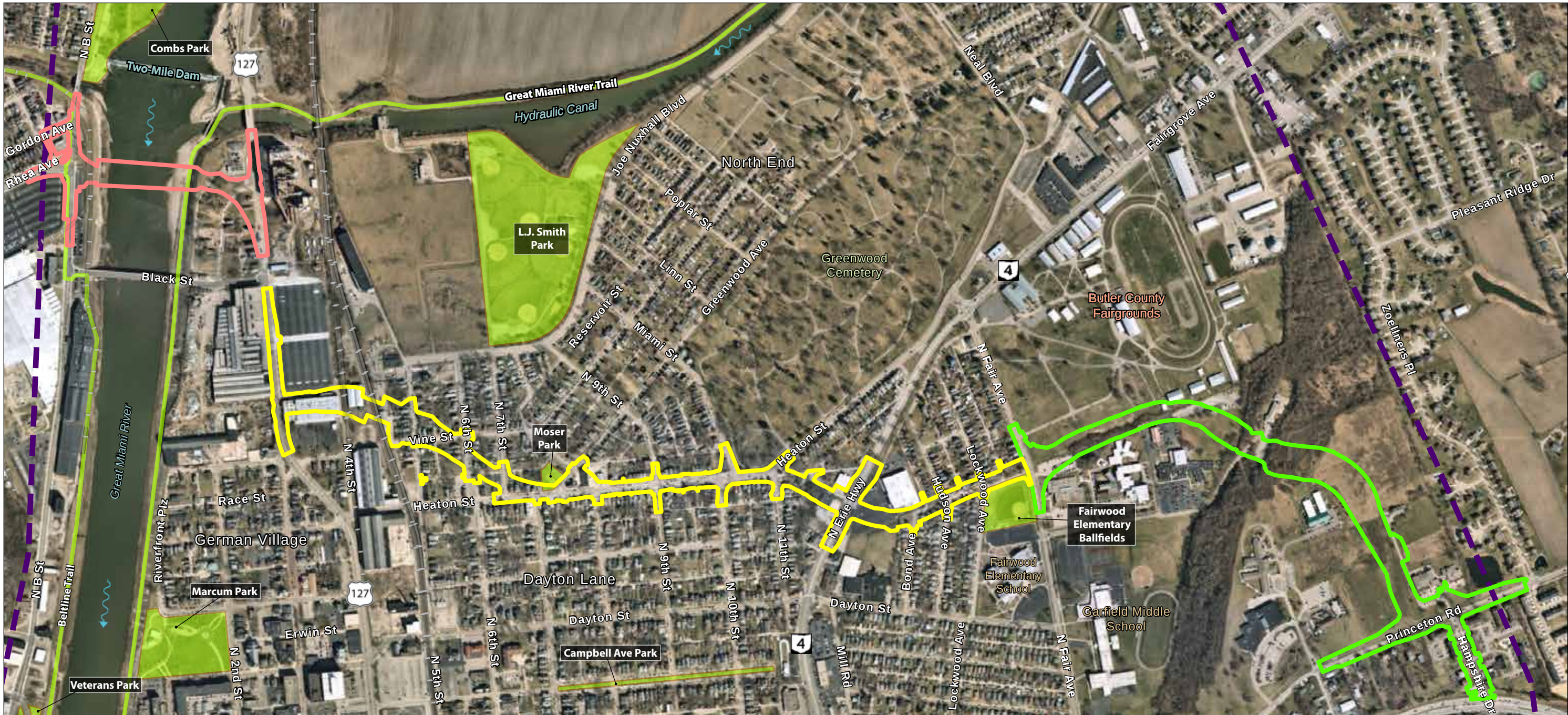
4.4.1 Section 4(f) Properties

Section 4(f) properties in the NHX study area were identified early in project development to avoid impacts to these resources. Several publicly-owned parks and other recreational facilities are in the NHX study area. They are L.J. Smith Park, Combs Park, Marcum Park, Moser Park, Rotary Park, Fordson Heights Playground, Howard F. “Hack” Wilson Park, Campbell Avenue Park, and Veteran’s Park. Other recreational facilities include a section of the Great Miami River Trail and the Beltline Recreational Trail. The Great Miami River is a National Water Trail and is thus also considered a recreational resource. Public school playgrounds and ballfields are also subject to the requirements of Section 4(f) if they are open to the public and serve either organized or substantial walk-on recreational purposes that are determined to be significant. Therefore, the recreational areas associated with Fairwood Elementary School and Garfield Middle School were identified as potential Section 4(f) properties.

Recreational properties within the vicinity of the Preferred Alternative are described in further detail below and identified in **Figure 4-13**:

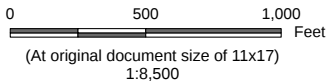
- **Great Miami River Water Trail:** A 156-mile water trail beginning at Indian Lake and ending at the Ohio River with 60 public access points for users to paddle, boat, and fish. There is a boat ramp for motorized and hand-powered watercraft at Combs Park.
- **Beltline Recreational Trail:** A 3-mile paved loop trail that extends from Cleveland Avenue to Main Street through the City. Construction of this trail is being completed in phases. Phases 1 through 3 have already been constructed and run from Eaton Avenue to North B Street, then south along the Great Miami River to the Main/High Street Bridge. Phase 4 extends from Eaton Avenue to Main Street.
- **Great Miami River Trail (GMRT):** A 93-mile paved trail that extends from Middletown to Piqua, Ohio. The trail extends through Warren, Montgomery, Miami, Butler, and Shelby counties and connects to several other connecting trails such as Wolf Creek, Mad River, Stillwater, Ohio to Indiana, and Dayton to Kettering Connector Trails.
- **Moser Park:** A small (<0.5-acre) pocket park with a playground and shelter house.
- **Fairwood Elementary School:** An elementary school with an adjoining playground and a baseball diamond that is used by youth recreational leagues unaffiliated with the school. Section 4(f) applies to the playground area and ballfields only and not the entire school property.

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Legend

- West Section Preliminary Impact Limits
- Central Section Preliminary Impact Limits
- East Section Preliminary Impact Limits
- Section 4(f) Properties
- NHX Study Area



Project Location
City of Hamilton
Butler County, OH
Prepared by RG on 2026-04-08

Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment
173620130

Figure No.
4-13
Title
Section 4(f) Properties Map

Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Base Features Produced from Project Design Elements
3. Background Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USPS
World Topographic Map: City of Hamilton, OH; Esri, TomTom, Garmin, SafeGraph, FAO, METINASA, USGS, EPA, NPS, USPS
Hybrid Reference Layer: Esri Community Maps Contributors, City of Hamilton, OH; Butler County, Ohio Rail Development Commission, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, US Census Bureau, USDA, USPS
World Imagery: Vantor
Neamap - February 2023 © OpenStreetMap (and) contributors, CC-BY-SA
World Hillshade: Esri, NOAA, USGS

Other Potential Recreational Properties in the NHX Study Area Not Subject to Section 4(f)

Requirements: Based on the Butler County Fairgrounds website, the facilities at the fairgrounds, including the camping areas, barns, pulling track, and derby area, function primarily for commercial purposes (i.e. county fair), rather than as park or recreation areas. The camping areas are used only during the county fair and are available to rent for fees specified in the Butler County Fair Book. Because the fairgrounds function primarily for commercial purposes rather than for public recreation, the fairgrounds are not subject to Section 4(f) regulations.

Historic sites listed on or eligible for listing on the NRHP that are in public or private ownership are also protected by Section 4(f), regardless of whether they are open to the public. The FS identified several historic districts in the NHX study area on the NRHP, including the German Village, Hamilton Downtown, and Dayton-Campbell Historic Districts, as well as the NRHP-listed Greenwood Cemetery Historic District. Additionally, cultural resource investigations were conducted to determine the eligibility of archaeological sites and historic structures for listing on the NRHP and to identify any other properties eligible for the NRHP. These studies are further detailed in **Section 4.3**.

NRHP listed sites, or sites eligible for listing on the NRHP, within the vicinity of the Preferred Alternative are listed below, shown in **Figure 4-12**, and described in further detail in **Section 4.3**.

- Niles Tool Works (609 North 3rd Street/MLK Boulevard) (OHI# BUT0096509)
- German Village Historic District (NRHP 90002216) (NRHP #90002216)
- Stone Tavern (701 Greenwood Avenue) (OHI# BUT0071609)
- Hose House #5 (420 North 9th Street) (OHI# BUT0053509)
- Alwin E. Zschau House (905 Heaton Street) (OHI# BUT0064609)
- Greenwood Cemetery Historic District (NRHP #94000771, OHI #BUT0038609, OGSID #1261)

4.4.2 Impacts

No Build Alternative: There are no impacts to Section 4(f) properties under the No Build Alternative.

Preferred Alternative: Impacts to Section 4(f) recreational resources associated with the Preferred Alternative are described in **Table 4-12**. The baseball diamond at Fairwood Elementary School is not impacted by the Preferred Alternative, thus, it was excluded from the tables below.

Impacts to NRHP-listed or NRHP-eligible sites are described in **Section 4.3**. There are no adverse effects to any of these properties.

Table 4-12. NHX Impacts to Section 4(f) Properties

Section 4(f) Property	OWJ	Preferred Alternative Impacts	4(f) impact determination
Great Miami River Water Trail	ODNR (manages)	Temporary access restrictions for boaters during construction	Temporary no use
Beltline Recreational Trail	City (owns) Hamilton Parks Conservancy (maintains)	Temporary closures and/or detours during construction	De minimis

Section 4(f) Property	OWJ	Preferred Alternative Impacts	4(f) impact determination
GMRT	MCD (owns) Hamilton Parks Conservancy (maintains)	Temporary closures and/or detours during construction	De minimis
Moser Park	City (owns) Hamilton Parks Conservancy (maintains)	Impacts to approximately 0.1 acre along the southwestern edge of the park, demolition/relocation of park features including a shelter, fencing, landscaping, signage, play equipment, and a memorial rock	Net Benefit

In accordance with Section 4(f) requirements, the NHX project reviewed two options to completely avoid impacts to Moser Park: shifting the alignment north and shifting the alignment south. Shifting the Preferred Alternative north adds nine more residential relocations and three more commercial relocations. Shifting the Preferred Alternative south adds 15 more residential relocations and four more commercial relocations. While these options are feasible, neither would be prudent because of these relocation impacts. These alternatives are shown in **Figure 4-14**. Temporary no use and *de minimis* impacts do not require avoidance alternatives. Therefore, avoidance alternatives were not evaluated for the Great Miami River Water Trail, the Beltline Recreational Trail, and the GMRT.

