



**ms consultants, inc.**  
engineers, architects, planners



# WARREN

## Mahoning River Corridor Plan

Prepared by ms consultants, inc.



# WARREN

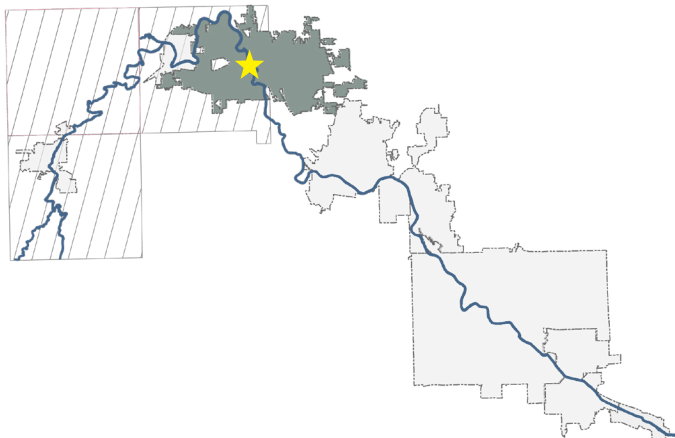
## COMMUNITY IMPLEMENTATION TOOLKIT

### Overview

The following toolkit explores how the corridor-wide objectives may be specifically applied to the Warren river section with an emphasis on the identified opportunity sites. Each community presents its own challenges and potential for revitalization and river restoration. The Community Implementation Toolkits outline these unique traits, provide context on existing conditions, and offer recommendations for the future. The recommendations are supported by action items and potential funding sources to support feasibility and help ensure implementation. The Community Implementation Toolkits should not serve as a stand-alone guide for the local community, but as an additional, specialized resource to the Mahoning River Corridor Revitalization Plan as a whole.

The Warren Community Implementation Toolkit includes the following sections:

- Existing Conditions
- Primary Opportunity Site
- Secondary Opportunity Site
- Dam Removal Section
- Implementation Guide



### Existing Conditions

#### OPPORTUNITIES

The City of Warren is the county seat and largest municipality within Trumbull County. The Mahoning River flows through the center of the city, providing ample opportunities for public access and connections to the river. The City already features an extensive park system, including Perkins Park adjacent to the downtown and courthouse square. The existing park space and planned connections provide tremendous potential for a network of riverfront parks, trails, and mixed-use districts. The downtown area in particular provides excellent views for individuals to enjoy the Mahoning River while visiting local dining, retail, and business destinations.

#### CHALLENGES

In order to achieve its potential for active spaces along the river, Warren must address its current lack of pedestrian infrastructure and align zoning regulations with desired development patterns. Recent planning initiatives will need to be reconciled with existing and new funding opportunities so that development and recreation ideas can effectively move into the implementation phase. Examples of projects which need to be merged and momentum continued include proposed trails, the comprehensive planning process, and non-native invasive species control efforts.

### MAHONING RIVER CORRIDOR RIVERFRONT COMMUNITIES

TRUMBULL COUNTY		MAHONING COUNTY
Newton Township		Youngstown
Newton Falls		Campbell
Braceville Township		Struthers
Leavittsburg		Lowellville
Warren Township		
<b>Warren</b> ★		
Niles		
McDonald		
Girard		

7.83	River Miles
URBAN	Character
38,752	People
0	Launches
5.98	Trail Miles

### Dam Removal & Riverbank Restoration in Warren

Removal of the remaining lowhead dams along the Mahoning River will be a monumental leap forward toward the environmental and recreational goals of the Region. Lowhead dams, though small, significantly disrupt the natural flow of water, negatively affecting the river’s ecosystem and recreational opportunities.

The City of Warren is home to two lowhead dams on the Mahoning River corridor in Mahoning and Trumbull counties. The Summit Street Dam is centrally located and creates a safety hazard for those paddling or otherwise using the river in the community. The dam involves extensive infrastructure, including a spillway with obsolete machinery and geared metal wheels.

Warren City Council approved removal of the Summit St dam in Spring 2021 that intends to fund the project in collaboration with Eastgate and Ohio EPA. This dam removal can spur new economic development in the community, Removal of this dam will normalize the river depth with the existing depth downstream from the dam at an average annual water depth of approximately 4.5 ft.

The community’s second dam is the Republic Steel - Warren Works Dam. An engineering study was performed to evaluate how a potential removal may impact industrial facilities downstream. The dam is currently being considered for removal but not yet approved.

