



# IM Crossing Multimodal Study

# IMMX



engineering

City of Indianapolis, Indiana



# Acknowledgments

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# 2018



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# Introduction

## Why create this plan?

West 38th Street between Michigan Road and Lafayette Road is a heavily traveled, high-speed corridor with as many as 35,000 vehicles per day traveling the roadway.

West 38th Street provides direct or secondary access to many important cultural, commercial, and residential destinations including:

- Butler University
- Crown Hill Cemetery
- Newfields
- Woodstock Club
- The Virginia B. Fairbanks Art and Nature Park
- Riverside Park and Golf Academy
- Marian University
- Single and Multifamily residential neighborhoods along Kessler Boulevard and Guion Road
- International Marketplace neighborhood

Currently, very limited bicycle and pedestrian facilities exist along the corridor prompting the City of Indianapolis to commission this study to determine the feasibility of constructing a multiuse path along West 38th Street between Michigan and Lafayette Roads.

## Plan Goals

The purpose of this plan is to guide the development of a multiuse path along West 38th Street by:

- Identifying a preferred route for safe bicycle and pedestrian travel along West 38th Street
- Identifying connectivity between destinations
- Utilizing a Technical Advisory Committee (TAC) to understand community desires
- Identifying projected project costs
- Creating a document suitable for use in the pursuit of project funding

## Plan Components

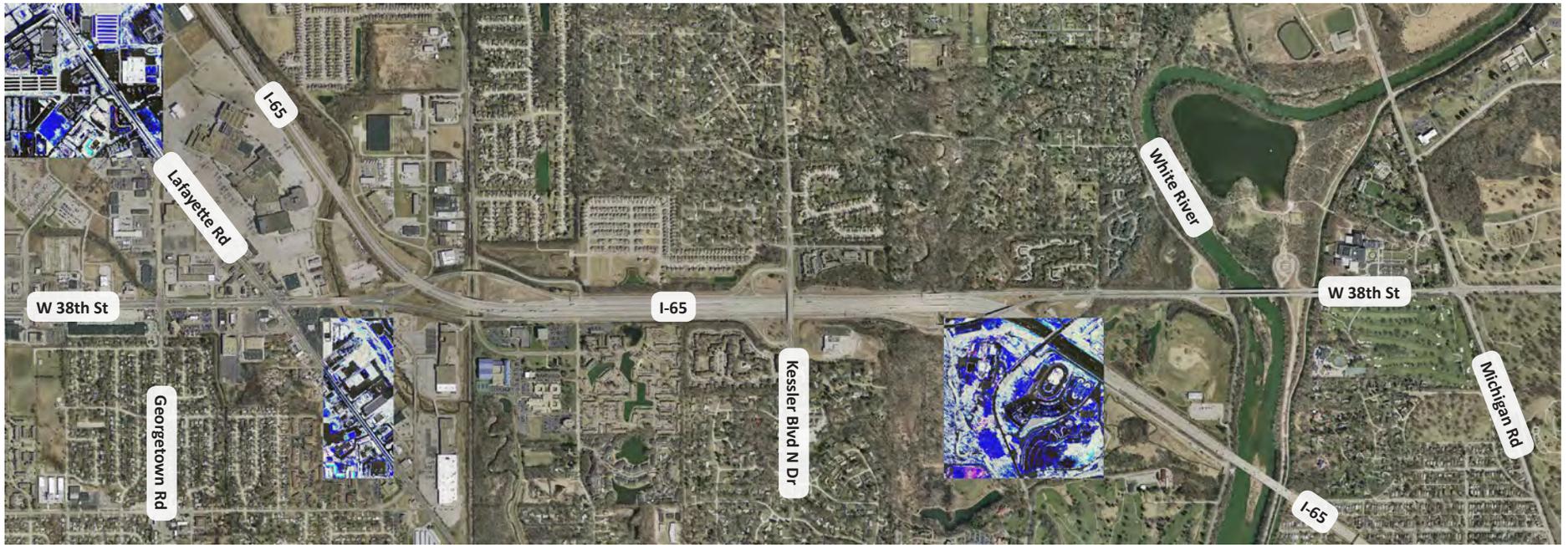
The master plan is organized around three key components. These components represent a sequential thought process beginning with establishing the overall vision for the path, then identifying potential routes that respond to the vision and to the physical corridor opportunities and constraints, and finally establishing a strategy for implementation.

The three primary components are supported by specific project tasks discussed later in this document.



*The proposed path will ultimately connect many community and civic destinations.*

# Introduction



## Context

The aerial image above shows the project area and locates some of the proposed destinations and connections located along the potential path. Existing conditions of the road are:

### Michigan Road to Central Canal

- Six lane divided local street
- Dedicated westbound left turn into Woodstock Club (signalized)

- Dedicated westbound right turn into Newfields (signalized)
- 230 linear feet of existing sidewalk on north side at Newfields entrance

### Central Canal and White River

- Four lane divided local street - fifth and sixth lanes drop off at White River Parkway E Dr
- 236-foot bridge over the Central Canal with sidewalk along north side

- 952-foot bridge over White River
- Free flow exits to White River Parkway East and West drives

### White River to Cold Spring Road

- Four lane divided local street
- Signalized intersection at Cold Spring Road

# Introduction



*The proposed path will ultimately connect many community and civic destinations.*

## Cold Spring Road to Commercial Drive

- 38th Street splits and is located on the north and south sides of I-65
- Interchange at Kessler Boulevard
- Access to and from Guion Road
- Access to and from I-65 west of Guion Road

## Commercial Drive to Lafayette Road

- Six to nine lane divided local street
- Eastbound and westbound lanes includes dedicated turn lanes to Industrial Boulevard and Commercial Drive
- Right eastbound turns at 38th Street to and from Commercial Drive are free flow
- Dedicated right and left turn lanes in each direction at Lafayette Road

More detailed information and aerials are included in the Existing Conditions & Analysis pages of this document.

# Process

The International Marketplace Crossing (IM Crossing or IMX) Multimodal Plan is the result of a collaborative process involving a consultant team, the City of Indianapolis, and members of a Technical Advisory Committee.

A project kick-off meeting was held with the entire planning team to discuss the project scope and schedule and to discuss planning team member's ideas for the long term vision of the proposed path.

Three advisory committee meetings were held during the process:

## October 11, 2016 - Advisory Meeting #1

- This meeting included a schedule update, further discussion of the project vision and goals, and an interactive discussion using large format aerial maps to identify preliminary potential path opportunities and constraints

## November 17, 2016 - Advisory Meeting #2

- This meeting included a schedule update, brief discussion of accomplishments to date, an interactive discussion using large format aerial maps to discuss proposed route opportunities and constraints, and presentation of a preliminary construction budget.

## January 5, 2017 - Advisory Meeting #3

- This meeting included a schedule

update, discussion of the process to date, detailed discussion of the proposed route, presentation of an updated budget, and a preliminary discussion of phasing.

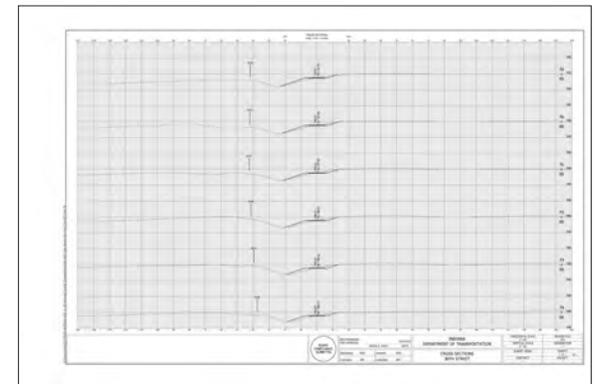
Overall tasks included in the planning process included:

- On-site field analysis of existing features and conditions and review of GIS information provided by the City. This information was used to help determine the site program and to create a base map.
- Review of existing data and plans affecting path development
- Completion of a preliminary environmental red flag investigation
- Development of a preliminary option based on existing conditions and committee input
- Development of a final route option based on committee input
- Final concept development, time line, and budget considerations

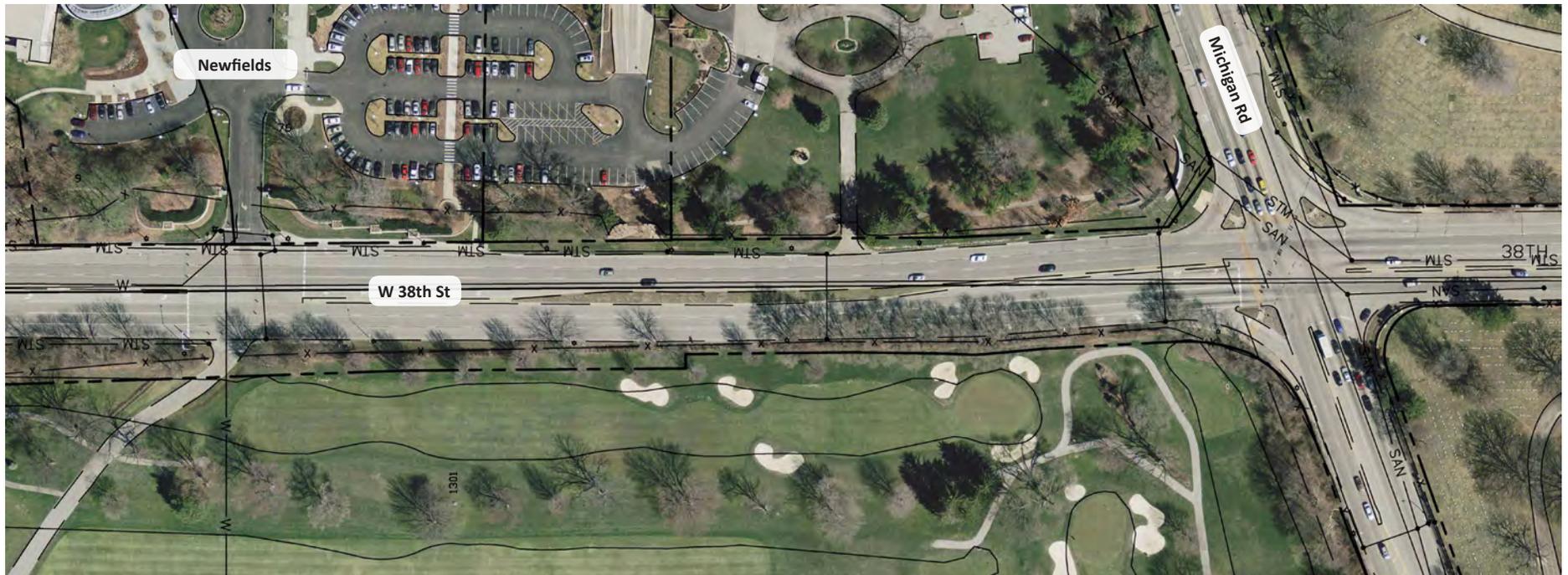
In addition to this master plan, the consultant team created a three dimensional proposed path alignment using GIS data and AutoCAD Civil 3D to create a preliminary set of design plans, profiles and path cross sections. These plans were used to assess path location in

relationship to land acquisition requirements (both temporary and permanent), Americans with Disabilities (ADA) guidelines, trail slope, earthwork, bridge structures, and potential need for wall construction.