4.4.3 Coordination

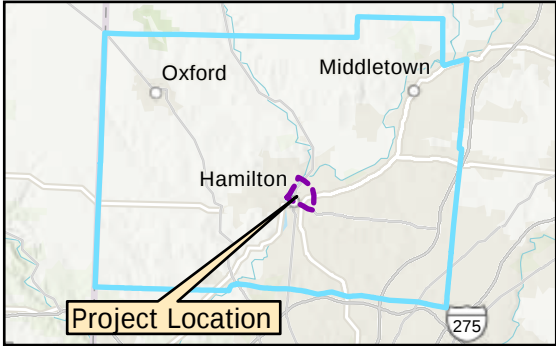
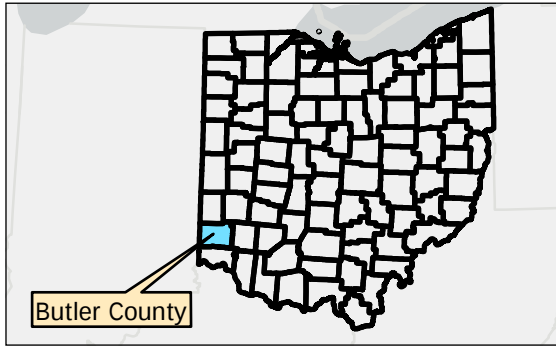
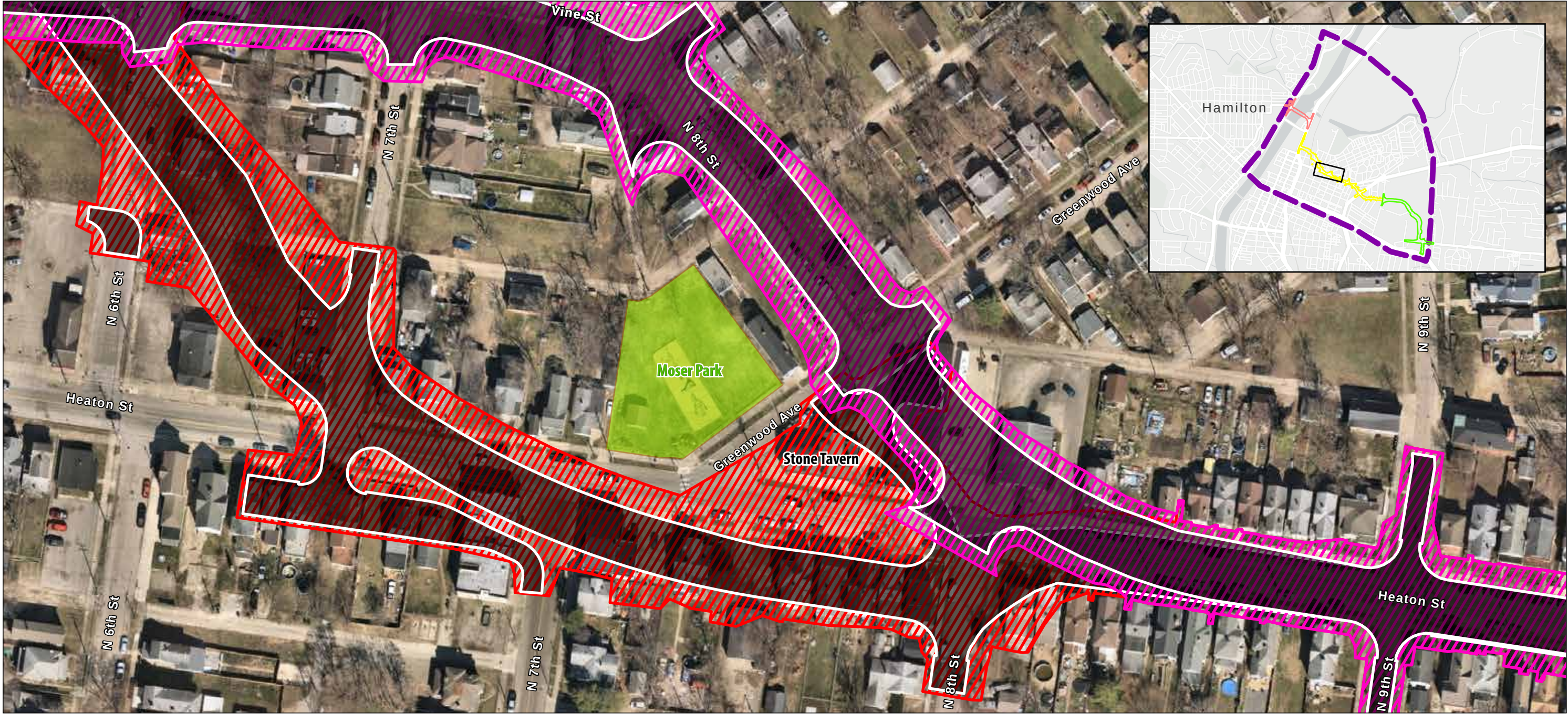
Recreational 4(f) Properties: In March and April 2025, letters were sent to all OWJs for recreational resources. The OWJs for each recreational Section 4(f) property are identified in **Table 4-12** above. The purpose of the letter was to notify the OWJs of the project, request any relevant information about Section 4(f) properties to inform project decision making, and to identify considerations for avoidance, minimization, and mitigation measures for project impacts.

Follow-up letters were sent to OWJs in July and August 2025 which detailed the Preferred Alternative and its impacts to Section 4(f) properties and requested concurrence with proposed mitigation and minimization measures to protect these properties. A final letter was transmitted to MCD and Hamilton Parks Conservancy (HPC) which further detailed impacts and updated mitigation measures for the GMRT, Beltline Recreational Trail, and Moser Park on May 18, 2026.

Due to the potential impacts to Moser Park, a meeting was held on July 14, 2025 with HPC to identify potential mitigation strategies. Mitigation strategies discussed included adding adjacent property to the park made available from the project, integrating the proposed NHX shared-use path into the park, and improving park infrastructure and equipment. A follow up meeting was held on December 8, 2025 to reach a consensus regarding the proposed park improvements.

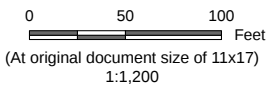
Following this meeting, a concept plan and a cost estimate were developed for the improvements. These were detailed in a revised OWJ letter sent to HPC on May 18, 2026. HPC concurred with the proposed improvements on May 26, 2026. The park concept is shown in **Figure 4-15**. All proposed mitigation measures are detailed in **Section 4.4.5** below. Coordination documents are provided in **Appendix B**.

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Legend

- Central Section Alternative Preliminary Impact Limits - North
- Central Section Alternative Preliminary Impact Limits - South
- Central Section Alternative Edge of Pavement
- Parks



Project Location
City of Hamilton
Butler County, OH

Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment

Figure No.
4-14

Title
Moser Park Alternative Analysis

Prepared by RG on 2026-05-14

173620130

Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Base Features Produced from Project Design Elements: SHPO (2025)
3. Background/Light Gray Base: Ohio Rail Development Commission, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, USDA, USFWS
Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USDA, USFWS
Light Gray Reference: Ohio Rail Development Commission, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, EPA, NPS, USDA, USFWS
Hybrid Reference Layer: Esri Community Maps Contributors, Butler County, Ohio Rail Development Commission, © OpenStreetMap contributors, CC-BY-SA
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World Topographic Map: Esri, TomTom, Garmin, SafeGraph, FAO, MET/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS
World Hillsshade: Esri, COIAP, USGS



On July 2, 2026, ODOT issued Section 4(f) determinations for each Section 4(f) recreational resource impacted by the Preferred Build Alternative ([Appendix B](#)). A copy of the Section 4(f) determination request form (DRF) is included in [Appendix A](#). These determinations are listed below:

Great Miami River Water Trail: The proposed impacts can be processed as an exception to the requirement for Section 4(f) approval with regards to impacts to the Great Miami River Water Trail. In accordance with 23 CFR 774.13(d), the temporary occupancy of land and/or access will not constitute a use upon the protected recreational activities, features, or attributes associated with the Great Miami River Water Trail. The determination was made based on the proposed scope of work and concurrence received from the OWJ regarding the assessment of impacts that are included in the DRF. No further Section 4(f) coordination is required at this time. A reevaluation of Section 4(f) impacts may be required if changes to the proposed scope of work alter the degree of impacts to the Great Miami River Water Trail. Furthermore, all appropriate environmental commitments related to measures to minimize harm and/or resulting mitigation must be listed accordingly in the environmental document.

Beltline Recreational Trail: A *de minimis* impact will occur to the Beltline Recreational Trail in accordance with 23 CFR Part 774. The determination was made based on the proposed scope of work and concurrence received from the OWJs regarding the assessment of impacts that are included on the DRF. No further Section 4(f) coordination is required at this time. A reevaluation of Section 4(f) impacts may be required if changes to the proposed scope of work alter the degree of impact to the Beltline Recreational Trail. Furthermore, all appropriate environmental commitments related to measures to minimize harm and/or resulting mitigation must be listed accordingly in the environmental document.

GMRT: A *de minimis* impact will occur to the GRMT in accordance with 23 CFR Part 774. The determination was made based on the proposed scope of work and concurrence received from the OWJs regarding the assessment of impacts that are included on the DRF. No further Section 4(f) coordination is required at this time. A reevaluation of Section 4(f) impacts may be required if changes to the proposed scope of work alter the degree of impact to GMRT. Furthermore, all appropriate environmental commitments related to measures to minimize harm and/or resulting mitigation must be listed accordingly in the environmental document.

Moser Park: Approximately 0.1-acre of right-of-way acquisition is expected along the southwestern edge of the 0.48-acre park. Construction will also require the demolition of a shelter, fencing, landscaping, signage, play equipment, and temporary removal of a memorial rock. Based on the measures to minimize harm discussed in the DRF and concurrence received from the OWJs, the impact is expected to meet the criteria for the Programmatic Evaluation for Transportation Projects that Have a Net Benefit to a Section 4(f) Property. Based on the measures to minimize harm included in the DRF and agreed upon with the OWJ, ODOT has determined that the undertaking will provide a clear net benefit to the Section 4(f) resource, Moser Park. Benefits incorporated into the project include:

- The Contractor shall install construction fencing along proposed construction limits prior to start of construction activities or other means as directed by the Project Engineer to restrict access to Moser Park throughout construction of the NHX project in the vicinity of the park, a period expected to take approximately six months.
- The Contractor shall install signage to alert users of Moser Park of construction activities and access restrictions or closures. Informational signs formatted in accordance with the Ohio Manual on Uniform Traffic Control Devices (OMUTCD) W20-H14 shall be placed in locations near the

park, as directed by the Project Engineer. The signs will be posted a minimum of 14 days ahead of the park closure as directed by the Project Engineer.

- The Contractor shall notify the Project Engineer (in writing) 30 days ahead of the park closure to ensure that the City Public Information Officer can issue any press releases and notify user groups.
- The City and BCTID shall prepare an agreement document to be signed by HPC stating that the project includes \$1.025 million, plus the costs to account for inflation between 2026 and the predicted build year, which will be provided to HPC for park improvements. The park improvements shall include expansion of the current park (with remnant property from the project), construction of a new shelter house, construction of a new 10-15 space parking lot on City-owned property adjacent to the park, the addition of new playground equipment and picnic area, new landscaping, replacement of the memorial rock, and park sign, as shown on the Moser Park Concept Plan. HPC shall oversee the construction of the park improvements.
- Prior to project construction, the City and BCTID shall coordinate with the HPC (in writing) to ensure that the park sign and memorial rock are safely stored during project construction.
- The City and BCTID shall provide approximately 0.45 acres remnant property to HPC to include in Moser Park resulting from residential takes on six adjacent properties.