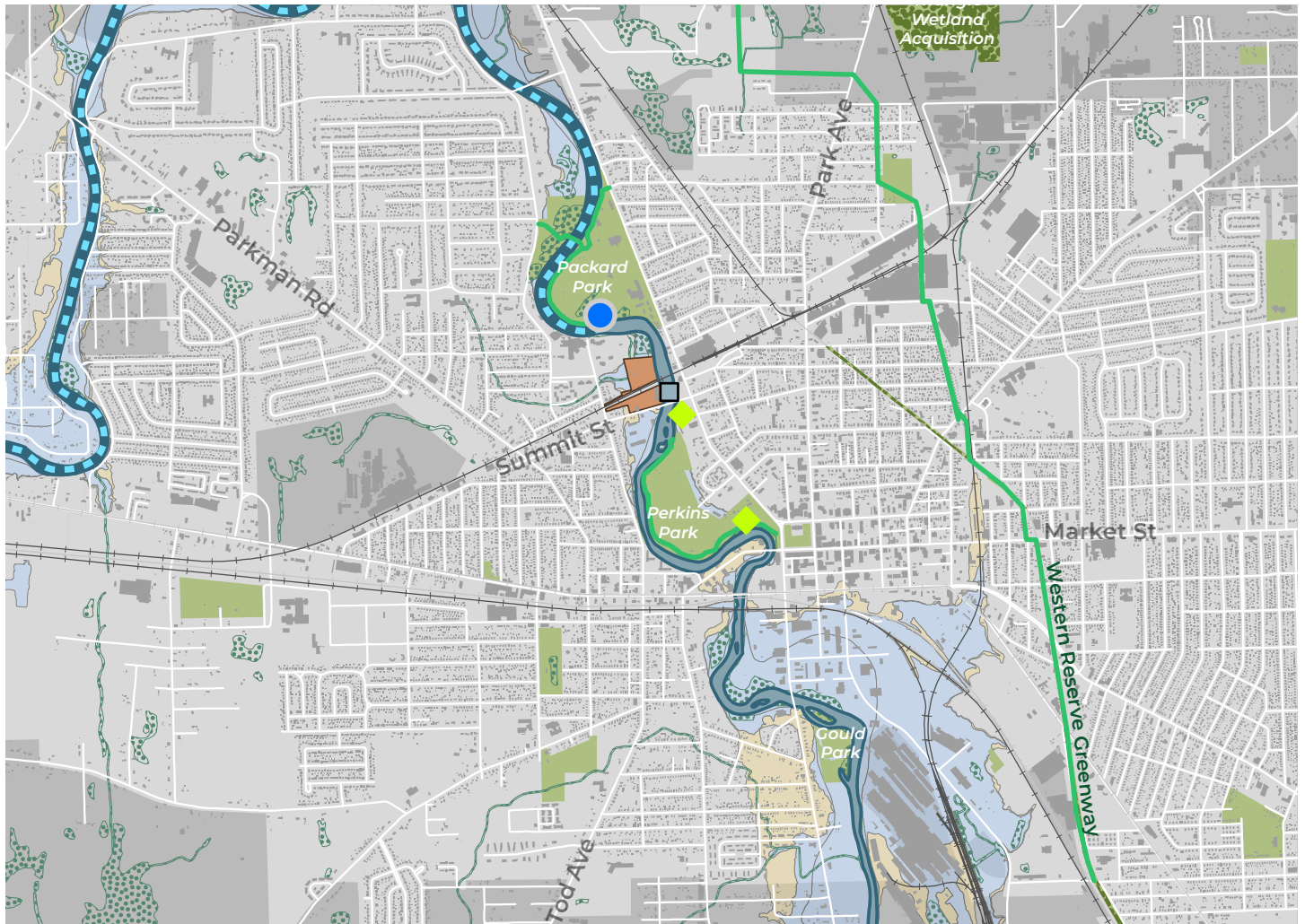
**WARREN**



**MAHONING RIVER**  
Corridor Revitalization  
[www.mymahoningriver.com](http://www.mymahoningriver.com)



FIGURE1 EXISTING CONDITIONS - ENVIRONMENT



## THE ENVIRONMENT

### Existing Conditions

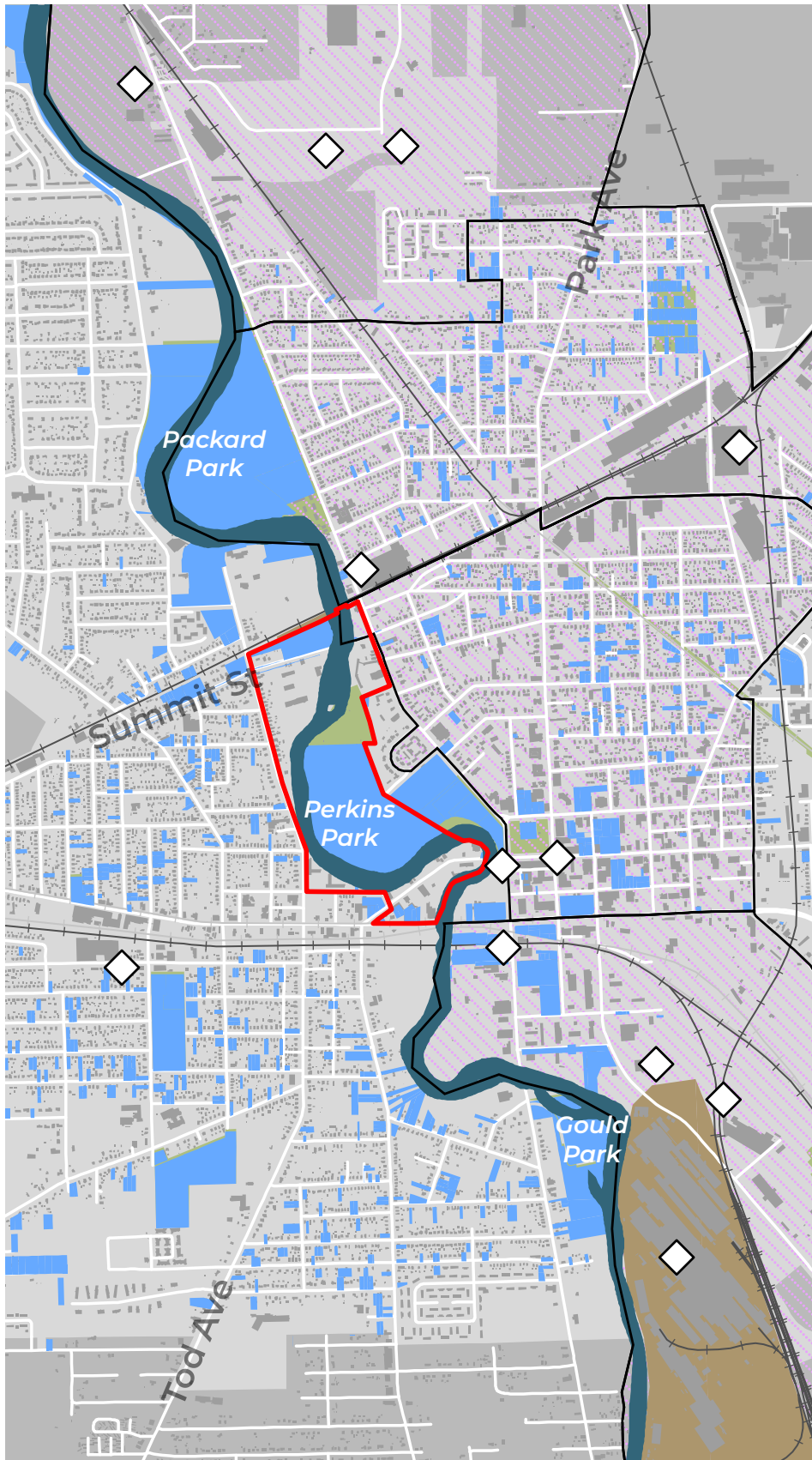
The City of Warren has developed its community recreation assets along the Mahoning River. Warren’s three central parks - Packard Park, Perkins Park, and Gould Park - provide river access and trail amenities along the River’s banks. Currently, no East-West multi-use connections exist, making navigation of the city by bike or foot nearly impossible.

With so much activity along the river, prioritizing riparian zone establishment will help protect and preserve the Mahoning River’s waterways into the future. Currently, there are wetlands and wooded areas along the River’s banks at each park location, and small strips of tree line the River’s full length in the community. Warren is a shining example of an urban riparian zone and should be a leader for others in the region to follow.

LEGEND			
	Mahoning River		Public Park
	Mahoning River Water Trail		Wetland
	Existing Dam		Clean Ohio site
	Existing Launch		Brownfield
	River Access Point		100-year Floodplain
	Existing Trail		500-year Floodplain
			Warren Boundary



FIGURE2 EXISTING CONDITIONS - ECONOMIC & COMMUNITY DEVELOPMENT