The preliminary plans also allowed the design team to understand existing utilities in relationship to the proposed path location. The preliminary plan set is included by reference as an appendix to this master plan.



# Existing Conditions & Analysis



MICHIGAN ROAD AND NEWFIELDS

## Strengths

- Direct connection to Newfields, a project partner (N)
- Existing signals at Michigan Road and Newfields/Woodstock Entrance (N & S)
- Some existing sidewalk

## Weaknesses

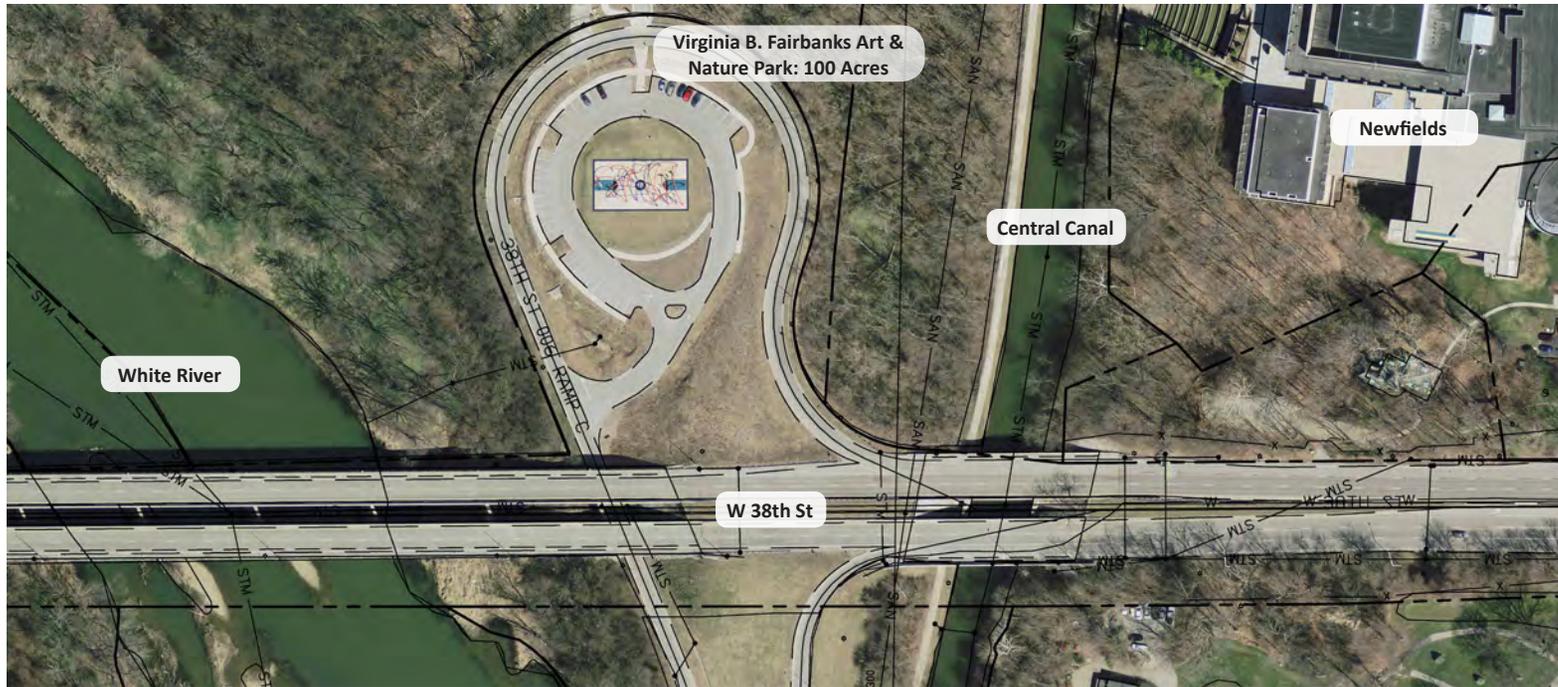
- Right of way required (N & S)
- Underground utilities (N & S)
- Challenging land acquisition (S)
- Potential conflict with Newfields entrance features (N)

## Notes

- Modifications to signal timing and pedestrian signals would improve safety

*All maps are oriented with north to the top of the page. Maps are organized starting at the eastern project boundary of Michigan Road, traveling west toward Lafayette Road.*

# Existing Conditions & Analysis



WHITE RIVER PARKWAY EAST DRIVE

## Strengths

- Direct connection to the Virginia B. Fairbanks Art & Nature Park: 100 Acres at Newfields (N)
- Connection to the Central Canal Tow Path (N & S)
- Existing sidewalk on canal bridge (N)
- Potential trail head with parking (shared with Newfields) (N)
- More available land to make connections (N)

## Weaknesses

- Crossing of free flow ramp (N & S)
- Need for reconfiguration of existing bridges or new bike/pedestrian only bridges (N & S)

## Notes

- Good views of the canal and river

# Existing Conditions & Analysis



WHITE RIVER PARKWAY WEST DRIVE

## Strengths

- Adjacent parcels owned by Indy Parks (N & S)
- Connection to White River Greenway (N & S)

## Weaknesses

- Crossing of free flow ramp (N & S)
- Steep slopes adjacent to road (N & S)

## Notes

- Good views of the canal and river

# Existing Conditions & Analysis



## COLD SPRING ROAD

### Strengths

- Connection to residential (N)
- Existing signal at Cold Spring Road
- Proximity/connection to Marian University

### Weaknesses

- I-65 as barrier (S)
- Land acquisition required (N)

### Notes

- Modifications to signal timing and pedestrian signals would improve safety

# Existing Conditions & Analysis



CROOKED CREEK

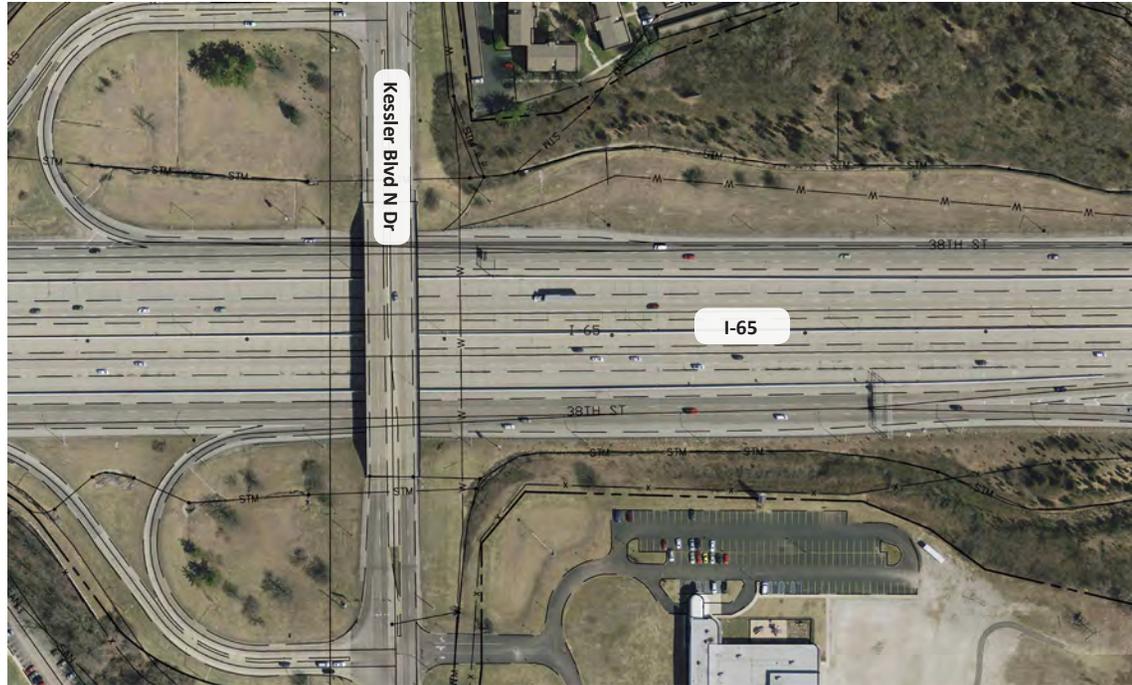
## Strengths

- Connection to Crooked Creek - views, interpretive node potential (N & S)

## Weaknesses

- I-65 as barrier (S)
- Stream crossing (N & S)

# Existing Conditions & Analysis



KESSLER BOULEVARD NORTH DRIVE

## Strengths

- Potential to connect to multiple residential neighborhoods via Kessler Boulevard North Drive (N & S)
- Wide existing right of way (N & S)
- Existing signals at ramps (N & S)

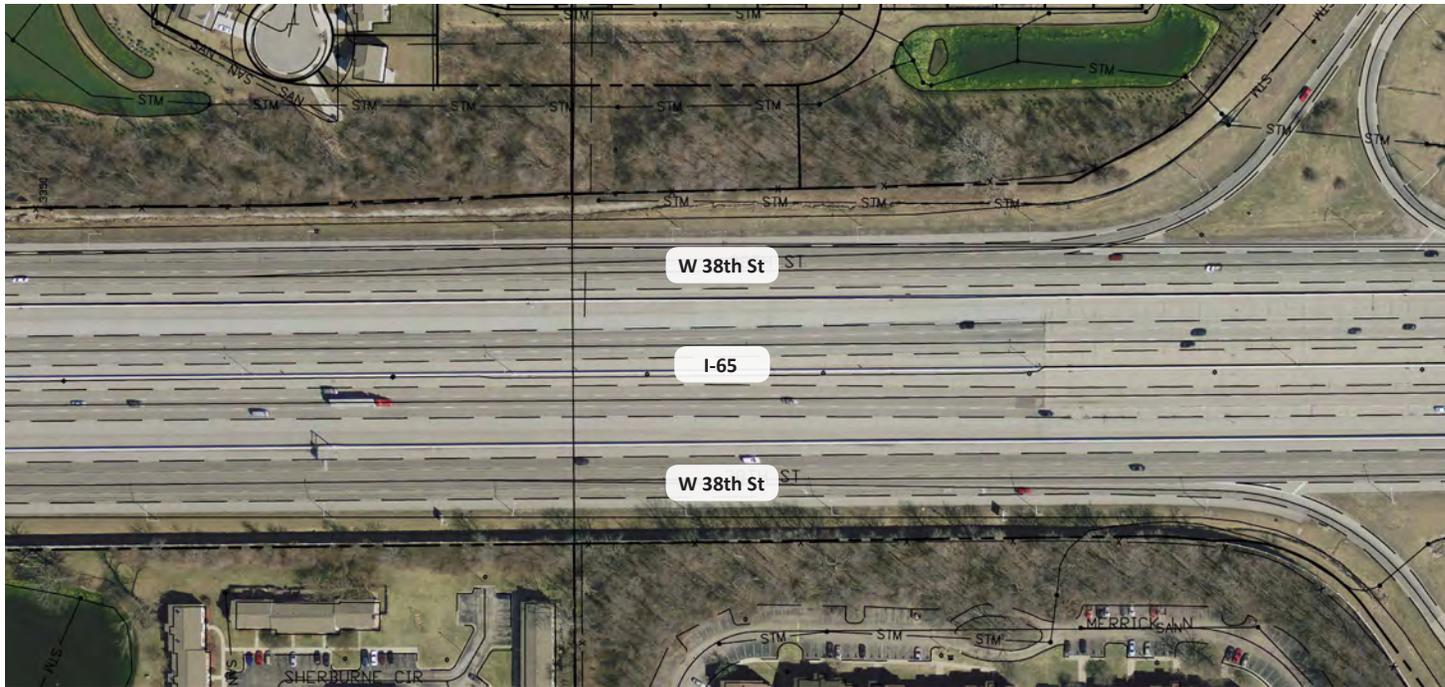
## Weaknesses

- Crossing through interchange (N & S)
- Steep slopes (N & S)