Pursuant to Section 4(f) regulations at 23 CFR Part 774 and criteria laid out in the Section 4(f) Evaluation and Approval for Transportation Projects That Have a Net Benefit to a Section 4(f) Property (Environmental Review Toolkit), ODOT OES concurs that:

- The project meets the applicability criteria for a Net Benefit Programmatic Evaluation:
- The proposed transportation project uses Moser Park, a Section 4(f) resource.
 - » The proposed project includes all appropriate measures to minimize harm and subsequent mitigation necessary to preserve and enhance those features and values of the property that originally qualified the property for Section 4(f) protection.
 - » The OWJs over the Section 4(f) property have agreed in writing with the assessment of the impacts; the proposed measures to minimize harm; and the mitigation necessary to preserve, rehabilitate and enhance those features and values of the Section 4(f) property; and that such measures will result in a net benefit to the Section 4(f) property.
 - » ODOT has determined that the project facts match those set forth in the Applicability, Alternatives, Findings, Mitigation and Measures to Minimize Harm, Coordination, and Public Involvement sections of the programmatic evaluation.
- All of the alternatives set forth in the Findings section of the Net Benefit Programmatic Evaluation have been fully evaluated.
- The findings in the DRF demonstrate a clear net benefit to Moser Park.
- The project complies with the Mitigation and Measures to Minimize Harm section of the Net Benefit Programmatic Evaluation.
- The coordination and public involvement efforts required have been successfully completed and written agreements obtained.
- The information that clearly identifies the basis for the above determinations and assurances has been documented in the DRF.

No further Section 4(f) coordination is required at this time. All appropriate environmental commitments related to mitigation and measures to minimize harm should be listed accordingly in the environmental document.

Historic 4(f) Properties: Coordination of impacts to historic Section 4(f) properties is described in **Section 4.3**. An ODOT decision document included in an email dated January 22, 2026 contained the Section 4(f) findings for the Preferred Alternative historic sites, as described below:

The project will not result in a Section 4(f) Use of the following sites: Greenwood Cemetery Historic District, the German Village Historic District, Niles Tile Works, Hose House #5. OWJ (Ohio SHPO) concurred the project does not affect these resources on January 5, 2026.

The project will result in a *de minimis* impact on Alwin E. Zschau House (905 Heaton Street): Minor temporary ROW (0.005 acres) and permanent ROW (0.005 acres) will be required from the historic boundary. No contributing elements will be removed. The curbline will move 11.2 feet closer and a tree lawn (1.5 feet) will be located between the new curbline and the 5 foot sidewalk. The southern edge of the sidewalk will be 9 feet from the front of the house and 18.2 feet from the front of the porch. Due to the proposed elevation of the roadway, there will be a slight slope from the sidewalk to the lawn area in front of the house. OWJ (Ohio SHPO) was notified of the intent to apply *de minimis* finding upon their concurrence that a finding of no adverse effect was applicable. Ohio SHPO concurred on January 5, 2026.

The project will result in a *de minimis* impact on Stone Tavern (701 Greenwood Avenue): Temporary ROW (0.008 acres) and permanent ROW (0.02 acres) will be required from the historic boundary. The adjacent section of Greenwood Avenue will be removed. A connector road will be added to the east of the property, and a multiuse path will sweep around the north side of the property and through the adjacent park. Additional parking and a new driveway entrance will be added to the rear of the property. A 5 foot sidewalk will be installed between the building and the new curb line at Heaton Street. The new curb line will be approximately 5.48 feet from the south side of the building and 6.67 feet closer than the existing curb line. Ohio SHPO was notified of the intent to apply a *de minimis* finding upon concurrence with a Section 106 finding of no adverse effect. Ohio SHPO concurred on January 5, 2026.

4.4.4 Mitigation

This section discusses mitigation for impacts to Section 4(f) recreational properties described in **Section 4.4**. Mitigation for impacts to NRHP-listed or NRHP-eligible sites is described in **Section 4.3**. The following measures to minimize harm to the Section 4(f) recreational properties will be incorporated into the construction plan notes and as environmental commitments in the NEPA document:

4.4.4.1 Great Miami River Water Trail

Environmental Commitments:

- Access to recreational boating on the river will be maintained at all times during construction activities when determined safe and feasible.
- The Contractor shall place appropriate signage/buoys/markers 300 feet upstream and downstream of the project area to alert recreational boaters of construction activity.

- During construction activities deemed unsafe (e.g. beam placement), the river will be closed 300 feet upstream and downstream of the project area through the use of flaggers, or other means, until the project area can be safely accessed.
- The Contractor shall place signage at the Combs Park and Monument Park boat accesses alerting users of construction activities, closures, and portage instructions.
- The Contractor shall be provided contact information for Great Miami Rowing Center and any other entities that use the waterway within the project area and provide written notification to the liveries 14 calendar days prior to any changes affecting recreational boating traffic. Copies of the notification shall be provided to the ODOT Project Engineer.
- The ODOT Project Engineer shall notify the MCD General Manager at mlodor@mcdwater.org and ODNR at kyla.maunz@dot.ohio.gov at least 14 calendar days prior to both the start of construction activities for the new bridge and for demolition of the existing bridge.
- If on-the-water law enforcement assistance is needed during construction, the ODOT Project Engineer shall contact the Division of Parks and Watercraft law enforcement supervisor (Lt. Shannon Hoffer, Shannon.Hoffer@dnr.ohio.gov or 937-902-4950).

4.4.4.2 Beltline Recreational Trail

Environmental Commitments:

- The Contractor shall restrict access to Beltline Recreational Trail for the duration of construction in the vicinity of the trail, a period estimated to be six months. A proposed detour shall be in place for the section of the trail to be closed utilizing routes approved by the City.
- The Contractor shall install temporary construction fencing along proposed construction limits prior to the start of construction activities to protect the existing Section 4(f) property and the public.
- The Contractor shall notify the Project Engineer (in writing) 30 days ahead of any closures or traffic patterns.
- The Project Engineer shall notify the City Public Information Officer (PIO) (in writing) to post press releases and notify any identified trail user groups about the proposed trail closure seven days prior to the closure.
- The Contractor shall install signage to alert users of the Beltline Recreational Trail of construction activities, access restrictions or closures, and to direct users to secondary access points. Informational signs formatted in accordance with the OMUTCD W20-H14 shall be placed at the nearest detour point, both north and south along the trail, as directed by the Project Engineer. Detour signs formatted in accordance with OMUTCD M4-9a shall be placed at points of directional change for the bike/pedestrian detour sufficient to guide bikes and pedestrians, as directed by the ODOT detour coordinator and shown on the detour plan, and/or as directed by the Project Engineer.
- The Contractor shall be required to closely coordinate (in writing) the construction schedule with the City, BCTID, and HPC 14 days prior to the start of construction and at monthly status meetings. These groups shall be invited (in writing) to the pre-construction meeting a minimum of 14 days prior to the meeting.

4.4.4.3 Great Miami River Trail

Environmental Commitments:

- The Contractor shall restrict access to GMRT in the vicinity of the new bridge construction for the duration of bridge construction, a period that is anticipated to take up to two years. A detour will be used during closure of the GMRT.
- The Contractor shall install temporary construction fencing along proposed construction limits prior to the start of construction activities to protect the existing Section 4(f) property and the public.
- The Contractor shall notify (in writing) the Project Engineer 30 days ahead of any closures or traffic patterns.
- The Project Engineer shall notify the City PIO (in writing) to post press releases and notify any identified trail user groups about the proposed trail closure seven days prior to the closure.
- The Contractor shall install signage to alert users of the GMRT of construction activities, access restrictions or closures, and to direct users to secondary access points. Informational signs formatted in accordance with OMUTCD W20-H14 shall be placed at the nearest detour point, both north and south along the trail, as directed by the Project Engineer. Detour signs formatted in accordance with OMUTCD M4-9a shall be placed at points of directional change for the bike/pedestrian detour sufficient to guide bikes and pedestrians, as directed by the Project Engineer.
- The Contractor shall be required to closely coordinate (in writing) the construction schedule with the City, BCTID, MCD, and HPC 14 days prior to the start of construction and at the monthly status meetings. These groups shall be invited (in writing) to the pre-construction meeting a minimum of 14 days prior to the meeting.

4.4.4.4 Moser Park

Environmental Commitments:

- The Contractor shall install construction fencing along proposed construction limits prior to start of construction activities or other means as directed by the Project Engineer to restrict access to Moser Park throughout construction of the NHX project in the vicinity of the park, a period expected to take approximately six months.
- The Contractor shall install signage to alert users of Moser Park of construction activities and access restrictions or closures. Informational signs formatted in accordance with the OMUTCD W20-H14 shall be placed in locations near the park, as directed by the Project Engineer. The signs will be posted a minimum of 14 days ahead of the park closure as directed by the Project Engineer.
- The Contractor shall notify the Project Engineer (in writing) 30 days ahead of the park closure to ensure that the City PIO can issue any press releases and notify user groups.
- The City and BCTID shall prepare an agreement document to be signed by HPC stating that the project includes \$1.025 million, plus the costs to account for inflation between 2026 and the predicted build year, which will be provided to HPC for park improvements. The park improvements shall include expansion of the current park (with remnant property from the project), construction of a new shelter house, construction of a new 10-15 space parking lot on

City-owned property adjacent to the park, the addition of new playground equipment and picnic area, new landscaping, and signage, as shown on the Moser Park Concept Plan. HPC shall oversee the construction of the park improvements.

- Prior to project construction, the City and BCTID shall coordinate with the HPC (in writing) to ensure that the park sign and memorial rock are safely stored during project construction.
- The City and BCTID shall provide approximately 0.45 acres remnant property to HPC to include in Moser Park resulting from residential takes on six adjacent properties.

4.4.4.5 Section 4(f) Historic Properties

Mitigation related to NRHP-listed or NRHP-eligible sites is described in [Section 4.3](#).

4.5 Section 6(f)

The Land and Water Conservation Fund (LWCF) Act of 1965 (Public Law 88-578), codified at 54 U.S.C. 200305(f)(3), established a funding mechanism for the acquisition and development of public outdoor recreation resources. Administered by the National Park Service (NPS), the program provides matching grants to state and local governments for recreation planning, land acquisition, and facility development.

Section 6(f)(3) of the Act contains a key provision that protects properties acquired or developed with LWCF assistance. It stipulates that such properties must remain dedicated to public outdoor recreation use in perpetuity, unless the Secretary of the Interior approves a conversion. Any approved conversion must result in the substitution of lands of equal fair market value and of reasonably equivalent usefulness and location. These protected properties are commonly referred to as Section 6(f) resources and are subject to review and compliance during transportation project development to ensure continued public recreational access.

4.5.1 Section 6(f) Properties

Based on a review the NPS's listing of properties that have received LWCF grants in Butler County, there are no Section 6(f) properties within the NHX study area.