## ECONOMIC & COMMUNITY DEVELOPMENT

### Existing Conditions

Development is supported in Warren by New Market Tax Credits, a Community Reinvestment Area (CRA), the Ohio Enterprise Zone program, and an Opportunity Zone. The City also provides business development and façade improvement loans to qualifying businesses. Warren takes a targeted approach to development on the Mahoning River in its downtown with the River District - an informal designation used for marketing and branding. A planned design review district, currently being established, will bring regulatory authority to the development patterns of the River District area.

Parcels owned by public entities demonstrate potential for acquisition, redevelopment, and leveraging of incentives. Including park property, the City and its partners own several parcels on the riverfront and in the downtown. Therefore, there can be greater control over a long-term strategy for public space and income-generating commercial uses.

LEGEND	
	Available Development sites*
	Opportunity zone
	Municipal, County, State, and Land Bank-Owned Parcels
	Brownfields
	River District

\*Identified by Team NEO (JobsOhio) and/or the Youngstown-Warren Regional Chamber at the time of this plan

# WARREN: PRIMARY OPPORTUNITY SITE

## The Peninsula

FIGURE3 SITE LOCATION WITHIN WARREN

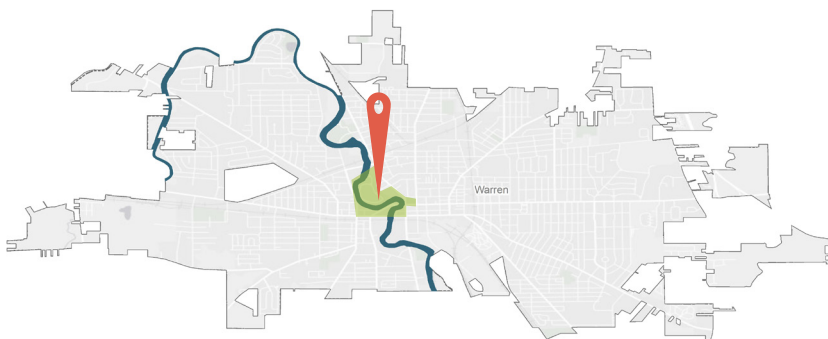


FIGURE4 EXISTING IMAGERY



*The Mahoning River segment in Warren benefits from wooded, urban, and suburban character as it traverses the community.*