## Notes

- Modifications to signal timing and pedestrian signals would improve safety
- Potential exists to go under Kessler Boulevard North Drive

# Existing Conditions & Analysis



KESSLER BOULEVARD

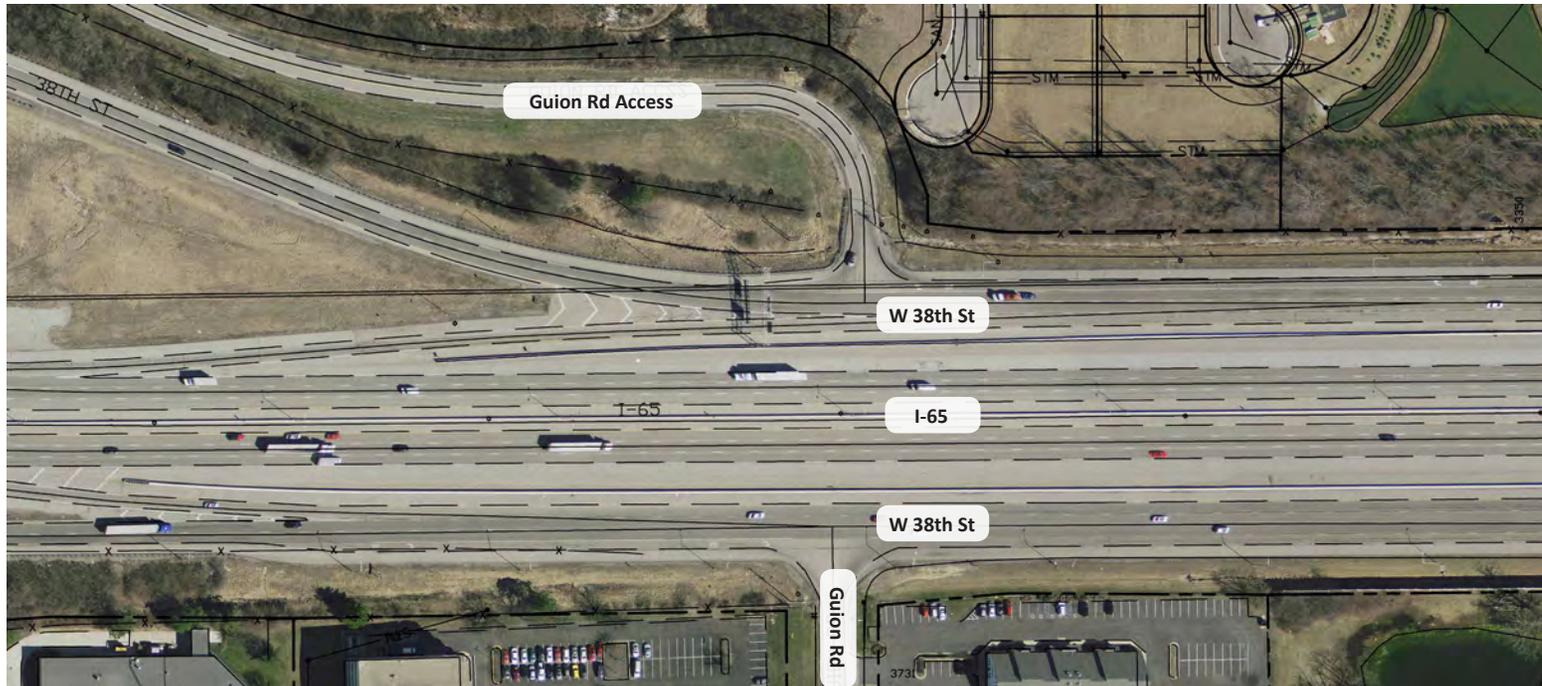
## Strengths

- Wide right of way (N)

## Weaknesses

- Sound wall (S)
- Drainage ditch adjacent to sound wall would require piping (S)
- Existing light poles could create conflict (N)

# Existing Conditions & Analysis



GUION ROAD

## Strengths

- Connection to former Community Hospital campus (S)
- Potential for direct connection to residential neighborhood (N)
- Connection to potential park (N)

## Weaknesses

- Crossing at Guion Road/Guion Access (N & S)
- 38th Street off ramp (N)
- Sound wall (S)

# Existing Conditions & Analysis



I-65

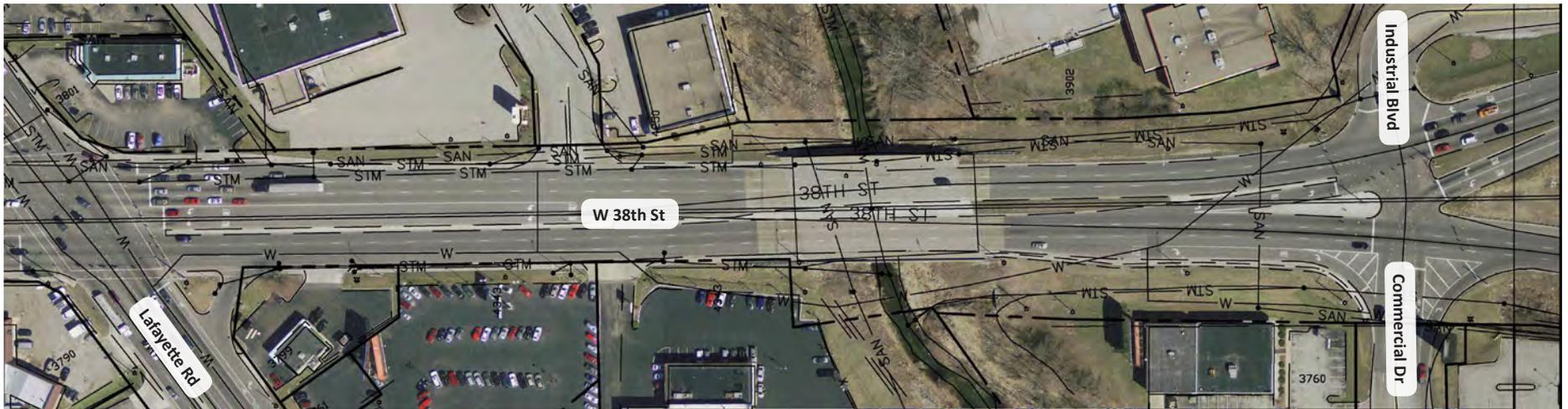
## Strengths

- Existing interchange infield graded for potential bridge (N)
- Connection to the International Marketplace gateway planting (N)

## Weaknesses

- Rail crossing (N & S)
- Guion Road crossing (N & S)
- I-65 interchange and ramps

# Existing Conditions & Analysis



## COMMERCIAL DRIVE

### Strengths

- Connection to future Little Eagle Creek Greenway (N & S)
- Connection to retail (N & S)

### Weaknesses

- Limited right of way near Lafayette Road (N & S)
- Commercial Drive intersection (N & S)
- Little Eagle Creek crossing (N & S)
- Free flow turns at Commercial Drive



# Existing Conditions & Analysis

## **Red Flag Analysis**

A red flag analysis was completed for the project area to identify potential environmental and historic opportunities and constraints. A summary of findings is presented below and the full document is included in the appendix.

The analysis focused on an area 0.5 miles to the north and south (1 mile wide total area) of West 38th Street.

## **Infrastructure**

A variety of infrastructure elements occur within the analysis area. Any proposed changes to road cross sections and traffic patterns may impact Crown Hill Cemetery and Indianapolis Public Schools. Further coordination may be necessary in the future.

Seven recreation facilities are located in the 0.5 mile analysis area. Riverside Golf Academy is adjacent to the 38th Street corridor. Indy Parks and Recreation was represented on the TAC.

Four north/south pipelines cross the corridor. Coordination with pipeline owners will be necessary during final design and engineering.

The proposed path must cross an existing CSX rail line at the west end of the project. Detailed discussions of the proposed path will need to occur with CSX during the design process.

Any proposed 38th Street path will cross the

Central Canal Towpath and the White River Greenway. It is expected that trail to trail connections will be made at these locations.

## **Water Resources**

A proposed path along 38th Street has potential impacts to four waterways including the Central Canal, White River, Crooked Creek and Little Eagle Creek. Factors to consider include the potential for wetlands located along these waterways, water quality concerns (all but Crooked Creek are considered impaired streams), and required permitting for construction in a floodway.

It is also possible that roadside ditches and drainage features along 38th Street will, with further investigation, be identified as wetlands. This potential was discovered by the design team in the identification of a preferred route.

## **Hazardous Materials**

Several types and locations of hazardous materials sites are within the project area including automotive related contamination (former services stations, car dealerships), leaking underground storage tanks, state cleanup sites, and underground storage tanks. Further coordination with the Indiana Department of Environmental Management will be necessary during final design if the proposed path conflicts with the potential hazards.

# Existing Conditions & Analysis

## Ecological Resources

Several endangered species are found in Marion County and potentially in the project area. Further coordination with the US Fish and Wildlife Service (USFWS) and the Indiana Department of Natural Resources (IDNR) should occur as design progresses.