4.6 Reasonably Foreseeable Environmental Effects

The analysis of potential environmental impacts of the NHX project must consider not only direct impacts but those that occur later in time or farther from the project site but that are still reasonably foreseeable. These may include growth-inducing effects and changes in land use patterns, population density, or development rates, along with related impacts on air, water, and other natural systems, including ecosystems (40 CFR 1508.8). Reasonably foreseeable effects are those likely to occur and do not include outcomes that are merely possible or speculative. The analysis also considers cumulative impacts resulting from the incremental impact of the action when combined with other past, present, and reasonably foreseeable future actions, regardless of who undertakes those actions. Cumulative impacts can result from individually minor actions that become significant when considered collectively over time (40 CFR 1508.7). These impacts are as follows:

4.6.1 Reasonably Foreseeable Future Projects

No Build Alternative: There are no reasonably foreseeable environmental effects as a result of the No Build Alternative.

Preferred Alternative: The Preferred Alternative improves mobility through Hamilton by providing an east-west route between North B Street on the west side of the Great Miami River and SR 129 on the east side of the river. Traffic simulation models for the NHX project show that the Preferred Alternative reduces travel times and improves accessibility between SR 129, North B Street, and destinations along the NHX corridor.

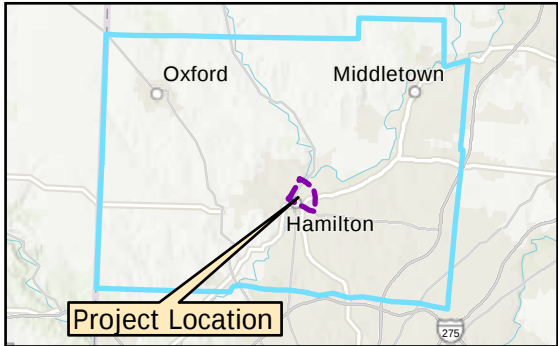
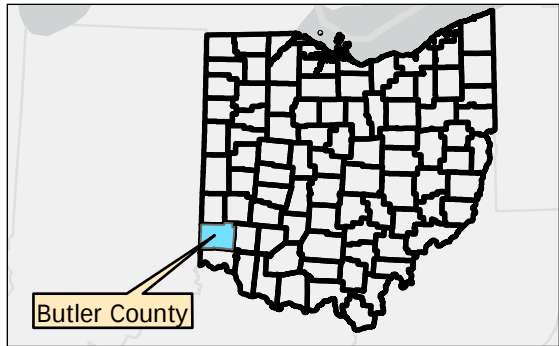
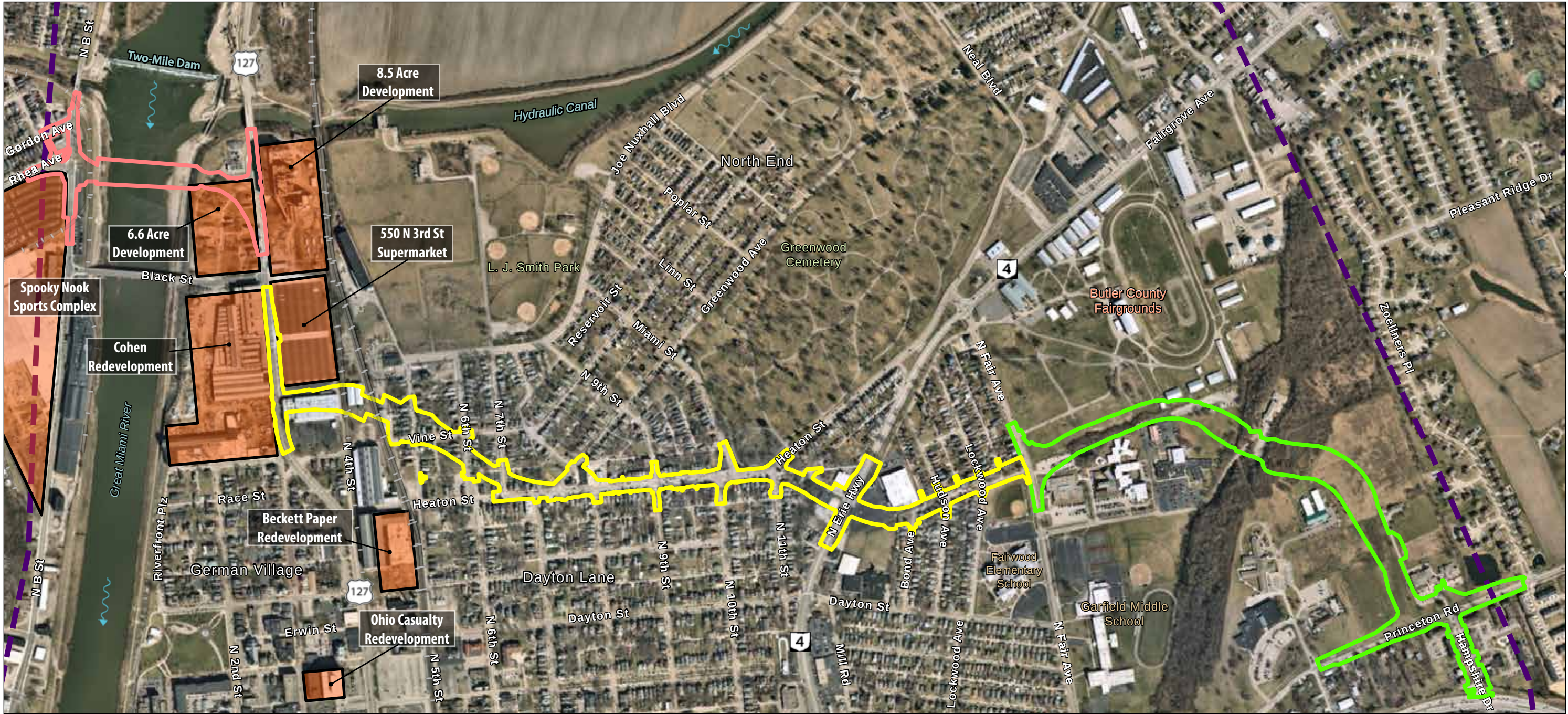
Traffic studies of preliminary alternatives between Hampshire Drive and various points east, including Spooky Nook Sports Complex, Kettering Health Hospital, Hamilton High School, and areas north of B Street at Elkton Road, found that all alternatives improved travel times, with routes closer to SR 129 generally performing better than those farther north. The Preferred Alternative had travel time reductions of 53-58% for trips between Hampshire and Spooky Nook. For trips from Hampshire to Kettering Health Hospital, located northwest of Spooky Nook, the Preferred Alternative provided travel time savings of 29-34% (Stantec 2023).

Improved accessibility along the NHX corridor is expected to support Hamilton's ongoing economic development within the study area. As discussed in [Section 2.3.2.1](#), several development projects have recently opened or are under development in or adjacent to the NHX study area. The Spooky Nook Sports Complex opened in 2022. This 691,000-square-foot mixed-use facility includes sports venues, retail spaces, restaurants, and a food court, a conference center, a 230-room hotel, and a brewery. Multiple other planned developments are located within or adjacent to the study area. These projects are listed below and shown in [Figure 4-16](#).

Each of these developments are reasonably likely to occur with or without the NHX project and were incorporated into the traffic projections for both the No Build and Build Alternatives.

- Beckett Paper Redevelopment
- Rossville Flats Redevelopment
- Ohio Casualty Redevelopment
- 550 North 3rd Street Supermarket
- Cohen Redevelopment
- 6.6 Acre Development North of Cohen
- 8.8 Acre Development North of Supermarket

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Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources: Base Features Produced from Project Design Elements
3. Background Light Gray Base: Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
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World Imagery: Vantor
Neatmap - February 2023 © OpenStreetMap (and) contributors, CC-BY-SA
World Hillshade: Esri, COGAS, USGS

Legend

- West Section Preliminary Impact Limits
- Central Section Preliminary Impact Limits
- East Section Preliminary Impact Limits
- Planned Economic Developments
- NHX Study Area

0 500 1,000 Feet
(At original document size of 11x17)
1:8,500



Project Location
City of Hamilton
Butler County, OH
Client/Project
North Hamilton Crossing (NHX)
PID 115575
Environmental Assessment

Prepared by RG on 2026-04-08

173620130

Figure No.

4-16

Title

Planned Economic Developments Map

The planned development projects listed above represent the largest available parcels within the study area. While the NHX project improves accessibility between SR 129 east of the Great Miami River, North B Street west of the river, and destinations along the NHX route, it is unlikely to alter development patterns, cause zoning changes, or induce growth elsewhere in the region in the reasonably foreseeable future. In addition, the project is consistent with Hamilton's Future Land Use Map and has been identified as a priority project in local and regional transportation plans. Elements of the NHX project are included in Butler County's Throughfare Plan (2007, updated in 2017), OKI's 2040 and 2050 Metropolitan Transportation Plans, and the City's comprehensive plan, *Plan Hamilton*, 2019. The project is also consistent with recommendations in the City's Riverfront Master Plan (2018), which aims to encourage investment along the river corridor.

4.6.2 Reasonably Foreseeable Cumulative Impacts

Potential cumulative impacts to wetlands, streams, forests, and other resources were considered from other past, present, and reasonably foreseeable future projects. The projects considered for cumulative impacts are those discussed in **Section 4.6.1** and shown in **Figure 4-16**, which were identified by the City as ongoing and planned economic development projects. In addition to these projects, there have been other economic development and transportation projects completed in the NHX study area since 2020. These projects were identified through a review of the City's Economic Development Annual Reports and with input from the City. These recently completed and planned projects include:

- Several projects on High Street to make needed repairs, improve capacity, remove overhead utilities, replace old water mains, and improve streetscapes;
- Reconfiguration of Rhea Avenue and North B Street to support better traffic flow to and from the Spooky Nook Sports Complex;
- 3rd and Dayton Building – 70 residential units
- Artspace Lofts – 4650 sq. ft. mixed-use housing/commercial

No Build Alternative: There are no cumulative impacts as a result of the No Build Alternative.

Preferred Alternative: Due to the highly urbanized nature of the NHX project area, there are few impacts to natural resources anticipated from either the NHX project or other actions in the NHX project area. As previously noted, the impacts to environmental resources from the proposed NHX project include impacts to the floodway and floodplain (less than 3 acres), impacts to SWH for protected bat species (less than 10 acres), and minor impacts to regulated waterways (less than 2 acres). These impacts will be mitigated through regulatory requirements. Any impacts to wetlands, floodplains, or SWH by future actions are subject to similar regulatory oversight and mitigation requirements if the actions have a federal nexus (i.e., require a permit or other federal oversight and regulation), thereby reducing the potential cumulative impacts to these sensitive resources.

Regarding residential housing units, none of the other planned or recently completed improvements results in a net loss of residential housing units. In fact, two development projects will increase residential units within the area. Therefore, no significant cumulative impacts to residential housing units are expected. While these improvements align with local and regional planning goals, they may also contribute to redevelopment pressures in neighborhoods near the new boulevard. Enhanced connectivity and increased visibility of previously isolated areas could make surrounding properties more attractive for

private investment. Although specific land use changes cannot be predicted, it is foreseeable that improved infrastructure may lead to increased property values and potential gentrification, which could affect housing affordability for existing residents.