### EXISTING CONDITIONS

<b>OWNERSHIP</b>	City of Warren, Private
<b>CURRENT LAND USE</b>	Civic, Commercial, Park
<b>LOCAL ZONING</b>	Various
<b>RIVER ACCESS</b>	Perkins Park
<b>SIZE</b>	≈ 200 Acres

### Additional Notes:

- Invasive species removal efforts underway with support of the Nature Conservancy
- Packard and Perkins Park on the river offer sports, recreation, and community events
- The trails at Perkins Park are not currently connected to other local or regional destinations
- Surface parking lots and vacant properties on W. Market Street south of the Mahoning River present opportunity for outdoor patios, office space, or multifamily development





## Primary Opportunity Site Overview

The vision for the future of the primary opportunity site on the Mahoning River in Warren is a mixed-use riverfront district of regional attraction and local celebration. The City of Warren has conducted previous planning efforts related to downtown and riverfront revitalization, and as such, the primary opportunity site leverages existing work and uses river corridor-wide recommendations to support ongoing initiatives.

The future vision for the Peninsula Riverfront District is a walkable, lively environment with neighborhood retail, restaurants, and public gathering spaces. A band of high-quality parks on the river are well-connected through the regional greenway network and internal signage and branding elements. Ongoing environmental clean-up and remediation efforts and the new trail system invite park users and downtown visitors to explore the waterway in Warren.

FIGURE5 PRIMARY OPPORTUNITY SITE: FUTURE RENDERING





# WARREN: PRIMARY OPPORTUNITY SITE

## The Peninsula

FIGURE 6 PRIMARY OPPORTUNITY SITE: PROPOSED





### Proposed Character:

- Riverwalk enhancements (i.e. signage, lighting, public art, landscaping) provide for a more safe and enjoyable experience for all



### Proposed Character:

- A pedestrian plaza restricts vehicular traffic on Mahoning Avenue from High St. to Market St., extending the Courthouse Square to the Riverwalk



### Proposed Character:

- Restaurants, shops, offices, and other downtown-oriented commercial uses
- Patios and/or walkways to connect users with the river are highly encouraged



### Proposed Character:

- The new pedestrian bridge creates safe passage for pedestrians navigating the downtown and parks network



### Proposed Character:

- Summit St. dam removal creates new and improved recreation on the river and activation of this central greenspace
- Creative programming, such as expansion of existing artwork, is encouraged



# WARREN: SECONDARY OPPORTUNITY SITE

## Republic Steel

FIGURE 7 SECONDARY OPPORTUNITY SITE: PROPOSED



### Secondary Opportunity Site Overview

The vision for the future of the former Republic Steel site along the Mahoning River in Warren is a light industrial and office complex to support the growing electric vehicle industry cluster.

The remediated brownfield offers developable sites for businesses in the innovative manufacturing space and provides new opportunities for the regional workforce. The site also serves as a critical connection between the Warren parks and trails network and the rest of the Mahoning River Greenway.



### Proposed Character:

- Open space and landscaping are integrated throughout the site
- Green infrastructure and sustainable design is highly encouraged



# WARREN: IMPLEMENTATION GUIDE

---

## Preparing for the Future Now


The recommendations provided within the Mahoning River Corridor Revitalization Plan represent goals for the region over the next few decades. The future vision for the Warren river segment should be pursued strategically by breaking down the ideal long-term state into manageable short-and immediate-term projects. The Implementation Guide provides further insight to assist local decision-makers in working together to achieve a revitalized downtown river district with best practices, industry standards, and potential funding sources. Though the guide is designed to be a simple and straightforward reference, these guidelines should not be treated so rigidly as to prevent adaptation should unforeseen circumstances arise during implementation. The Implementation Guide is not an exhaustive list and should be pursued in concert with the corridor-wide objectives identified in the larger Mahoning River Corridor Revitalization Plan. Regional collaboration and coordination is highly encouraged.

*To learn more about funding opportunities, visit Chapter 05 Next Steps of the Mahoning River Corridor Revitalization Plan.*

# SUMMIT STREET DAM REMOVAL

## Projected Dam Removal Impacts

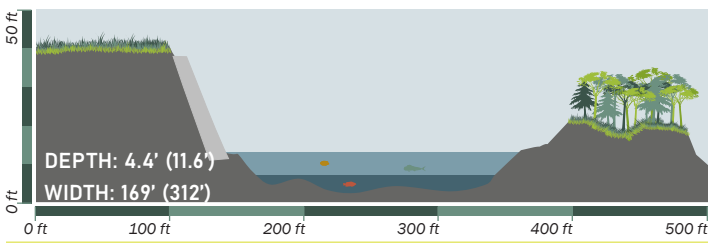
Although the benefits of lowhead dam removal are massive, the decision to remove a dam requires careful consideration of many factors. An engineering study of existing and future river conditions was performed to calculate how the river profile may change if dams were removed. A hydraulic engineering model was developed to evaluate the 21 mile stretch of the river between Leavittsburg and Lowellville. Based on the results of the model, the removal of the Summit Street dam is not expected to negatively impact the river's ability to support a wide range of recreation, provide water to industrial facilities along its banks, or impact the river's capacity during storm events. To read more about the results of the hydraulic model and the potential impacts of dam removal on the flow of the Mahoning River, please refer to Chapter 2 of the Mahoning River Corridor Revitalization Plan and the Mahoning River Dam Removal Analysis Hydraulic Report.