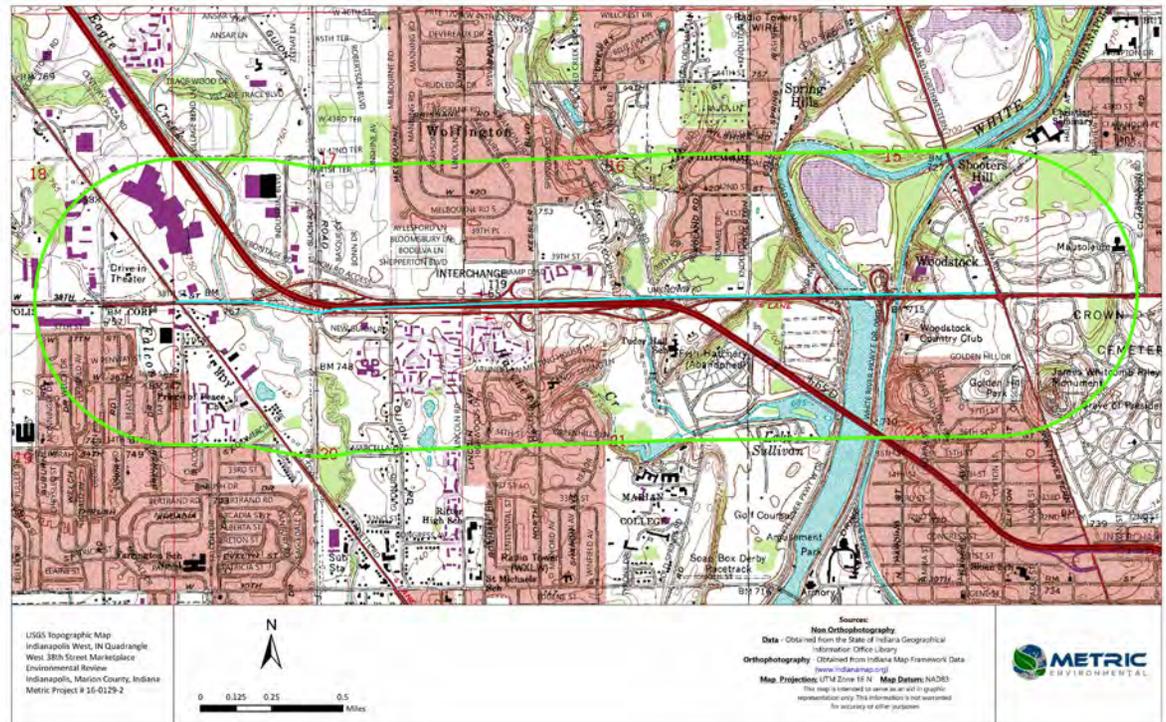
## Cultural Resources

A review of the Indiana State Historic Architecture and Archaeological Database identified 15 cultural resources within the analysis area located as close as 0.10 miles from 38th Street. In addition, the proposed path will run adjacent to four National Register listed historic districts. Any use of Federal funds to design and/or construct the path will result in the need for a full cultural resources analysis meeting the guidelines of Section 106 of the National Historic Preservation Act of 1966.

## Permitting

Based on the proposed project scope it is anticipated that construction of the path will require the following permits:

- Clean Water Act Section 401 and 404
- IDNR Construction in a Floodway
- National Pollutant Discharge Elimination System (NPDES) Rule 5
- Rivers and Harbors Act Section 10



Red Flag Investigation study area. The study was completed by Metric Environmental.

# Framework

## Vision

Time was spent in Technical Advisory Committee (TAC) meetings one and two discussing the overall vision for the path as well as more specific project goals.

During these meetings the following vision for the path was established:

“The IMX should be:

- Efficient – an efficient and obvious path between Michigan and Lafayette Roads. The path’s primary function is transportation. Recreation is a secondary function
- Adaptable – A transportation corridor that provides recreation
- Inviting – The path should be designed to attract users of all abilities
- Connected – The path should include north and south connectivity
- Safe – Usable and safe during all hours
- Interesting – The path should be a “journey and an experience”

## Connectivity

Connectivity was a common theme in Technical Advisory Committee discussions. A list of possible connections was generated in the first advisory committee meeting:

- Riverside Parkway
- Little Eagle Creek
- Newfields
- Cold Spring Road/Marian University
- Kessler Boulevard and its residential areas
- *Riverside High School (at the Naval Armory)*
- Canal Towpath
- IndyGo routes and stops
- Railroad track (possible future rapid transit route)
- *Facilities east of Michigan Road*
- *New library (Moller Road)*
- *Eskenazi Health Center*
- Mixed use communities
- *Proposed OrthoIndy Foundation YMCA*
- *Proposed IM Global Village*
- *Cinema Lounge*
- *Healthplex, rest of the former Community Hospital campus*
- Lafayette Square Mall

Given the project limits of Michigan and Lafayette Roads, some of the potential

connections listed in italics may not be directly connected by the proposed path. However, they may be indirectly connected. As an example, the proposed library on Moller Road would connect to the existing sidewalks along West 38th Street, west of Lafayette Road, which in turn will connect pedestrians to the proposed path at Lafayette Road.

## Program Elements

The primary function of the IMX is to provide safe and efficient bicycle and pedestrian access along an extremely busy roadway. A list of additional elements was generated by the Technical Advisory Committee as strongly desired to create a better user experience. The final project should:

- Incorporate public art and public murals
- Highlight the adjacent Indy Cycloplex and the potential to bike to Marian University
- Highlight the river and the creeks
- Highlight restaurant venues throughout the Marketplace, Global Village
- Highlight the area’s Keep Indianapolis Beautiful projects

## Route Exercises

A majority of the meeting time during TAC meeting one was spent reviewing project area maps and discussing potential route alternatives.

Preliminary options discussed during meeting one included putting the path:

- On the north side of 38th Street
- On the south Side of 38th Street
- On a combination of the north and south sides, crossing at Kessler Boulevard

In meeting two, the large scale maps were reviewed again, this time with the following information:

- A green line indicating the preliminary preferred route
- Yellow lines illustrating alternative options
- Orange lines representing potential spur connections

Each potential location was discussed and highlights from the discussion included:

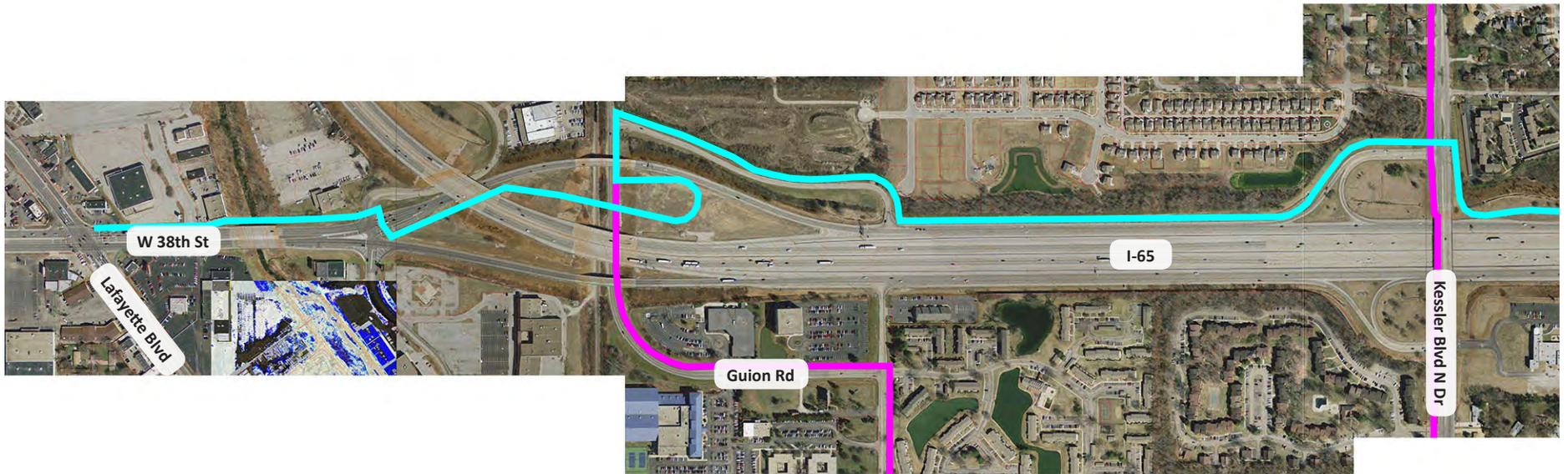
- Locating the path in the 38th Street median between Newfields and Cold Spring Road. This concept was eliminated due to a lower level of comfort for path users being in the median with traffic on two sides and for expected construction costs to modify bridges of the Central Canal and White River.
- Locating a portion of the path along 39th Street or creating a shared use

roadway with 39th Street. This option was eliminated do to right of way acquisition concerns and safety issues.

- Crossing the path from the north side of 38th Street to the south at Kessler Boulevard. Although the design team believed that the existing Kessler Boulevard bridge over I-65 and 38th Street could be modified to accommodate multimodal traffic, the path from Kessler to the west would either have to be constructed in front of or behind the existing sound wall located between Kessler and Guion Road. If placed in front, existing drainage would have to be piped and the separation of the path from the road was not believed to feel comfortable or meet standards. If behind the wall, extensive land acquisition would be required and the path would not be visible in this section prompting safety concerns.

Using input gathered at the second TAC meeting and additional feedback received from the Department of Public Works, Department of Metropolitan Development, and Indy Parks and Recreation, a preferred route was selected.

# Preferred Route



## Preferred Route

The cyan line in the image above shows the entire preferred route from Lafayette Road on the west to Michigan Road on the east. Pink lines illustrate potential future path connections to a variety of neighborhoods and cultural destinations.

Features of the preferred route are discussed in more detail on the following pages.

# Preferred Route



# Preferred Route



## Michigan Road

- Connect to existing sidewalk pad at Michigan Road (1)
- Upgrade pedestrian crossing signals and timing at Michigan Road
- Right-of-way required from Newfields

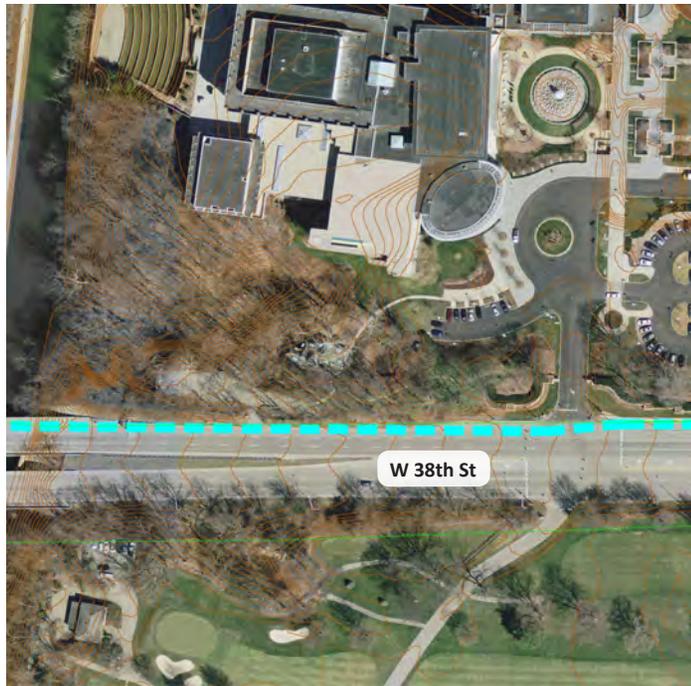


*Looking east at Newfields towards Crown Hill Cemetery and Michigan Road. No impact to the existing Newfields walls and sign are anticipated in this area.*