4.6.3 Coordination

Local agency coordination and public involvement occurred during development of the FS and subsequent project phases and included meetings with elected officials, planning staff, community organizations, and the general public (see [Section 5](#)). Input from these stakeholders informed the development and refinement of the Preferred Alternative and confirmed its consistency with local plans and ongoing economic development initiatives.

4.6.4 Mitigation

The project is unlikely to alter development patterns, cause zoning changes, or induce growth elsewhere in the region in the reasonably foreseeable future. Impacts to natural resources will be addressed in accordance with applicable federal and state regulations, including required permitting, compensatory mitigation, and implementation of best management practices. No additional mitigation related to indirect or cumulative economic effects is required.

4.7 Construction Impacts

No Build Alternative: There are no construction impacts as a result of the No Build Alternative.

Preferred Alternative: Construction activities can lead to temporary traffic delays, limited access, and increased noise and dust for nearby residents, businesses, and drivers. Short-term impacts can also include erosion and sedimentation during periods of ground disturbance. Additionally, utility relocations are required.

The timing and phasing of NHX project construction is dependent on funding, as described in [Section 3.4](#). Maintenance of traffic plans and utility coordination will be ongoing as project development continues. The construction timing and phasing will be developed to prioritize the preservation of access to neighborhoods and essential community services. Where access changes are unavoidable, clear, visible signage and proactive communication will ensure that residents and visitors are informed of changes in advance and can plan accordingly. Access to properties and businesses will be maintained throughout construction.

Hamilton Fire Station 25 is located at the existing intersection of North Erie Boulevard and Elm Street, and emergency vehicles can access the station from the northeast (via Elm Street) or the southwest (via a private drive from North Erie Boulevard). The Preferred Alternative travels southwest of the property, and construction includes driveway work on the southwest side of the building. Coordination will be required to ensure no impact to emergency vehicle access to the station during construction.

There are significant underground and overhead electric utilities on both sides of the river at the Preferred Alternative bridge. Project construction will avoid the transmission tower poles and overhead electric lines that cross the river. There is also an underground electric junction box near the North B Street roundabout which will be avoided. No impacts to the substation are anticipated. Adjustments to

underground and overhead electric utilities at the US 127 roundabout are likely. There is also a sanitary interceptor which carries wastewater from northwest Hamilton across the Great Miami River which is likely to be impacted by bridge installation. Close coordination with the utility owners in the area will be undertaken during detailed design and construction. No utility service interruptions are anticipated.

Construction of the bridge over the CSX/Norfolk Southern railroad will be coordinated with the railroad to ensure compliance with the crossing requirements and to obtain approval of the new overpass. The bridge was designed to span the railroad right-of-way and to meet railroad clearance requirements. Separately, the City will formally close the Vine Street Crossing (which is closed to traffic today) and the Heaton Street and Butler Street crossings (currently open to traffic) will be eliminated.

Construction noise is unavoidable but temporary in nature. Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, moves in unpredictable patterns. Construction activities associated with this project are expected to primarily consist of material removal, demolition, hauling, grading, paving, and construction of drainage structures. Equipment used for these activities may cause localized construction noise impacts during operation. Construction will occur during daylight hours when occasional loud noises are more tolerable.

Construction-related air quality effects of the NHX project are limited to short-term increased fugitive dust and mobile-source emissions during construction. State and local regulations regarding dust control and other air quality emission reduction controls will be followed to minimize air impacts during construction.

4.7.1 Coordination

Coordination with the City, ODOT, utility owners, and rail carriers was conducted during project development to identify construction-related constraints and requirements. Coordination will continue through final design and construction.

4.7.2 Mitigation

Environmental Commitments: Temporary construction impacts will be managed by using the following standards and specifications as applicable: lighting (Supplemental Specification (SS) 813, SS 913); dust control (CMS 616); noise (ODOT's L&D Manual, Volume 3), and water quality, wetland, and stream protection (CMS 601, CMS 659, CMS 671, SS 832, and ODOT L&D Manual, Volume 2). These are ODOT standard practices, and no environmental commitment is necessary.

Noise restrictions will vary based on the location of the construction. The contractor will be required to adhere to all applicable noise ordinances and regulations. All construction equipment will be operated with the manufacturer's recommended noise suppressors (mufflers, intake silencers, engine enclosures) and all suppressors will be maintained in good working order. During final design, the Sponsor's Design Engineer will include a construction plan note to address construction noise compliance with ODOT Note G104, L&D Manual Volume 3.

4.8 Economic Impacts

The Preferred Alternative results in short and long-term economic effects, which are described as follows.

Short-Term Economic Effects: Construction of the NHX project increases direct jobs related to engineering, construction, and required services. In addition, construction has a positive impact to the local economy as construction-related activities drive demand for local services including hotels, restaurants, rental, and construction materials.

Access to properties and businesses will be maintained throughout construction to minimize negative economic effects to businesses in the vicinity of the construction. However, there may be some economic impacts to local businesses during construction as some motorists may choose to shop in other areas to avoid construction-related travel delays.

Long-Term Economic Effects: The NHX project reduces travel time and congestion for automobiles and commercial carriers traveling through Hamilton, improving access to local businesses in the City. As a result, the NHX project positively impacts existing local businesses which are not relocated by the project and support ongoing economic development.

Real Estate and Tax Revenue Effects: As discussed in [Section 4.1.1.3](#), the Preferred Alternative displaces between 55 and 65 residential properties which results in decreased local property and school tax revenues. However, it is anticipated that some, if not all, of this lost tax revenue will be offset by new housing that will be built in Hamilton to mitigate these relocations. In addition, it is anticipated that relocations of seven businesses is required, resulting in lost income tax revenue from job losses, as well as lost property taxes. It is anticipated that these tax losses will be offset by increased taxes realized from economic development supported by the project.

4.8.1 Coordination

Coordination with the City and local stakeholders informed the development of the Preferred Alternative with consideration to business access, relocations, and support for planned economic activity. This coordination will continue through final design and construction.

4.8.2 Mitigation

Access to properties will be maintained during construction to reduce temporary economic disruptions (see [Section 4.7.2](#)). Replacement housing within the North End neighborhood will offset property tax losses (see [Section 4.1.1.3](#)). No mitigation for long-term economic effects is anticipated.

5 Public Involvement and Agency Coordination

The ODOT PDP outlines a phased approach for planning, engineering, and construction of transportation improvement projects. All projects must advance through five sequential phases: 1) Planning, 2) Preliminary Engineering, 3) Environmental Engineering, 4) Final Engineering/Right-of-Way, and 5) Construction. Public involvement is considered at each phase of the PDP and the requirement to solicit and consider public feedback is integral to the project process. A robust public involvement program was planned and implemented for the NHX project in accordance with ODOT guidance. This program provided a collaborative effort between stakeholders, the public, coordinating agencies, transportation

officials, and other interested parties to make informed decisions related to the NHX project based on multiple viewpoints. The purpose of the public involvement program was to:

- Understand and meet local community transportation goals
- Design the NHX project to address local and regional transportation needs
- Avoid disproportionately high and adverse impacts
- Limit impacts through early identification

Throughout the course of the NHX project, there has been sustained community outreach through a variety of activities to facilitate and encourage public involvement. These activities are summarized below.

5.1 Public Involvement Activities

Over the course of the project, several different types of public involvement activities have been conducted including numerous neighborhood and stakeholder meetings, a town hall meeting, two in-person and virtual open houses, and ongoing social media postings. In addition, a project website (www.northhamiltoncrossing.org) has been maintained to inform the public about upcoming outreach events and provide project materials. Public involvement activities that have been conducted for the NHX project are described below:

Open Houses/Virtual Open Houses and Town Halls: Three open houses and one town hall were held during the project to provide updates and solicit public input at key project decision points. These public notification opportunities were extensively advertised using a variety of outlets such as news releases, newspaper ads, emails, social media, door drops, utility bill inserts, yard signs, flyers at local businesses and other community establishments, and website announcements. More details are available in the Public Involvement Meeting Summary Reports provided on the North Hamilton Crossing Website (www.northhamiltoncrossing.org/participate). English and Spanish versions of notification materials were made available to the public.

Open House 1 (August 29, 2021 – September 30, 2021): The first open house was held between August 29, 2021, and September 30, 2021 during the COVID pandemic. Due to COVID public gathering restrictions, the open house was held virtually using the Public Input platform.

Number of Attendees: The virtual site was viewed approximately 4,300 times and approximately 1,600 individuals provided input.

Material Presented: The purpose of the first public open house was to share information about the purpose and need for the NHX project, and the results of studies completed to date. Questions were embedded in the public open house website for attendees to answer regarding transportation concerns in the study area.

Public Input Received: Approximately 1,600 individuals answered questions embedded in the open house website during the 30-day comment period. Based on the input received, the primary and secondary needs identified for the project were confirmed (see [Section 2](#)).

Open House 2 (In-person January 23, 2023; Virtual Open House January 23, 2023 – March 12, 2023): An in-person Open House was held on January 23, 2023, between 5:30 and 7:30 p.m. at Fairview

Elementary School in Hamilton. A Virtual Open House which presented the same material as the in-person Open House was conducted using the Public Input virtual public engagement platform between January 23, 2023, and March 12, 2023.

Number of Attendees: More than 300 people attended the in-person meeting, not including members of the project consulting team, City, BCTID, and ODOT representatives. Thirty-one completed comment forms were submitted at the in-person open house. The Virtual Open House was viewed more than 9,100 times. A total of 880 participants answered one or more of the survey questions embedded throughout the website. Approximately 11,176 responses were collected via the survey, 611 of which were written comments, questions, and suggestions.

Material Presented: Exhibits were shared with the public that identified the initial route alternatives and presented pros and cons for each alternative. In addition, hybrid route alternatives were shown on an exhibit with pros and cons identified. Project team representatives were stationed throughout the meeting space to discuss the exhibits, answer questions, listen to participants' comments, and address their concerns.

Public Input Received: The key findings from public input received included:

- Concerns were raised regarding potential impacts to the North End neighborhood including potential housing relocations, community cohesion, lack of affordable replacement housing, potential gentrification, and impacts to L.J. Smith Park. Participants were also concerned that the economic benefits of the project would not benefit affected residents.
- A majority of participants (61%) liked the proposed concept/typical section of the NHX project.
- Concerns were raised regarding impacts to the Butler County Fairgrounds, Chem-Dyne, historic districts, ballparks, and historic Greenwood Cemetery.

Based on the comments received at this Open House, the following design modifications were made:

- A new alternative (now Vine Street Connection) was developed in the Central Section which avoids impacts to L.J. Smith Park, Chem-Dyne, Bonham Farm, and the hydraulic canal, and minimizes impacts to the German Village Historic District

Town Hall (August 28, 2023): A Town Hall meeting was held between 5:30 p.m. and 7:30 p.m. on August 28, 2023, at Parrish Auditorium on the campus of Miami University-Hamilton. It included a presentation from City representatives followed by an open-microphone Question and Answer session.