The Summit Street dam has been approved for removal by Warren City Council. This lowhead dam is particularly dangerous to river-goers and its removal will finally allow for Packard Park and Perkins Park to be connected via the river. This removal is an essential piece of the vision for a free-flowing Mahoning River Blueway.

## Expected Changes Upstream

Currently, the Summit Street dam is significantly impeding the natural flow of the Mahoning River, pooling water behind it and raising the existing water level. Currently, the river is 11.6 ft deep just upstream from the Summit Street dam. If removed, it is projected that for an average day, the river's water depth be 4.4 ft. This projected water depth is consistent with the depth of the water downstream from the dam today. This change in water depth will also come with a reduced river width in the area immediately upstream from the existing dam which could become dedicated riparian space in the future. See the cross section below to see this expected change.



## Expected Changes Downstream

Existing water levels downstream from the Leavittsburg dam significantly lower than those upstream from the dam, at a water depth very close to the expected depth of an unimpeded Mahoning River. If removed, it is projected that for an average day, the river's water depth would be 4.9 ft, almost identical to the existing conditions. The river width in the area immediately downstream from the existing dam would stay be very similar to the existing river width on an average day. Ultimately, the projected river conditions immediately downstream from the dam are strikingly similar to what we see in Warren today. See the cross section below to see this expected change.

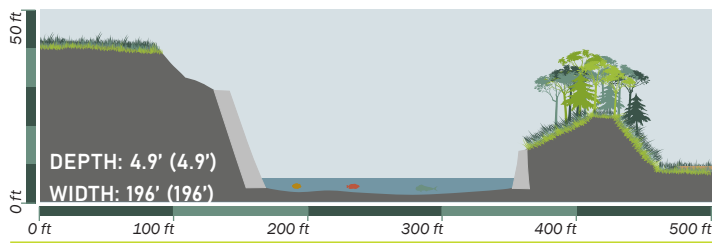
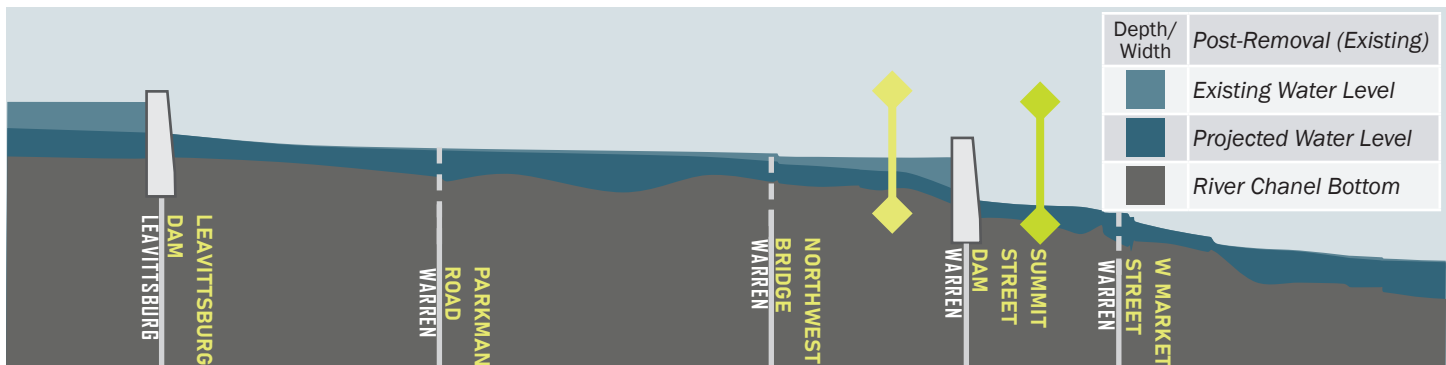


FIGURE 8 CURRENT AND PROJECTED MAHONING RIVER DEPTH BETWEEN LEAVITTSBURG AND WARREN



# DOWNTOWN RIVERFRONT DISTRICT

## Defined Project(s)

Warren possess an exceptional opportunity to strengthen its downtown core along the Mahoning River as a walkable, lively center for a mix of uses. A strategy to create a recognizable and successful district to serve residents and uplift the economy should include the following elements.

## DEVELOPMENT & DESIGN REGULATIONS

Local zoning regulations and/or design guidelines can help cultivate the preferred environment by encouraging desired development patterns and spurring investment in the area.