*Looking west towards Newfields entrance. Land acquisition will be required in this area to maintain a safe distance between the existing curb and proposed path.*

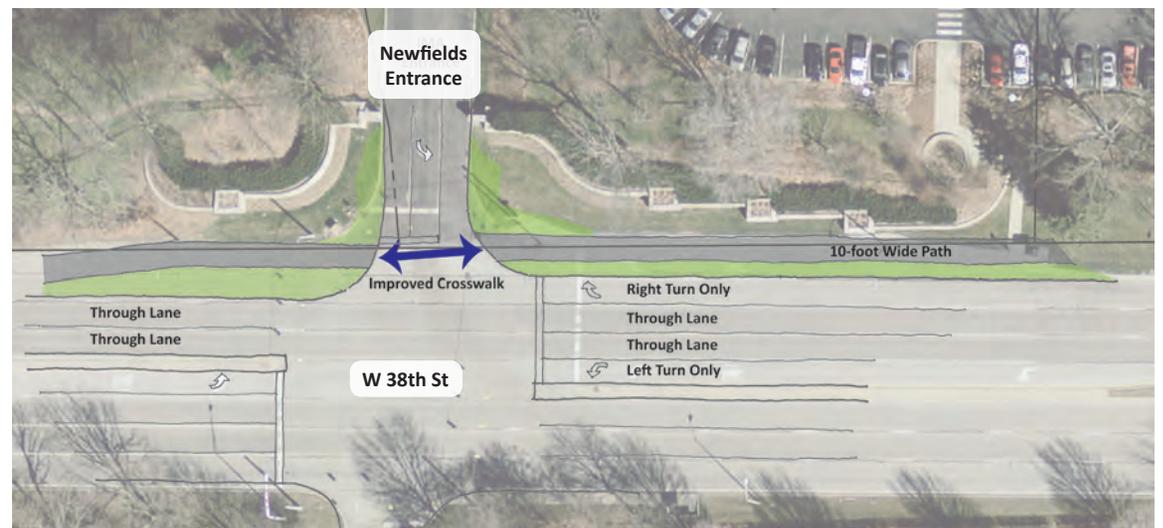
# Preferred Route



The existing lane configuration at Newfields entrance includes a dedicated right turn to Newfields, three westbound through lanes, a dedicated left turn into the Woodstock club, and three eastbound through lanes.

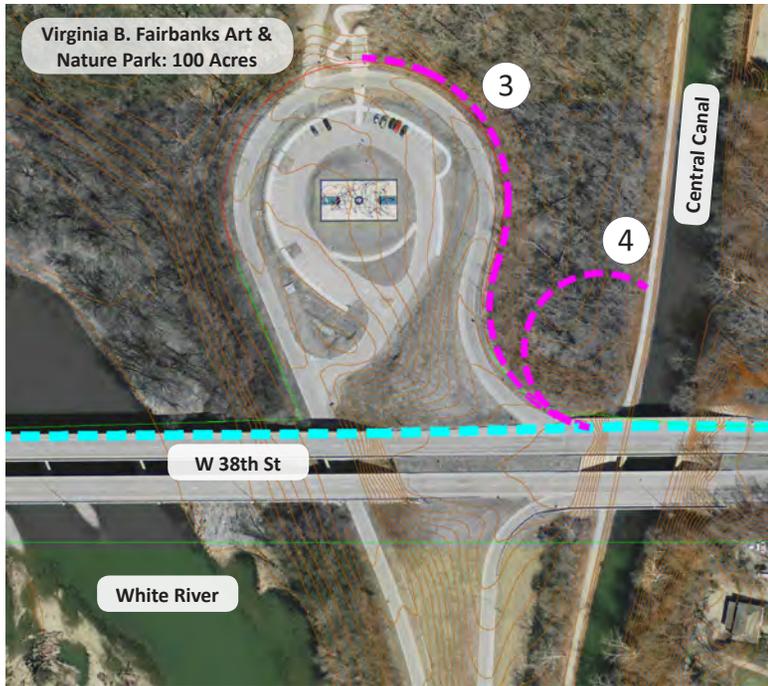
## Newfields

- Shift right turn lane into Newfields to the south (2)
- Maintain two through lanes and dedicated left turn to the Woodstock Club
- Use existing right turn lane and approach lane to White River Parkway for path to avoid Newfields property and steep slopes found along the north edge of 38th Street



The proposed configuration absorbs the existing right turn lane to the east of Newfields entrance and the northern most through lane to the west of the entrance. A dedicated right turn to Newfields will be shifted south, two westbound through lanes remain as does the dedicated left turn to the Woodstock Club. Eastbound traffic remains unchanged.

# Preferred Route



A free flow ramp currently exists from westbound 38th Street to White River Parkway East Drive

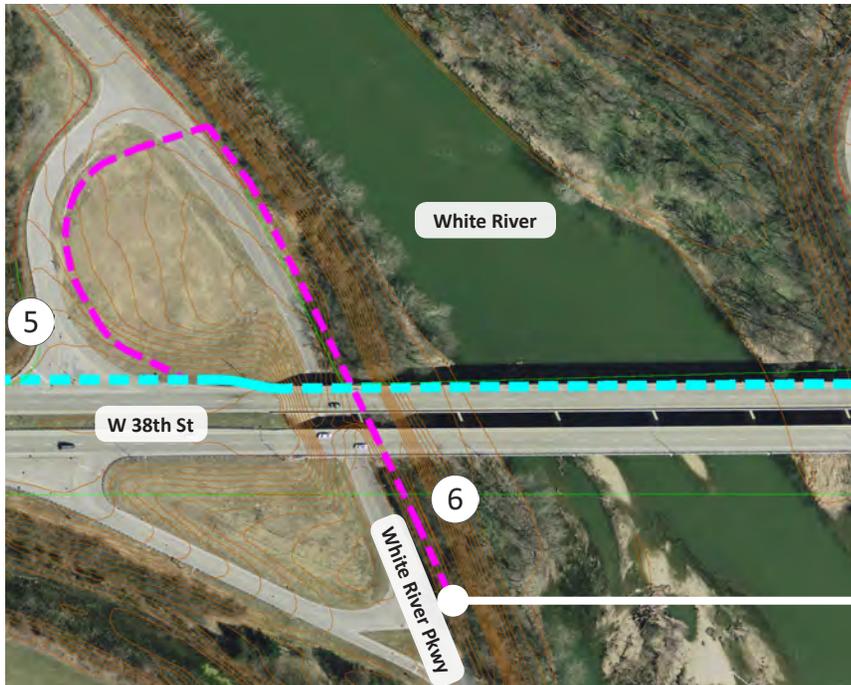


The proposed configuration would eliminate the existing free flow ramp and create a dedicated right turn. This will slow down turning traffic and provide a safer path crossing.

## White River Parkway - East Drive

- Reapportion existing bridges over the Central Canal and White River to accommodate path. Alternatively, add additional width to the bridges
- Revise exit ramp geometry into dedicated right turn lane
- Spur connection to Virginia B. Fairbanks Art & Nature Park: 100 Acres (3)
- Spur connection to Canal Towpath (4)

# Preferred Route



Connect to existing White River Greenway at this point



Existing sidewalk on the Central Canal bridge.

## White River Parkway - West Drive

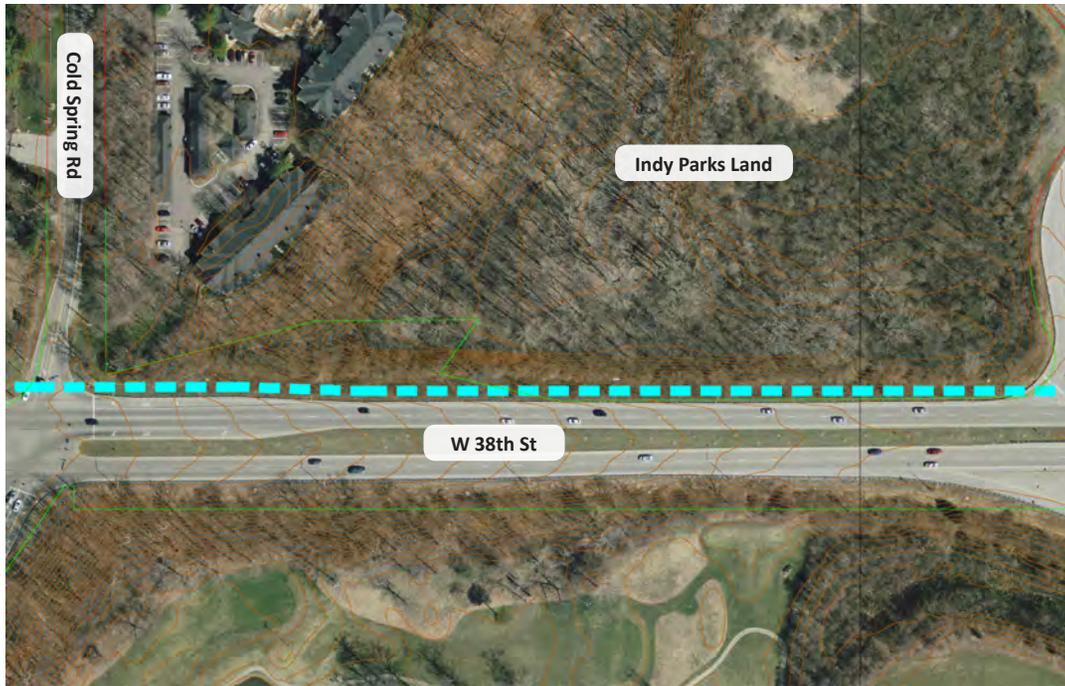
- Reapportion existing bridge over the White River to accommodate path. Alternatively, add additional width to the bridges
- Remove free flow right turn movement (5)
- Spur connection to White River Greenway (6)

Create a similar situation to East Drive by removing the free flow ramp to West Drive and creating a dedicated right turn to reduce traffic speed and increase crossing safety.



View of the Central Canal from the existing bridge.