Number of Attendees: Based on sign-in sheets, a total of 134 people attended the meeting, including project team and City representatives.

Material Presented: The project team presented information about the project's purpose and need, ODOT project development process, public input opportunities held to date, and public feedback received to date. The presentation discussed alternatives recommended for further study based on the FS and comments received since the public meeting in January 2023. Upcoming public outreach opportunities planned for the project were discussed. A key part of the presentation covered the property owner relocation process, as well as the resources available to those affected, including NHS.

Public Input Received: Key public input received at this meeting is documented in the Meeting Summary Report available on the North Hamilton Crossing Website ([Appendix A](#)).

- Many comments were received from meeting attendees regarding potential residential relocations, the timing of these relocations, and how homeowners will be compensated for their homes.
- Concerns were raised regarding impacts to local streets and neighborhoods in the vicinity of the project.

Based on the comments received, the project team indicated that it would study changes to the design that could help save additional houses. Additional work would also be done to meet with local communities in the study area to determine the best way to design the NHX route through local neighborhoods and manage access and traffic flow. This may include turning some streets into dead-ends or cul-de-sacs, changing some intersections to roundabouts, and adding new stop signs or traffic signs. Details such as streetscapes, shared-use paths, sidewalks, parking, and landscaping will be developed with input from residents of affected neighborhoods.

Open House 3 (In-person, June 24, 2025; Virtual Open House, June 24, 2025 – August 8, 2025): An in-person Public Meeting was held on June 24, 2025 at the Butler County Fairgrounds in the North End neighborhood of the City. In addition, a Virtual Open House was held for 45 days which presented the same information shared at the in-person meeting.

Number of Attendees: Approximately 140 signed in at the in-person meeting. The Virtual Open House was viewed 1,547 times and 221 people answered at least one of the survey questions, totaling 1,400 responses with 162 comments.

Material Presented: Multiple information boards were presented which included: environmental features of the NHX study area; the alternatives for each project section (West, Central, and East), a comparison of the pros and cons of each alternative by project section, and the Recommended Preferred Alternative.

Public Input Received: A summary of the public input received is presented in the Meeting Summary Report provided on the North Hamilton Crossing Website ([Appendix A](#)). Key takeaways included:

- The Recommended Preferred Alternative was generally accepted.
- Concerns still remain regarding its impact.
- Improvements will still be needed in the Princeton Road and Hampshire Drive area. Some individuals liked the “peanut” roundabout, others thought improved traffic lights should be studied instead (less maintenance and less expensive).

Neighborhood and Special Interest Meetings: A dozen neighborhood meetings, special interest meetings, and other events were held with impacted neighborhoods and community resources to provide project updates and learn about community concerns. These meetings, which were open to neighborhood residents, included the following:

- Six meetings with the North End neighborhood
- One meeting with the Dayton Lane neighborhood
- Three meetings with the German Village neighborhood
- One meeting with representatives of the Butler County Fairgrounds

In addition, a project team representative attended a Hamilton Police Department neighborhood picnic on September 12, 2024, for the German Village, Dayton Lane, and North End neighborhoods to provide a project update and answer questions.

Stakeholder Meetings: A Stakeholder Committee comprising representatives of local organizations and businesses, neighborhood leaders, and other special interest and community groups was established for the project. These representatives serve as liaisons between constituents/neighbors and the project team between public input events. Four stakeholder meetings have been held on the project to date to provide project updates and receive input.

Outreach to Underserved Communities: Throughout the project, special efforts have been made to reach out to underserved communities in impacted neighborhoods since these communities include populations that are older, disabled, have limited English proficiency, and/or do not have access to computers or other devices to receive electronic meeting notifications. All public involvement materials (flyers, handouts, yard signs, etc.) were printed in both English and in Spanish. In addition, Spanish-speaking translators were available at each of the open houses, if requested. In addition to traditional meeting notification methods (i.e., newspaper announcements, social media notifications, etc.) the following notification efforts were used to inform residents of upcoming public meetings:

- Flyers announcing upcoming public open houses were distributed at locations throughout the study area including grocery stores, markets, the public library, churches, and food banks.
- Announcements of upcoming events were posted on the City's Facebook page and the project website.
- Yard signs announcing the public meetings were placed in areas with heavy traffic. These signs were in Spanish and English and included QR codes for the project website.
- Meeting notification flyers were mailed to residences near the project.
- Full-color ads were placed in the *Hamilton Journal-News* promoting several public involvement events. These ads also appeared online, on social media, on television, and on the radio.
- Door Drops: For the in-person Open House held on January 23, 2023/ and the virtual Open House held January 23, 2023 through March 12, 2023, the City prepared packets of project information materials which included the project Fact Sheet, Project Development Process information sheet and a meeting notification flyer (in both English and Spanish) These packets were hand-delivered to approximately 250 residences. Another 200 packets were provided to the North End Market for distribution and to North End RENEW representatives for door drops around their neighborhood.
- Utility Bill Inserts: For the in-person Open House held on January 23, 2023. and the virtual Open House held January 23, 2023 through March 12, 2023, the NHX Fact Sheet, Project Development Process sheet, and copies of the meeting notification flyer in both English and Spanish were included in the January utility bills of all City utility customers receiving paper billing; digital notices were distributed to online payers.

Efforts were made to ensure that access to the public meetings was provided for all residents. The meeting venues were ADA accessible, and a shuttle was provided for individuals with mobility issues, or any other community members that needed transportation assistance.

Community Concerns and Responses: During all Public Involvement events, feedback was collected via attendee comment forms and via the project website during the comment period. As detailed above, there was a high level of participation for these events. All input received was reviewed and responses

were issued. All comments and responses are included in the Meeting Summary Reports and are available for viewing on the North Hamilton Crossing Website (www.northhamiltoncrossing.org/participate).

Public feedback indicates that the Hamilton community generally accepts the City's and BCTID's Preferred Alternative for the NHX project; however, concerns remain with regard to its effects on impacted neighborhoods, residents, businesses, and property owners.

Public Hearing: A public hearing will be held to present the findings of the EA. The purpose of the hearing is to provide the public with an opportunity to comment on the Preferred Alternative, its potential impacts, and proposed mitigation strategies. The format will mirror the August 2023 town hall-style meeting, consisting of an open house session followed by a presentation and a live comment opportunity.

The EA will be available on the project website for public review 15 days in advance of the public hearing. For those individuals who do not have access to computers, copies of the EA also will be available for public review at locations throughout Hamilton including the city offices, the Butler County Engineers Office on Fairgrove Avenue, Lane Library and at the North End Market. Informational notices will be posted at local businesses and community establishments and using yard signs throughout the NHX project area.

After the comment period has closed, the City and BCTID will work with ODOT to respond to all comments received on the EA. This information will be posted on the North Hamilton Crossing Website (www.northhamiltoncrossing.org/participate).

5.2 Agency Coordination

Extensive coordination with federal, state, and local agencies was conducted as part of the NHX project and is detailed in the following sections. Discipline-specific coordination was also conducted with relevant agencies on technical reports and findings, as described in [Section 4](#).

5.2.1 Feasibility Study (FS)

ODOT transmitted the FS to USEPA, Ohio EPA, USACE, USFWS, ODNR, and Ohio SHPO for review and comment on July 24, 2023. Of these agencies, only ODNR provided comments which are detailed below.

ODNR Comments: On August 23, 2023, ODNR provided comments for consideration during project development. Comments included measures to avoid/minimize impacts to habitat for wildlife, threatened and endangered species, groundwater, and the Great Miami River, an important recreational resource. Each of these comments were considered during project development and/or incorporated as environmental commitments. ODNR's comments are included in [Appendix B](#).

5.2.2 Feasibility Study Amendment

On January 6, 2025, USEPA, Ohio EPA, USACE, USFWS, ODNR, and Ohio SHPO were notified that an amendment to the FS was available for review and were invited to an agency coordination meeting on January 30, 2025.

The meeting began with a brief overview of the NHX project, followed by open discussion. Agency comments and questions covered a variety of topics, including waterway permitting, air quality analysis, and mussel surveys. Meeting minutes and a copy of the presentation were distributed to attendees, and comments were requested by February 18, 2025. No comments were received.

A copy of the meeting minutes, including the questions and answers provided, are included in [Appendix B](#).

6 Conclusion

As described in [Section 3](#), Build Alternatives were developed for the West, Central, and East Sections of the NHX study area and evaluated based on engineering and environmental studies, as well as extensive public involvement. Based on this analysis, a Preferred Alternative was identified for each section of the NHX study area:

- West Section – Gordon/Rhea Crossing
- Central Section – Vine Street Connection
- East Section – East Connection

The NHX Preferred Alternative was developed by combining the West, Central, and East Sections.

6.1 Preferred Alternative Summary

Table 6-1 summarizes the impacts for the Preferred Alternative, including the West, Central, and East Sections.

Table 6-1. NHX Preferred Alternative Impacts Summary

Resource Area	Impact
Land Use	Consistent with planned development and local land use plans
Community Characteristics	No change to the demographic composition or defining characteristics of communities
Residential Relocations	55-65 households
Business Relocations	7 businesses
Right-of-way	± 25 acres permanent right-of-way ± 12 acres temporary right-of-way ± 325 parcels impacted
Community Resources, Access, and Cohesion	Impacts and improvements to Moser Park (see Section 4.4) Right-of-way impacts to Minnick's Drive Thru, Butler County Fairgrounds, Fairwood Elementary, and Sojourner Recovery Services No direct impacts to religious institutions Increased traffic along the route, including adjacent to Fairwood Elementary, Moser Park, and Greenwood Cemetery

Resource Area	Impact
	Minor isolation effects and increased walking distances in North End neighborhood Improved emergency services, pedestrian and bicycle access
Visual Resources	Improved aesthetics with boulevard design, new lighting and landscaping
Farmlands	No impacts
Regulated Materials	Impacts to 9 properties with regulated materials concerns identified during the RMR screening / RMR assessments
Air Quality	No significant emissions increase
Noise	114 impacted residences 21 impacted campsites (Butler County Fairgrounds) 1 impacted baseball field (Fairwood Elementary School)
Streams/Wetlands/Ponds	490 linear feet stream 0.5 acre wetland 0.63 acre pond
Terrestrial Habitat	6.65 acres forest 25 acres other undeveloped land
Threatened/Endangered Species	Federally-listed species Indiana bat/Northern long-eared bat (May Affect, Likely to Adversely Affect) Tricolored bat (May Affect, Not Likely to Adversely Affect) Rayed bean (May Affect, Not Likely to Adversely Affect) Eastern massasauga (no effect) Bald eagle (no effect) State-listed species No impact or not likely to impact 3 endangered, 3 threatened, and 1 species of concern
Floodplains/Hydrology	2.37 acres impact to floodplain/floodway Minimal rise in flood elevations
Drinking Water	Located over Sole Source Aquifer One domestic well (ODNR Log No. 217443)
Cultural Resources	Historic properties present, no adverse effects
Section 4(f)	Great Miami River Trail (temporary closures and/or detours during construction) Beltline Trail (Temporary closures and/or detours during construction, minor alignment adjustments) Moser Park (0.1-acre right-of-way, demolition/relocation of park features including a shelter, fencing, landscaping, signage, play equipment, and a memorial rock), park closure during construction Great Miami River Water Trail (temporary access restrictions for boaters during construction) 905 Heaton Street: De minimis impact (0.005 acres temporary and 0.005 acres permanent right-of-way required from historic boundary) 701 Greenwood Avenue: De minimis impact (0.008 acres temporary and 0.02 acres permanent right-of-way required from historic boundary) Other historic sites present, not a Use under Section 4(f)
Section 6(f)	No impacts

Resource Area	Impact
Reasonably Foreseeable Environmental Effects	No significant indirect or cumulative effects anticipated
Construction Impacts / Utilities	Temporary increased traffic delays, access restrictions, and detours Temporary increase in dust and construction noise Temporary erosion and sedimentation, and utility relocations Temporary utility impacts
Economic Impacts	Short-term increase in construction-related jobs and revenue Short-term business impacts due to increased traffic delays, access restrictions, and detours during construction Positive economic development and business impacts associated with traffic improvements/ease of travel Loss of tax revenue from residential and business displacements
Estimated Cost (in 2026 equivalent dollars)	\$124.5 million total including construction, right-of-way, and design (West Section - \$44.3 million, Central Section - \$53.9 million, East Section - \$26.3 million)

6.2 Environmental Commitments

The environmental commitments developed for the project are listed in **Table 6-2** below.