Examples of components to include in a zoning district, overlay, or design review include:

- Signage guidelines
- Promotion of community's architectural style
- The use of durable high-quality materials
- Building facade objectives (ex: transparent ground floor windows)
- Site plan requirements (ex: parking located to the side or rear of buildings and screening requirements)

## PUBLIC SPACES

Public gathering spaces and municipally-owned land present the opportunity to support private investment and set the tone for the type of aesthetics and quality of experience that Warren is hoping to achieve. The City of Warren should continue to utilize its public spaces including parks, right-of-way, and government property, to attract and retain visitors to the area. Public spaces also present the opportunity to showcase the Mahoning River and connect the downtown to other neighborhoods and attractions. Examples of using public space to support a downtown riverfront district include lighting, signage, buried utilities, outdoor seating, and landscaping. Beautification projects can be supported by economic development tools, like the Designated Outdoor Refreshment Area (DORA), which allows establishments to have outdoor dining and alcohol in the public right-of-way abutting their properties without the need for fencing.

## MARKETING & BRANDING

The physical development of a downtown riverfront district must be supported through a strategy to build brand identity. Online engagement (i.e. website, social media), signage and wayfinding, and print materials (i.e. brochures, visitor guides) are all necessary platforms to encourage residents and tourists to visit the downtown and guide the perception of the downtown. Public-private partnerships - both local and regional - are essential to streamline a singular brand and identity.



*Design review promotes a unified vision and minimum standards for the look, feel, and atmosphere in a district with guidance on architecture, signage, landscaping, and materials.*



*Establishing a DORA is one way to cultivate an entertainment district and encourage patrons to stroll the riverfront area.*



*Public gathering spaces, like the Downtown Cuyahoga Falls Amphitheater and Pavilion, attract visitors to the area and help build brand identity.*



# COURTHOUSE SQUARE TRAFFIC & STREETSCAPES

## Defined Project(s)

Downtown revitalization and riverfront restoration in Warren should include enhancement of visual connections between the active uses in the downtown and the riverwalk. Mahoning Avenue presently divides the Courthouse Square - a central feature of the downtown - from the adjacent parks and recreation attractions. Future plans for the area should study and evaluate options for extending the square to the park through changes to the traffic pattern and/or transportation infrastructure on Mahoning Avenue from High Street to Market Street.

Signalized crossings throughout Mahoning Avenue are a potential option to create better and safer traffic flow. Signalized crossings allows users of all abilities to know when it is their turn to cross the street while simultaneously alerting drivers of the crossing pedestrians through flashing lights. Overall, designing Mahoning Avenue to include comprehensive signal orientation can benefit all roadway users.

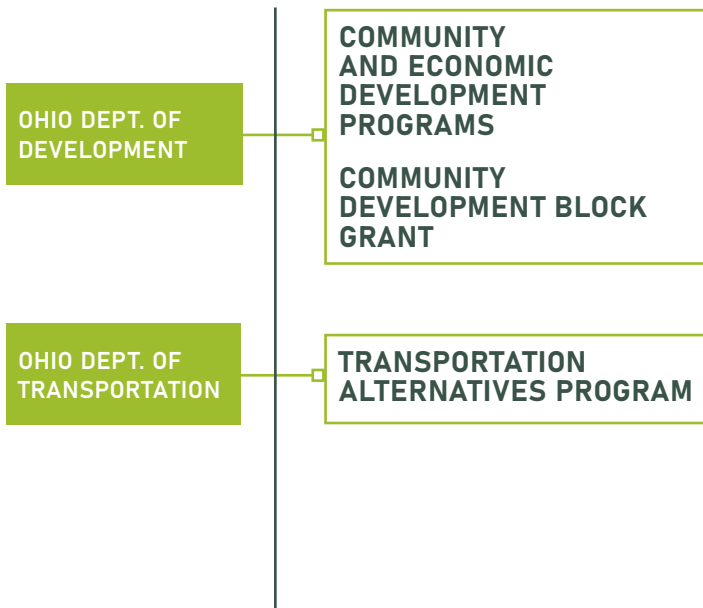
Pedestrian plazas are an excellent way to further the sense of place one feels in their community. Pedestrian plazas create a space for users to rest, relax, and enjoy while roaming the downtown area. Creative seating and local art enhancements can tailor a location to feel unique, special, and welcoming to residents and visitors.

## Design Elements

Design elements of a connection between the Courthouse Square and the Riverwalk on Mahoning Avenue may include the following:



## Funding Opportunities



# MULTI-USE CONNECTIONS

## Defined Project(s)

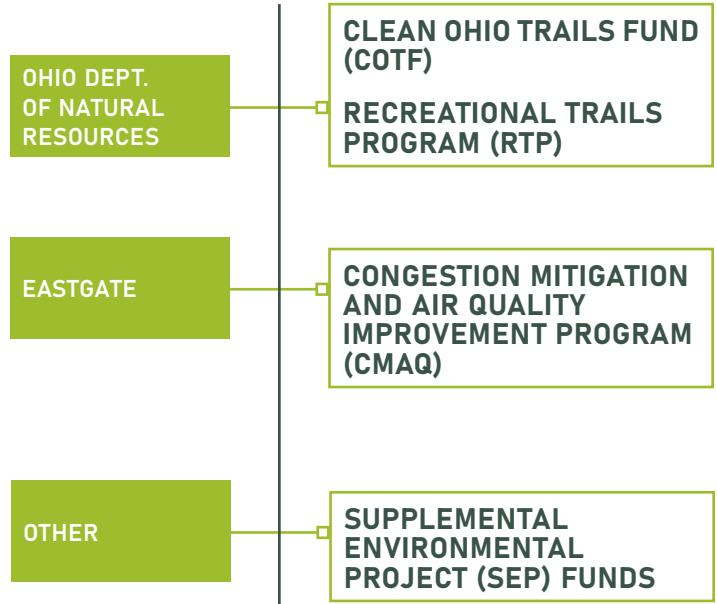
### PERKINS PARK DOWNTOWN DISTRICT

Downtown Warren has an existing shared-use path that runs next to the Mahoning River within Perkins Park. This path promotes walkability and bike-ability, however, there is a lack of regional connection that extends further outside of the greenspace limiting mobility at the path's entrances. The plan proposes an extension of the existing path to better promote the safe multi-use transportation into the proposed commercial district along East and West Market Street.

Not only will individuals be able to travel more easily within the greenspace and the commercial district, but they will be able to arrive to these locations through the multi-use connections from surrounding communities. These multi-use connections will extend beyond the immediate downtown along Market Street and continue adjacent to the Mahoning River. Promoting this connection creates a sense of community between residents, improves quality of life, and activates the lifestyle of individuals.

Just south of the priority site sits an industrial park adjacent to the Mahoning River. The multi-use connections will continue adjacent to the industrial park as part of the Western Reserve Greenway Phase 4, to allow individuals to travel along the path to the downtown.

## Funding Opportunities



## Design Elements

Alternative routes are shown in Figure X and may include different facility types, based on further feasibility analysis and community input. Examples of appropriate infrastructure include:



Sharrows are a shared environment, indicated by road markings, in which bicycles are entitled to full access of the travel lane. The simplicity in design translates to low implementation costs, but for safety and comfort, should be limited to low volume roads.



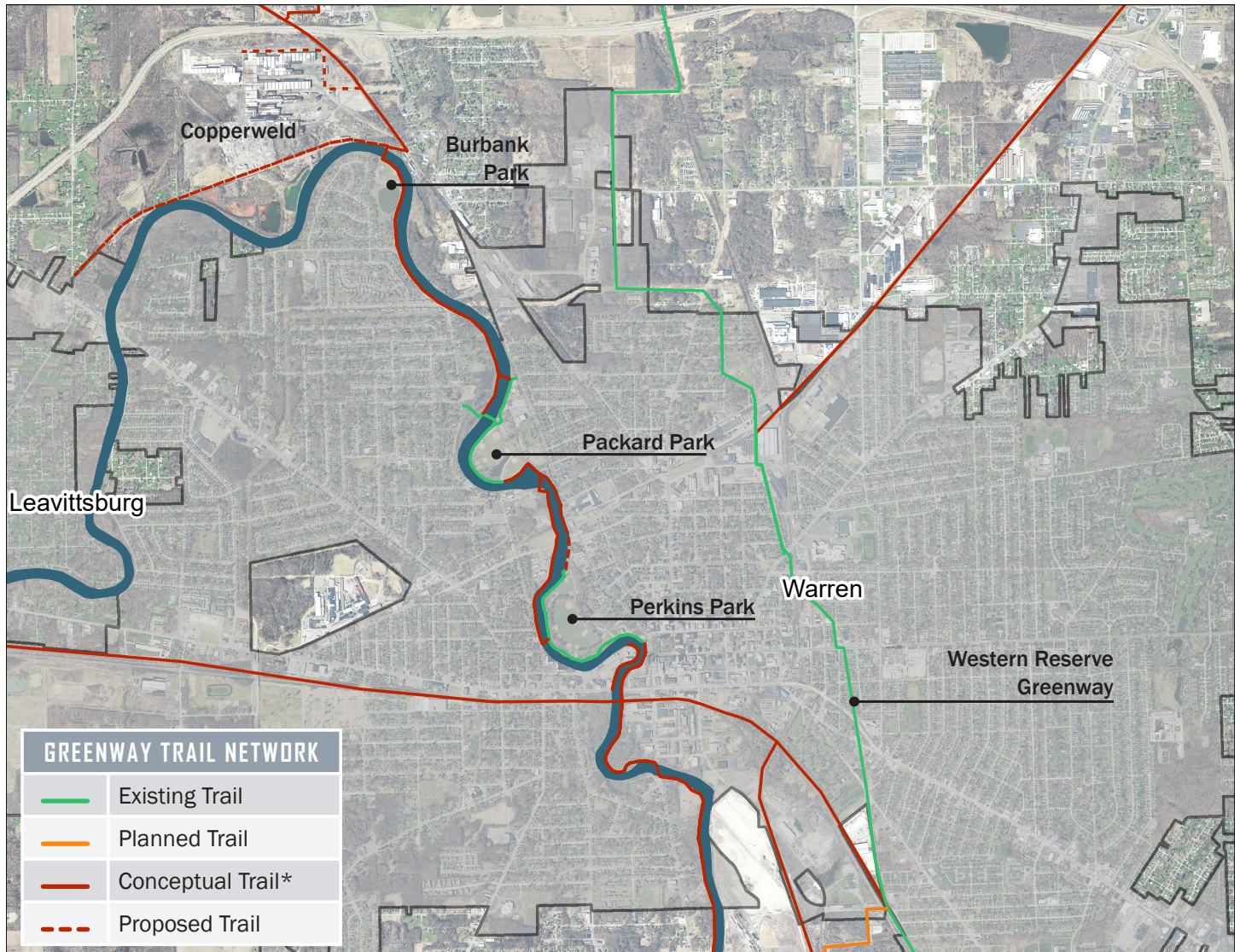
Protected bike lanes are designed for separate bike travel adjacent to automobile traffic, protected by a physical barrier such as planters, bollards, or parking. The barriers can improve safety and user comfort.