# Preferred Route



## White River Parkway West Drive to Cold Spring Road

- Land acquisition required west of the White River Parkway exit. Land is owned by Indy Parks, an inter-agency agreement is possible.
- Improve crosswalk and signal timing at Cold Spring Road to improve bicycle and pedestrian crossing safety

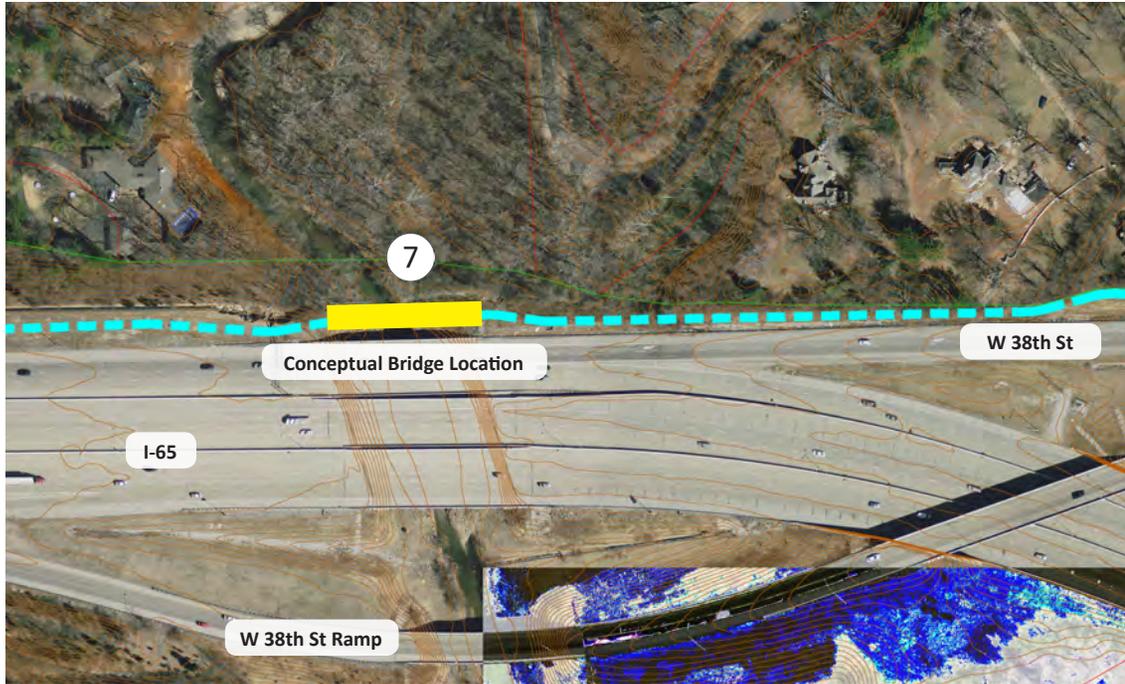
# Preferred Route



## Cold Spring Road to Crooked Creek

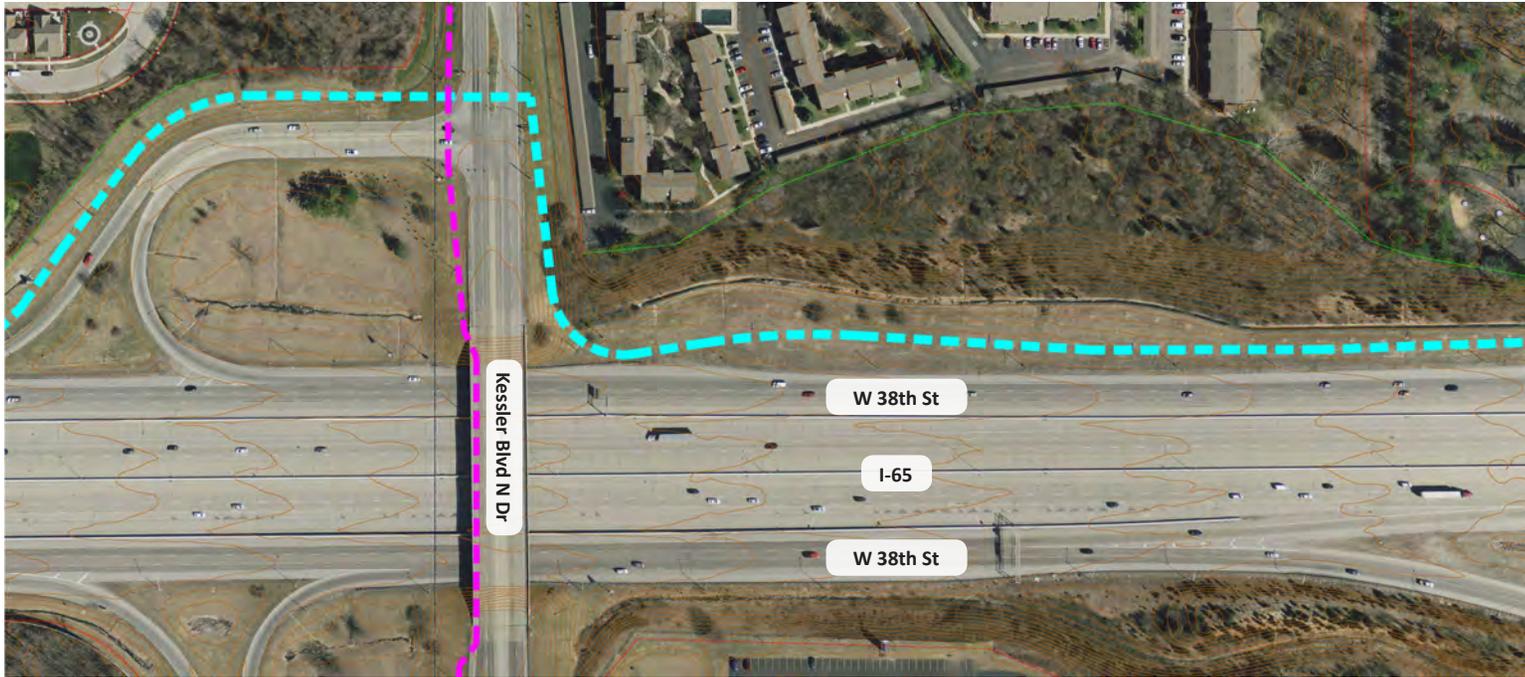
- Land acquisition required from two properties west of Cold Spring Road
- Path will cross two driveways

# Preferred Route



## Crooked Creek

- Temporary land acquisition required from residential property east of Crooked Creek
- New prefabricated bicycle and pedestrian bridge over Little Eagle Creek (7)



## Kessler Boulevard

- Climb slope to the east of Kessler Boulevard to existing signalized intersection at ramp
- New highly visible crosswalks and advance pedestrian and bicycle warning signs on Kessler Boulevard
- Modify existing signal equipment and timing to improve multimodal safety
- Future north/south path along west side of Kessler Boulevard to connect multiple residential neighborhoods
- Reapportion existing Kessler avenue bridge to accommodate multiuse path on west side

# Bridges

New bicycle and pedestrian bridges are proposed at both Crooked Creek and, as discussed later in this document, Little Eagle Creek.

It is recommended that prefabricated bridge structures be used at these two locations. There are many standard options available for this type of structure and customization is also possible.



# Bridges



# Preferred Route



## Kessler Boulevard

- Follow the 38th Street on-ramp at bottom of slope. Modifications to drainage may be needed
- Wide right of way on north side of 38th Street
- Trail to be located between existing light poles and drainage ditch

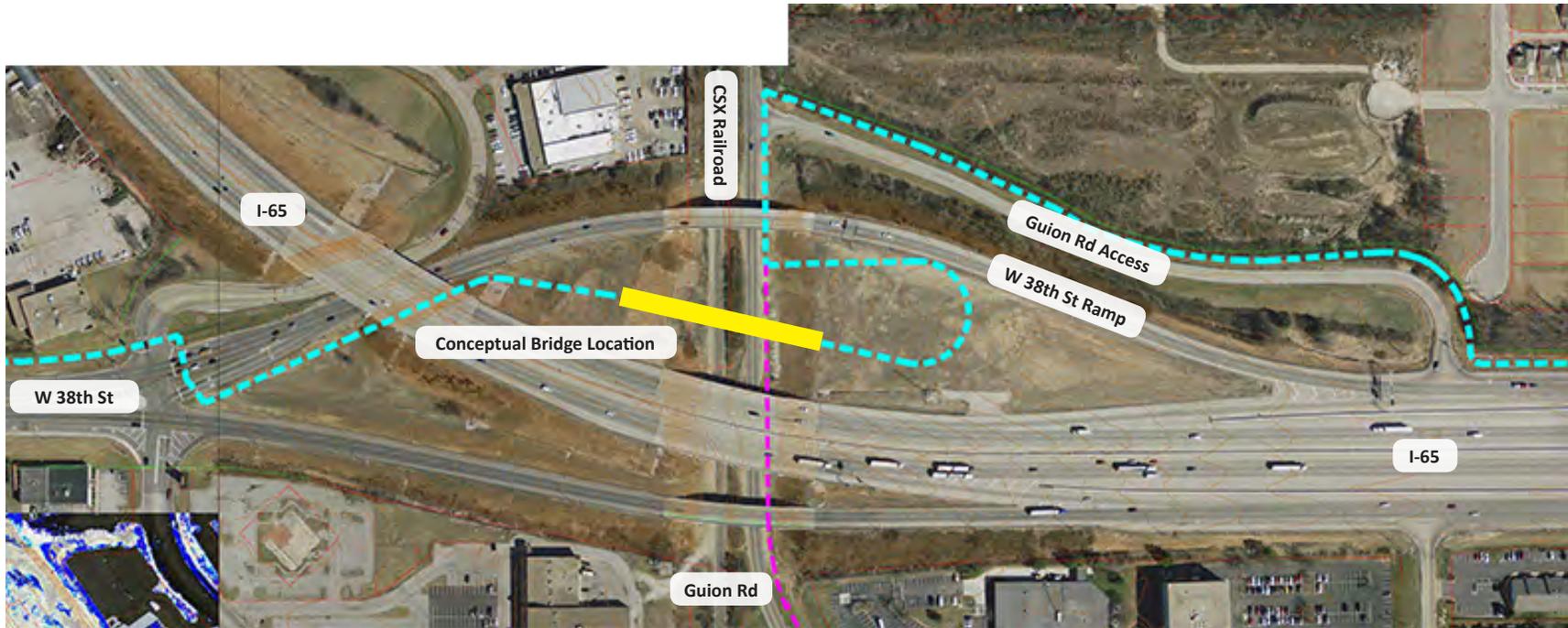
# Preferred Route



## Guion Road

- Place path between existing lights and ditch
- Follow Guion Road on the north side
- Future neighborhood connection
- Connection to potential park on the north side of Guion Road Access

# I-65 and the Railroad



One of the most challenging aspects of the route study was determining the best solution to route the path through the West 38th Street and I-65 interchange.

The interchange includes a complicated geometry and:

- Guion Road Access
- Guion Road
- 38th Street on- and off-ramps
- The intersection of 38th Street and Commercial Drive

- Steep slopes
- CSX rail line

Multiple alternatives were developed following the first TAC meeting and each was evaluated based on cost, constructibility, user experience, connectivity, and perhaps most important, safety.

Options investigated included reappportioning the existing north or south ramp bridges to accommodate bicycle and pedestrian traffic, creating a new bicycle and pedestrian bridge, and crossing Guion Road and the rail line at grade.