Table 6-2. NHX Environmental Commitments

Category:	Reference:	Responsibility:	Implementation Phase:
Right-of-way, residential and business relocations	Section 4.1.1	BCTID, City, Hamilton	ROW acquisition
Central Section: The City and BCTID will implement an advanced replacement and affordable housing program to mitigate the community impacts of the NHX project. In advance of the right-of-way acquisition phase for the Central Section of the NHX project, the advanced replacement and affordable housing program shall carry out the following: • Execution of an agreement establishing an advanced replacement and affordable housing program (the "Housing Program Agreement") for the NHX Project. • At a minimum, the Housing Program Agreement will include benefits that go beyond traditional Uniform Relocation Assistance and Real Property Acquisitions Policies Act [DG1.1][CS1.2] of 1970 provision of benefits, such as: construction of reduced cost new single-family housing, rehabilitation of existing housing, and assistance to low-income residents on becoming homeowners with specific training on financial literacy, etc.			
Category:	Reference:	Responsibility:	Implementation Phase:
Community Resources, Access, and Cohesion	Section 4.1.1.4	BCTID, City	Design
Central Section: During detailed design, the Sponsor's Design Engineer will incorporate a mid-block crossing with a RRFB at Moser Park near the existing intersection with North 7th Street, and at Greenwood Cemetery between the existing intersections with Miami Street and North 11th Street. During detailed design, the Sponsor's Design Engineer will incorporate a pedestrian crossing with a Pedestrian Hybrid Beacon signal at the existing intersection with Lockwood Avenue near Fairwood Elementary School.			

During detailed design, the Sponsor's Design Engineer will incorporate bump outs on side streets at the following intersections: North 8th Street, North 9th Street, North 11th Street, Bond Avenue, Hudson Avenue, and Lockwood Avenue.

During detailed design, the Sponsor's Design Engineer will incorporate leading pedestrian intervals at the intersection with North Erie Boulevard and the intersection with US 127.

During detailed design, the Sponsor's Design Engineer will incorporate at-grade sidewalks connecting North 5th Street to North 6th Street north and south of the new roadway.

During detailed design, the City will coordinate with Hamilton's Board of Education to identify measures to ensure students are safe walking to school during project construction and post-construction operations.

West, Central, and East Sections:

During detailed design, the City will coordinate with Butler County Regional Transit Authority to identify opportunities to expand existing transit service along the Preferred Alternative route.

Category:	Reference:	Responsibility:	Implementation Phase:
Visual Resources	Section 4.1.2	BCTID, City	Design

West Section:

The Sponsor's Design Engineer will incorporate the aesthetic elements including arches, concrete and metal railings, balconies, and pier post lighting into the detailed design of the bridge over the Great Miami River.

Central Section:

The Sponsor's Design Engineer will incorporate decorative concrete barriers on the proposed overpass embankment (east of the proposed overpass structure of the CSX/Norfolk Southern railroads and west of 7th Street) into the design.

West, Central, and East Sections:

The Sponsor's Design Engineer will incorporate baseline aesthetic treatments to cast-in-place retaining walls, mechanically stabilized earth walls, or other concrete retaining walls. Treatment will consist of an ashlar block, dry stack, or fractured fin (vertical groove) formliner pattern, or enhanced pattern identified by the City during final design.

Category:	Reference:	Responsibility:	Implementation Phase:
Regulated Materials	Section 4.1.4	BCTID, City	Design, Construction

West and Central Sections:

During final design, the Sponsor's Design Engineer will complete RMR Investigations for the following properties:

- J&J Towing, 807 N B Street (RM-W13)
- Hamilton Electrical Substation, 963 North 3rd Street (RM-W18)
- Kornylak Corp, 400 Vine Street (RM-011)
- Professional Motor Services, 530 North 3rd (RM-013)
- Connaughton Welding & Fencing, 440 Vine Street (RM-014)
- 5-Points Auto Sales, 723 Heaton Street (RM-025)
- AMD Auto Sales, 317 North Erie Boulevard (RM-028)

During final design, the Sponsor's Design Engineer will develop construction plan notes to address materials management during construction at the following properties:

- Hamilton Power Plant, 960 North 3rd Street (RM-W19)
- Niles Tool Works, 550 North 3rd Street (RM-012)

Category:	Reference:	Responsibility:	Implementation Phase:
Wetlands, Streams, and Ponds	Section 4.2.1	BCTID, City	Design, Construction

West and East Sections:

The City will obtain all appropriate waterway permits prior to any work within the jurisdictional boundary of any waterway, including wetlands. All applicable waterway permits will be included in the plans, and the permit conditions complied with during construction.

The Sponsor's Design Engineer will add and label the jurisdictional boundaries of wetlands, streams, and ponds to the design plans and indicate areas of avoidance with a "do not disturb" label.

The Sponsor's Design Engineer will add the following construction plan notes to the design plans:

Do not perform any work within the jurisdictional boundaries of any waterway, including wetlands, until the City obtains the necessary waterway permits. Work includes the placement of any temporary or permanent fills.

Demarcate areas marked "do not disturb" in the field with temporary construction fencing or similar prior to construction to protect undisturbed wetlands and streams.

Category:	Reference:	Responsibility:	Implementation Phase:
Threatened and Endangered Species	Section 4.2.3	BCTID, City	Design, Construction

West, Central, and East Sections:

To compensate for the SWH removal related to this project, 9.46 acres of high-quality forested land that provides summer roosting and foraging habitat for listed bat species will be preserved in perpetuity. The preserved acreage is based on the replacement requirements outlined in the OH-PBO. The acreage will be purchased from an approved bat conservation bank or other USFWS-approved mitigation site. If significant changes are made to the amount of habitat being removed, consultation with USFWS will be reinitiated and habitat preservation/methods will be recalculated.

The Sponsor's Design Engineer will add the following construction plan notes to the design plans:

To minimize impacts to state and federally listed bats, do not remove trees from April 1 through September 30. Perform all necessary tree removal from October 1 through March 31. Demarcate clearing limits in the field with temporary construction fencing or similar to avoid any unauthorized tree clearing. City of Hamilton will hold a preconstruction meeting to ensure that contractors understand clearing limits and how they are marked in the field. For the purposes of this note, a tree is defined as a live, dying, or dead woody plant, with a trunk 3 inches or greater in diameter at a height of 4.5 feet above the ground surface, and with a minimum height of 13 feet.

Instruct all workers not to handle any live, dead or injured bats discovered at the project site. Any party finding a dead, injured, or sick specimen must notify the Ohio Field Office at (614) 416-8993 within 24 hours. Biological material must be preserved in the best possible condition; therefore, project personnel are responsible for ensuring that any evidence essential for determining the cause of death or injury is not unnecessarily disturbed.

Category:	Reference:	Responsibility:	Implementation Phase:
Floodplains and Hydrology	Section 4.2.4	BCTID, City	Design, Construction

West Section:

The Sponsor's Design Engineer will ensure that the project complies with all applicable federal, state, and local floodplain protection standards. Coordination with the local floodplain administrators (City and Butler County), Federal Emergency Management Agency, and Miami Conservancy District will continue as final plans are developed.

The City will obtain a floodplain permit prior to plan file.

The City will complete a Floodplain Statement of Findings prior to construction and will post it on the project website for 30 days.

The City will obtain a permit from MCD prior to construction.

Category:	Reference:	Responsibility:	Implementation Phase:
Drinking Water	Section 4.2.5	BCTID, City	Construction

West, Central, and East Sections:

During detailed design, ODOT OES will submit a letter with project information to USEPA. ODOT will provide any requirements resulting from this coordination to the Project Sponsor's Engineer to be incorporated into final design and construction documents.

The Sponsor's Design Engineer will add the following construction plan note to the design plans:

This project is located within the Great Miami Buried Valley Aquifer (GMBVA) and the OKI Extension of the Miami Buried Valley Aquifer, both of which are Sole Source Aquifers (SSA). Use proper containment and diking in refueling areas. Do not store fuels, toxic/hazardous materials, and chemicals near drainage ways, ditches, or streams. Maintain a spill kit on site throughout construction activities. Immediately mitigate any event, such as a spill of fuels, oils, or chemicals, that could threaten to contaminate the drinking water supply. Report all spills or events to the City of Hamilton Public Works Department at 513-785-7206. If the spill is a reportable amount (per Ohio EPA's Release Reporting Requirements), contact City of Hamilton Fire Department at 513-785-7500 or the Ohio EPA's Spills Hotline 1-800-282-9378 for clean-up of the spill.

Impacted drinking water wells (if encountered during project construction) will be properly abandoned in accordance with ODOT specifications and a suitable water replacement plan will be developed if/when a well owner is impacted by the construction project.

West Section:

During detailed design of the bridge over the Great Miami River, the Project Sponsor's Engineer will ensure that no over-the-rail drainage or scuppers with direct outlet to the river are incorporated into the bridge's drainage system.

Category:	Reference:	Responsibility:	Implementation Phase:
Cultural Resources	Section 4.3	BCTID, City, ODOT	Design, Construction

Central Section:

During detailed design, the Sponsor's Design Engineer will mark and label the historic boundaries of Niles Tool Works, German Village Historic District, Stone Tavern, Hose House No. 5, Alwin E. Zschau House, and Greenwood Cemetery Historic District in the design plans.

ODOT District Environmental Staff will provide Stage 2 plans to ODOT OES for coordination with the State Historic Preservation Office staff for a 15-day review period prior to finalization of the plans.

The Sponsor's Design Engineer will add the following construction plan notes to the design plans:

Do not work within the historic property boundary of Niles Tool Works, including staging construction equipment or materials. No work should occur west of the existing curb line.