Multi-use paths are dedicated infrastructure for two-way travel of non-vehicular uses distinctly separate from vehicular travel. Paths may be used to establish connections beyond the existing roadway network or parallel to heavily trafficked streets.



FIGURE 9 WARREN'S SEGMENT OF THE MAHONING RIVER GREENWAY



The proposed internal connections will serve as a critical central link within the Mahoning Valley trail network. Traveling along the Mahoning River east of Canoe City in Leavittsburg, the next trail infrastructure are the paths at Packard and Perkins Parks in Warren. The Western Reserve Greenway runs north-south to the east of the corridor in this area, but is not linked to the river or riverfront attractions, such as the aforementioned parks.

The proposed trail segment would connect the downtown riverfront mixed-use district, including several civic buildings, to the rest of the region. The conceptual connections include those identified by The Nature Conservancy, in conjunction with the City of Warren, in an effort to identify and control non-native invasive species and develop nature-based management recommendations for local parks. Plans for brownfield remediation and redevelopment, such as the Copperweld site in Warren

Township, also present opportunities to include alternative transportation and position the Warren area for economic growth and prosperity.

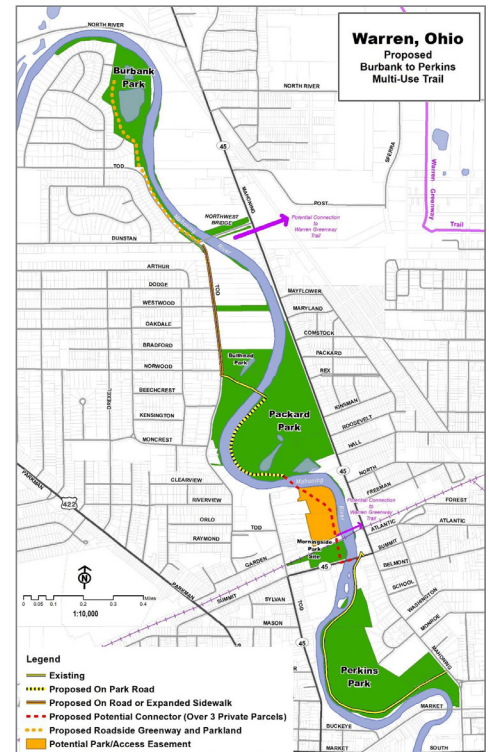
*\*As identified in previous planning efforts and identified in Eastgate's GIS database*



# PRIORITY ACTIONS FOR IMPLEMENTATION

## ENVIRONMENTAL & RECREATION

- A.1** Conduct a feasibility study and design/funding schedule for proposed trail connections.
- A.2** Secure funding for the proposed launch at Perkins Park.
- A.3** Implement park recommendations as summarized in The Nature Conservancy report “Recommendations for Nature-based Management Opportunities at Perkins, Packard, Bullhead, and Burbank Parks” (2020). Recommendations include facility modernization, safety upgrades, beautification, and clean up.
- A.4** Identify opportunities to improve the entrance to the Riverwalk and pedestrian safety at Mahoning Avenue.
- A.5** Enhance signage and wayfinding in the Peninsula area to welcome and guide downtown visitors to the river and other local attractions.
- A.6** Conduct preliminary design and engineering for the proposed pedestrian bridge at Perkins Park.
- A.7** Pursue implementation of planned parkspace at Summit St. (Mahoningside site) following dam removal.
- A.8** Identify and design a riparian zone.



*The proposed Burbank to Perkins trail connections identified in previous planning efforts by the City of Warren were utilized to conceptualize a regional trail network. Completing the Warren segment is not only critical for local success, but for the viability of a multi-county Mahoning River Greenway.*

## ECONOMIC & COMMUNITY DEVELOPMENT

- B.1** Institute design guidelines and a design review district for the downtown riverfront.
- B.2** Collaborate with the regional chamber of commerce and local businesses on a branding and marketing strategy for the downtown river district.
- B.3** Create an inventory of vacant and/or developable sites in the downtown and along the riverfront park system.
- B.4** Pursue site certification through JobsOhio of the former Republic Steel site (secondary opportunity site).