Ultimately a route following Guion Road Access, using the slope of the interchange infield to climb existing grade, and constructing a new bike/pedestrian bridge over Guion Road and the railroad was selected. Although not the least expensive option, this option provides the best user experience, eliminates bicycle and pedestrian conflict with the rail line, and provides an opportunity to create a signature gateway element consistent with the concepts included in the 2011 *International Marketplace Gateway Study*.

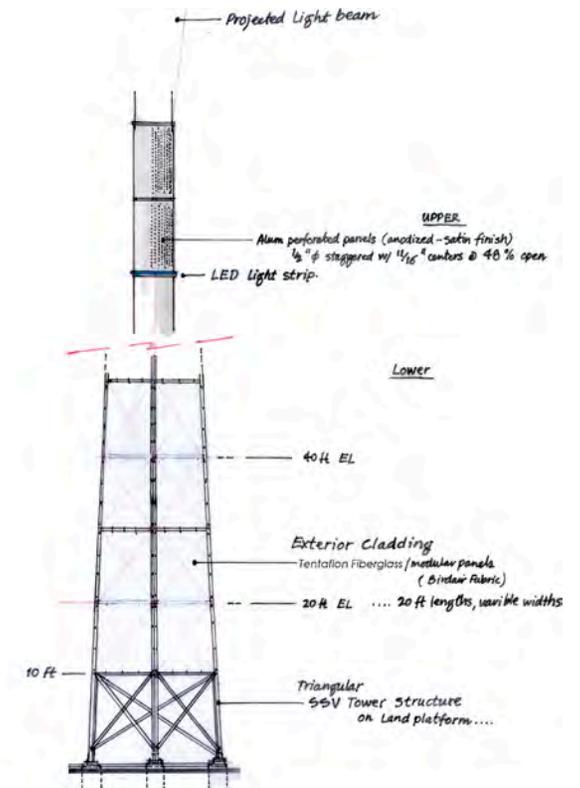
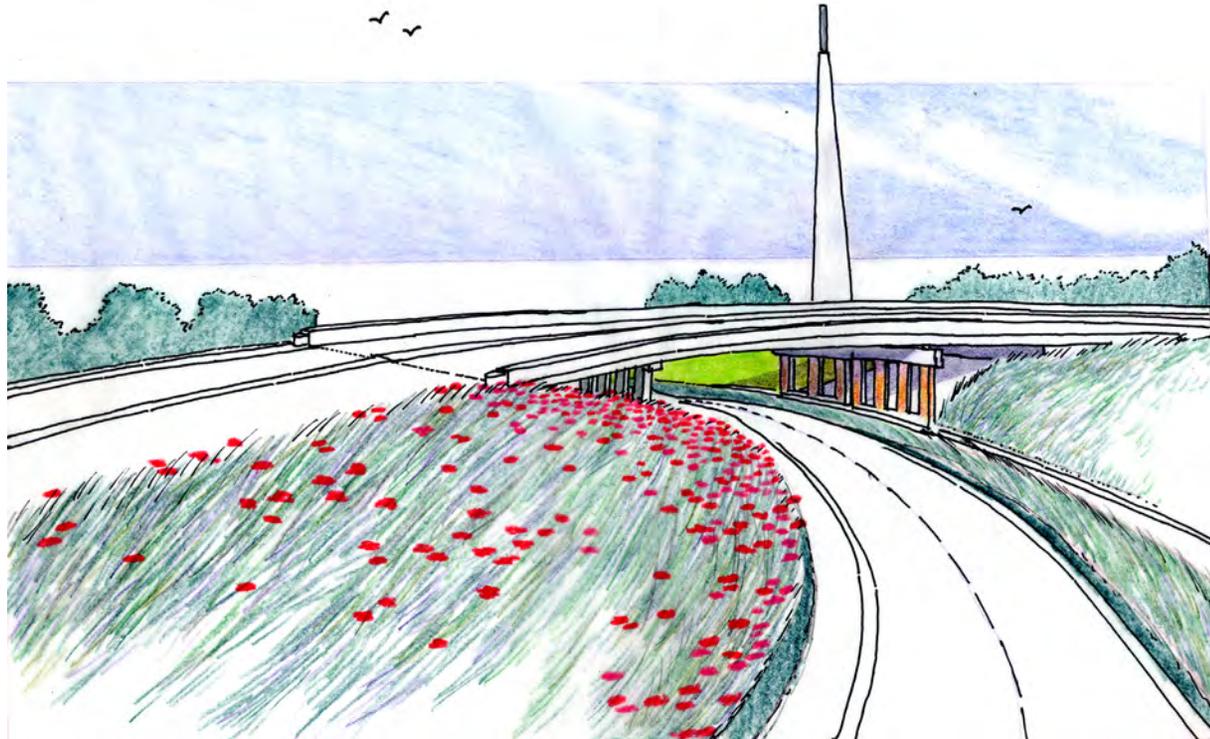
# I-65 and the Railroad

Much time was spent in the second and third TAC meetings discussing the selected alternative and the potential for other options. Ultimately, this option is included; however, at the time funding is acquired and design and engineering are implemented, other alternatives may be further explored.



The images on this page are from the 2011 International Marketplace Gateway Study. The study includes several key vision strategies including the use of structures as icons. The study included specific recommendations for creating gateway structures in the I-65 and 38th Street interchange including the tower illustrated here.

The proposed bicycle and pedestrian bridge over Guion Road and the railroad supports this vision as a monumental and iconic gateway structure.



# Signature Bridges

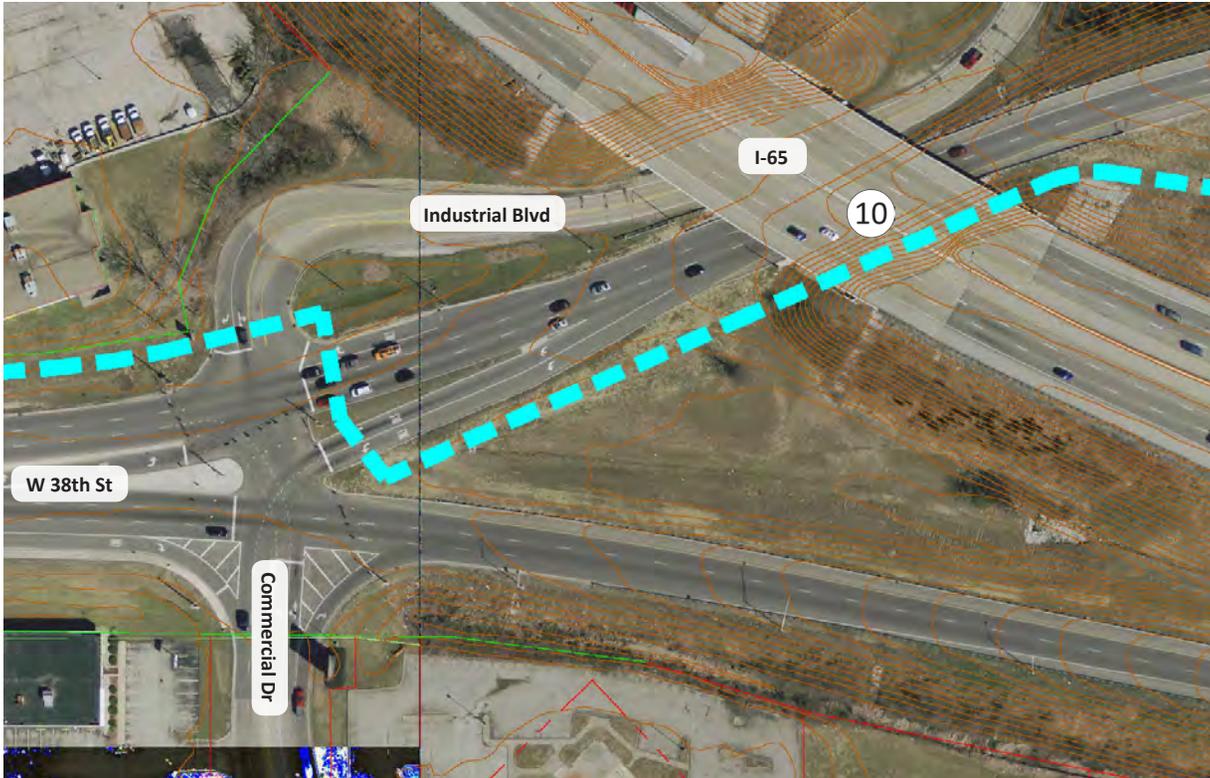
The potential to create an iconic gateway bridge is limited only by imagination and budget. The images shown here were presented at the third TAC meeting to illustrate the creative range of possible bicycle and pedestrian bridges and to feed the creative thought process.



# Signature Bridges



# Preferred Route



*The existing I-65 Bridge over westbound 38th Street includes a concrete slope wall. The proposed route requires the lower portion of the wall to be removed, a retaining wall to be constructed, and the trail to be located under the bridge between the retaining wall and existing bridge piers.*

*The design team and representatives from the City of Indianapolis met with INDOT, Greenfield District, to discuss this concept and no objections were given.*

## Commercial Drive

Another challenging area is Commercial Drive at the west end of the I-65 interchange. The exiting intersection includes:

### Westbound

- Dedicated right turn lane
- Three through lanes (from the I-65 off-ramp)
- Two dedicated left turn lanes