Do not work within the historic property boundary of German Village Historic District, including staging construction equipment or materials.

Do not work within the historic property boundary of Stone Tavern except as noted in the design plans. Do not disturb the existing building.

Do not work within the historic property boundary of Hose House #5, including staging construction equipment or materials.

Do not work within the historic property boundary of Alwin E. Zschau House except as noted in the design plans. Maintain a minimum distance of 3 feet from the existing building for ground disturbance. Do not disturb the existing building, including the existing porch steps.

Do not work within the historic property boundary of Greenwood Cemetery Historic District, including staging construction equipment or materials. Do not remove or work beyond the existing chain link fence along the property boundary.

Category:	Reference:	Responsibility:	Implementation Phase:
Section 4(f) Resources	Section 4.4	BCTID, City	Design, Right-of-way Acquisition, Construction

West Section:

Great Miami River Water Trail

Access to recreational boating on the river will be maintained at all times during construction activities when determined safe and feasible.

The Contractor shall place appropriate signage/buoys/markers 300 feet upstream and downstream of the project area to alert recreational boaters of construction activity.

During construction activities deemed unsafe (e.g. beam placement), the river will be closed 300 feet upstream and downstream of the project area through the use of flaggers, or other means, until the project area can be safely accessed.

The Contractor shall place signage at the Combs Park and Monument Park boat accesses alerting users of construction activities, closures, and portage instructions.

The Contractor shall be provided contact information for Great Miami Rowing Center and any other entities that use the waterway within the project area and provide written notification to the liveries 14 calendar days prior to any changes affecting recreational boating traffic. Copies of the notification shall be provided to the ODOT Project Engineer.

The ODOT Project Engineer shall notify the Miami Conservancy District General Manager at mlodor@mcdwater.org and ODNR at kyla.maunz@dot.ohio.gov at least 14 calendar days prior to both the start of construction activities for the new bridge and for demolition of the existing bridge.

If on-the-water law enforcement assistance is needed during construction, the ODOT Project Engineer shall contact the Division of Parks and Watercraft law enforcement supervisor (Lt. Shannon Hoffer, Shannon.Hoffer@dnr.ohio.gov or 937-902-4950).

Beltline Recreational Trail

The Contractor shall restrict access to Beltline Recreational Trail for the duration of construction in the vicinity of the trail, a period estimated to be six months. A proposed detour shall be in place for the section of the trail to be closed utilizing routes approved by the City.

The Contractor shall install temporary construction fencing along proposed construction limits prior to the start of construction activities to protect the existing Section 4(f) property and the public.

The Contractor shall notify the Project Engineer (in writing) 30 days ahead of any closures or traffic patterns.

The Project Engineer shall notify the City PIO (in writing) to post press releases and notify any identified trail user groups about the proposed trail closure seven days prior to the closure.

The Contractor shall install signage to alert users of the Beltline Recreational Trail of construction activities, access restrictions or closures, and to direct users to secondary access points. Informational signs formatted in accordance with OMUTCD W20-H14 shall be placed at the nearest detour point, both north and south along the trail, as directed by the Project Engineer. Detour signs formatted in accordance with OMUTCD M4-9a shall be placed at points of directional change for the bike/pedestrian detour sufficient to guide bikes and pedestrians, as directed by the ODOT detour coordinator and shown on the detour plan, and/or as directed by the Project Engineer.

The Contractor shall be required to closely coordinate (in writing) the construction schedule with the City, BCTID, and HPC 14 days prior to the start of construction and at monthly status meetings. These groups shall be invited (in writing) to the pre-construction meeting a minimum of 14 days prior to the meeting.

GMRT

The Contractor shall restrict access to GMRT in the vicinity of the new bridge construction for the duration of bridge construction, a period that is anticipated to take up to two years. A detour will be used during closure of the GMRT.

The Contractor shall install temporary construction fencing along proposed construction limits prior to the start of construction activities to protect the existing Section 4(f) property and the public.

The Contractor shall notify (in writing) the Project Engineer 30 days ahead of any closures or traffic patterns.

The Project Engineer shall notify the City PIO (in writing) to post press releases and notify any identified trail user groups about the proposed trail closure seven days prior to the closure.

The Contractor shall install signage to alert users of the GMRT of construction activities, access restrictions or closures, and to direct users to secondary access points. Informational signs formatted in accordance with OMUTCD W20-H14 shall be placed at the nearest detour point, both north and south along the trail, as directed by the Project Engineer. Detour signs formatted in accordance with OMUTCD M4-9a shall be placed at points of directional change for the bike/pedestrian detour sufficient to guide bikes and pedestrians, as directed by the Project Engineer.

The Contractor shall be required to closely coordinate (in writing) the construction schedule with the City, BCTID, MCD, and HPC 14 days prior to the start of construction and at the monthly status meetings. These groups shall be invited (in writing) to the pre-construction meeting a minimum of 14 days prior to the meeting.

Central Section:

Moser Park

The Contractor shall install construction fencing along proposed construction limits prior to start of construction activities or other means as directed by the Project Engineer to restrict access to Moser Park throughout construction of the NHX project in the vicinity of the park, a period expected to take approximately six months.

The Contractor shall install signage to alert users of Moser Park of construction activities and access restrictions or closures. Informational signs formatted in accordance with OMUTCD W20-H14 shall be placed in locations near the park, as directed by the Project Engineer. The signs will be posted a minimum of 14 days ahead of the park closure as directed by the Project Engineer.

The Contractor shall notify the Project Engineer (in writing) 30 days ahead of the park closure to ensure that the City Public Information Officer can issue any press releases and notify user groups.

The City and BCTID shall prepare an agreement document to be signed by HPC stating that the project includes \$1.025 million, plus the costs to account for inflation between 2026 and the predicted build year, which will be provided to HPC for park improvements. The park improvements shall include expansion of the current park (with remnant property from the project), construction of a new shelter house, construction of a new 10-15 space parking lot on City-owned property adjacent to the park, the addition of new playground equipment and picnic area, new landscaping, and signage, as shown on the Moser Park Concept Plan (see **Figure 4-15**). HPC shall oversee the construction of the park improvements.

Prior to project construction, the City and BCTID shall coordinate with the HPC (in writing) to ensure that the park sign and memorial rock are safely stored during project construction.

The City and BCTID shall provide approximately 0.45 acres remnant property to HPC to include in Moser Park resulting from residential takes on six adjacent properties.

Category:	Reference:	Responsibility:	Implementation Phase:
Construction Impacts	Section 4.5	City	Design, Construction

West, Central, and East Sections:

During final design, a MOT plan will be prepared by the Sponsor's Design Engineer to maintain safety and traffic control through the project area and provide access to residences, businesses, public facilities, community services, and local roads during construction. The plan will include coordination with local emergency and public service providers, schools, as well as news media to keep the general public informed of planned construction activities.

During final design, the Sponsor's Design Engineer will coordinate utility relocations with utility owners to avoid and/or minimize inconvenience to customers.

During final design, the Sponsor's Design Engineer will include a construction plan note to address construction noise compliant with ODOT Note G104, L&D Manual Volume 3. The contractor will be required to adhere to all applicable noise ordinances and regulations. All construction equipment will be operated with the manufacturer's recommended noise suppressors (mufflers, intake silencers, engine enclosures) and all suppressors will be maintained in good working order.

6.3 Next Steps

This EA was prepared to identify the impacts of the proposed action (Preferred Alternative) on each resource area. Based on the environmental studies conducted for the project and summarized in this EA, the Preferred Alternative satisfies the purpose and need for the project and balances potential impacts with transportation benefits.

This EA will be made available for public and agency review for 15 days prior to the public hearing to be held on September 10, 2026 at the Butler County Fairgrounds, 1715 Fairgrove Avenue, Hamilton, Ohio, 45011. Detailed information on the public hearing is available on the North Hamilton Crossing Website (<https://www.northhamiltoncrossing.org/participate>). Comments will be accepted on this EA at the hearing and until October 10, 2026, the end of the 45-day comment period. If it is determined that the project will not have any significant impacts to the environment, ODOT will issue a Finding of No Significant Impact (FONSI). If ODOT concludes that the project has the potential to cause significant impacts, an Environmental Impact Statement will be required. Input from the project's stakeholders and the public will be used in the final decision-making process.

Planning and constructing the NHX project in its entirety is expected to be a long-term effort, and construction will likely occur in phases over many years. Construction is expected to progress from west to east, depending on funding. The first construction phase, which is fully funded and scheduled to begin in 2029, includes the proposed improvements at North B Street, Gordon Avenue, and Rhea Avenue in the West Section. The new bridge over the Great Miami River is anticipated to be constructed next, though funding has yet to be obtained. Detailed engineering, right-of-way acquisition, utility relocation, and construction of the bridge will take several years. Construction of project elements in the Central and East Sections are anticipated after the bridge project.

The City and BCTID will continue to seek funding for the NHX project from a variety of federal and local sources. An application for additional \$1.5 million from Congressionally Directed Spending was submitted in Spring 2025, for which the decision is still pending. Additionally, FHWA's Bridge Investment Program offers Large Bridge Project Grants, a source that will be targeted in 2026. Once funding has been awarded for one of the sections (or part of a section), BCTID will notify affected property owners that work has been funded, and the design process will soon begin. This outreach and other public involvement activities will continue throughout the entire project, including construction phases.

7 References

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- City of Hamilton. 2018. *Hamilton River Plan*. Hamilton, Ohio.
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- City of Hamilton and ODOT. 2020. *Hamilton Active Transportation Plan*. Hamilton, Ohio.
- Executive Order 11988. 1977. *Floodplain Management*. 42 Fed. Reg. 26951 (May 25, 1977).
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- Executive Order 12898. 1994. *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. 59 Fed. Reg. 7629 (February 16, 1994).
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- Executive Order 14148. 2025. *Initial Rescissions of Harmful Executive Orders and Actions*. 90 Fed. Reg. 8237 (January 28, 2025).
- Executive Order 14173. 2025. *Ending Illegal Discrimination and Restoring Merit-Based Opportunity*. 90 Fed. Reg. 8633 (January 31, 2025).
- Lawhon & Associates, Inc. 2025. *Qualitative Mobile Source Air Toxics (MSAT) Analysis, BUT-North Hamilton Crossing, PID 115775*.
- Lawhon & Associates, Inc. 2025. *Phase I History/Architecture Survey for the Proposed BUT-North Hamilton Crossing (PID 115755) in the City of Hamilton, Butler County, Ohio*.
- Lawhon & Associates, Inc. and Stantec Consulting Services Inc. 2025. *Community Impact Assessment, Central, East, and West Section Alternatives BUT-North Hamilton Crossing, PID 115755*.
- OKI Regional Council of Governments. 2020. *2050 Metropolitan Transportation Plan*.
- Rasor. 2022. *North Hamilton Crossing (NHX) PID 115755, Public Input Opportunity #1 Summary*.
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- Stantec Consulting Services Inc. 2024. *Environmental DNA Freshwater Mussel Surveys, Great Miami River, Ohio*.



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