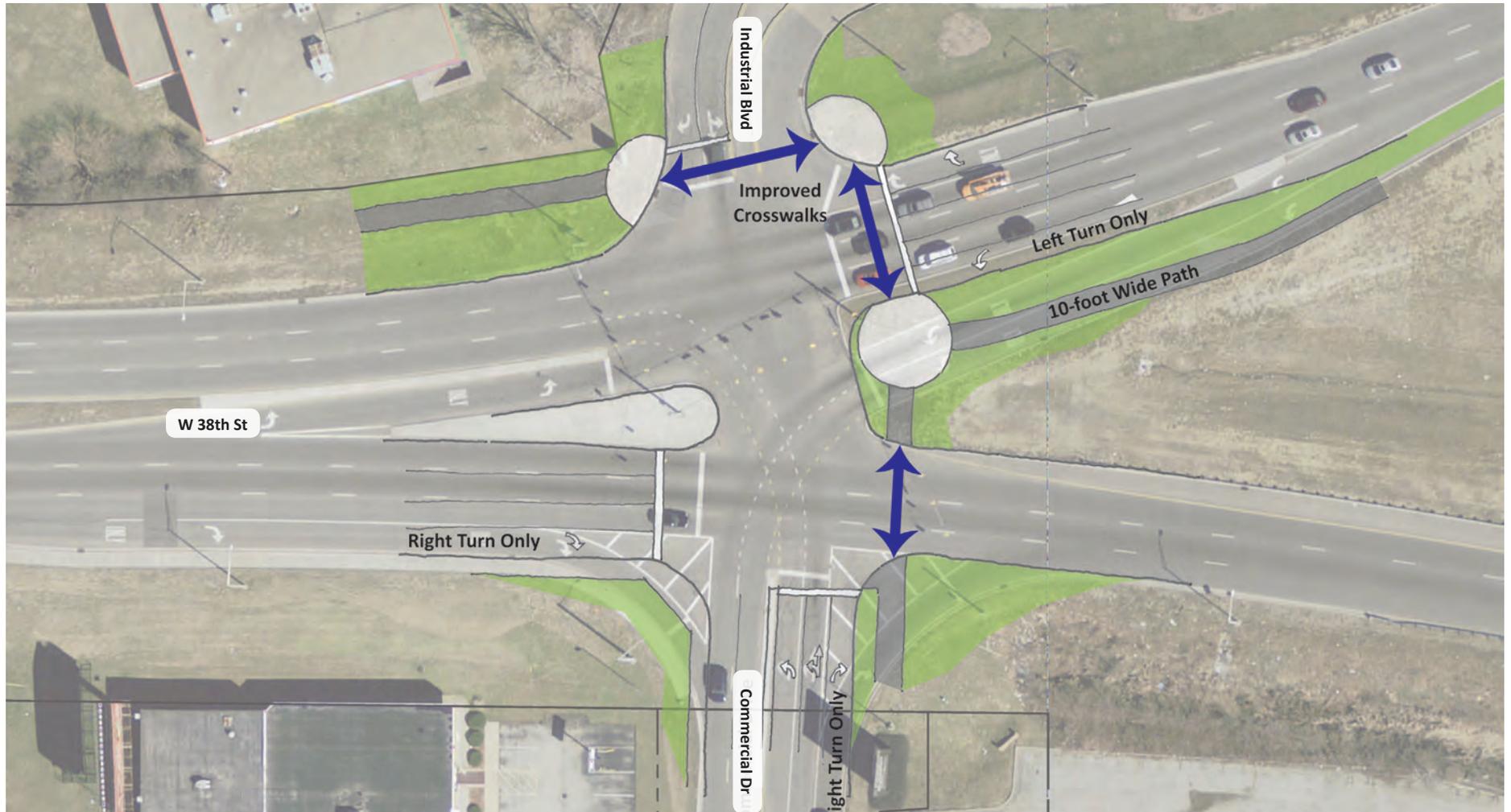
### Eastbound

- Free flow right turn lanes to and from Commercial Drive
- Three through lanes (to the I-65 on-ramp)
- Dedicated left turn lane

An existing sidewalk is located on the south side of 38th Street west of Commercial Drive. No other bicycle or pedestrian facilities exist. The proposed improvements are shown on the facing page and include:

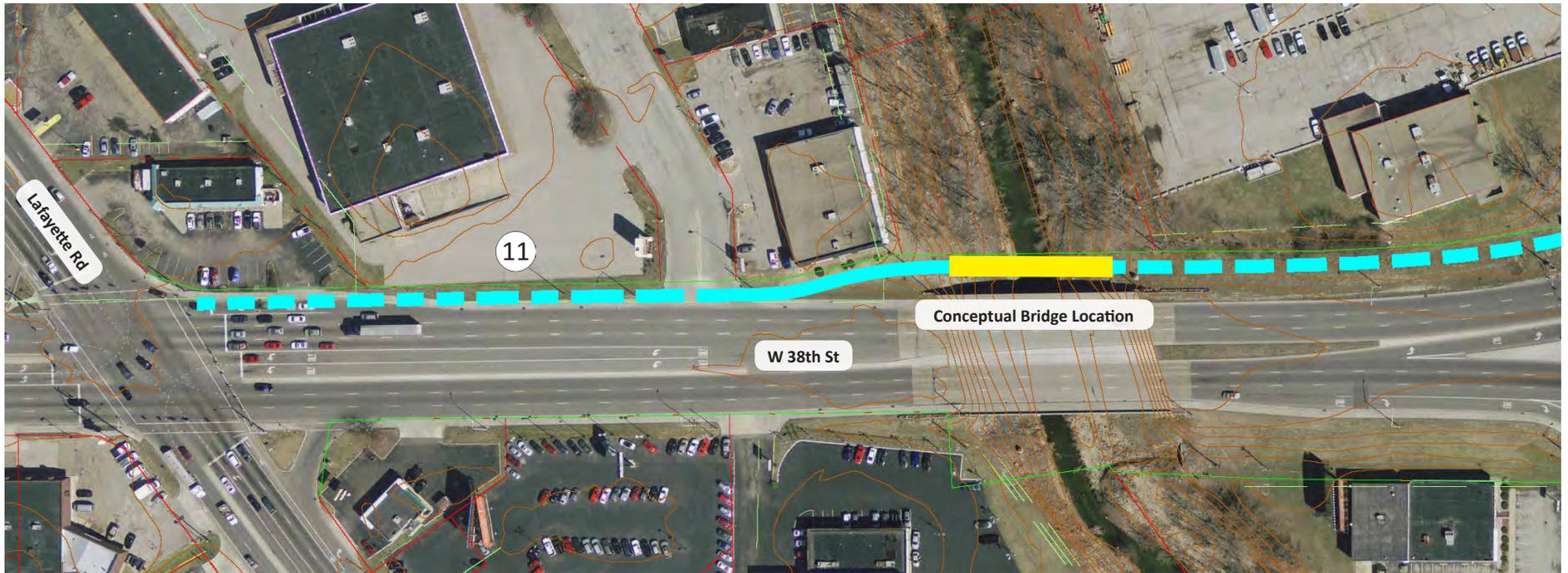
- Modifying slope wall under bridge to accommodate path (10)
- Reconfiguring the lane configuration
- Installing new crosswalks
- Providing signal equipment and timing enhancements

# Preferred Route



The sketch above shows the proposed intersection modifications at Commercial Drive. These include removing the separated westbound left turn lanes and creating a new left turn lane adjacent to the through lanes. This provides a larger path landing area between the westbound and eastbound lanes. Other improvements include eliminating the free flow right turns to and from Commercial Drive, the addition of highly visible crosswalks, and modification to the existing signal equipment and timing to better accommodate bicycle and pedestrians.

# Preferred Route



## Lafayette Road

- New prefabricated bicycle and pedestrian bridge over Little Eagle Creek.
- Future connection to the proposed Little Eagle Creek path
- Potential trailhead with parking at the Lafayette Square Mall. Connection to the current shopping destination and future redevelopment (11)

# Path Construction

## Proposed Path Construction

The proposed path will be a shared-use path and will be separated from motor vehicle traffic. The path is intended for multiple types of non-motorized users (walkers, bicyclists, in-line skaters, wheel chairs).

The path will be 10-14 foot wide asphalt with 2 foot wide grass shoulders on either side.

Max. Profile grade: 5%

Max. Cross Slope: 2%

Design Speed: 20 MPH

Min. Horizontal Curve: 95 feet

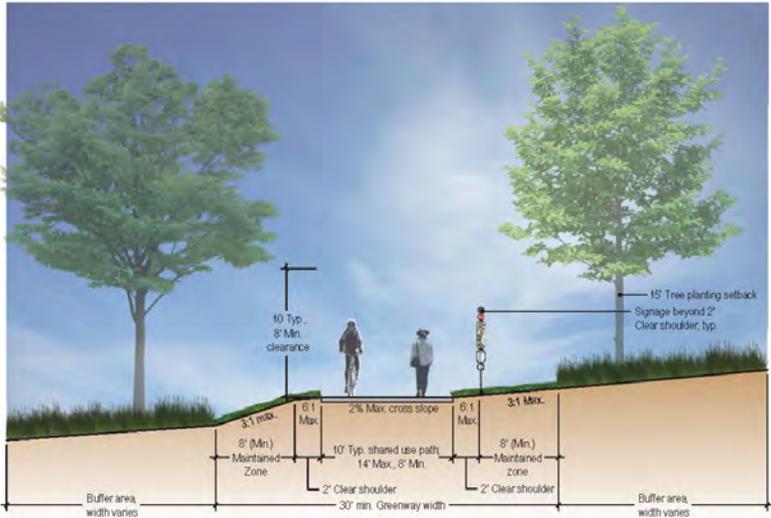
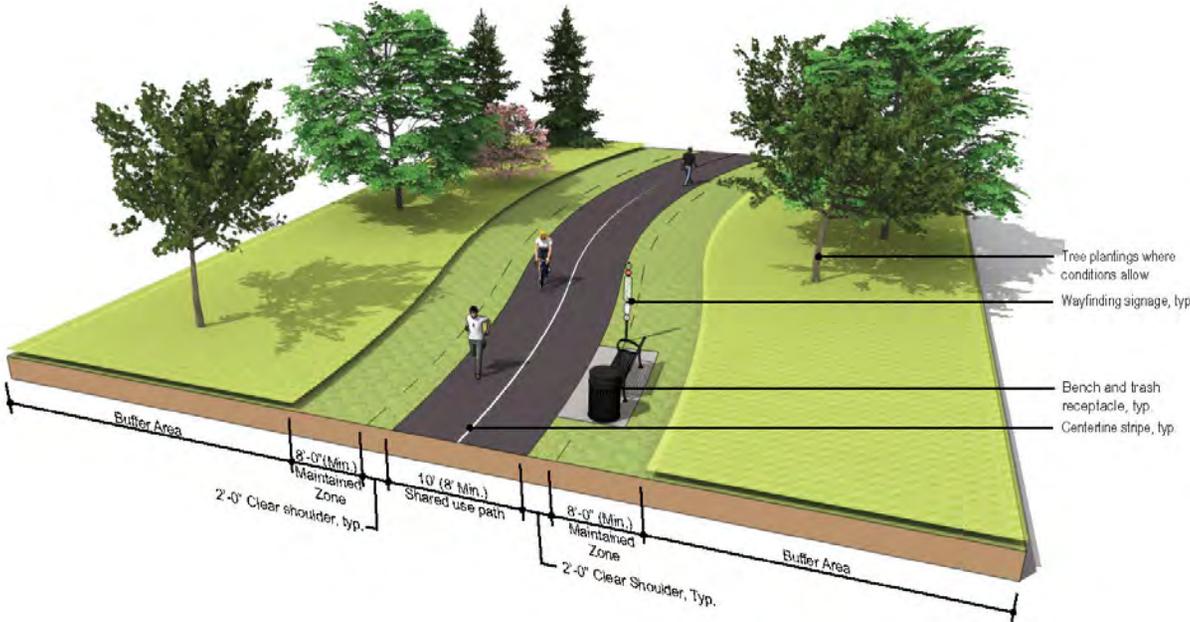
Min. Vertical Clearance: 8 feet

Trail Guardrail: 48 inch standard

54 inch for bridges and areas warranting special protection

Standards: Current INDOT and AAHSTO Standards

Along areas of 38th Street with a curb, the separation between the path and the curb should be a minimum of 10 feet. In areas without a curb, 24 to 35 feet of separation should be provided.



These images are from the *Indy Greenways Full Circle Master Plan, 2014-2024*.

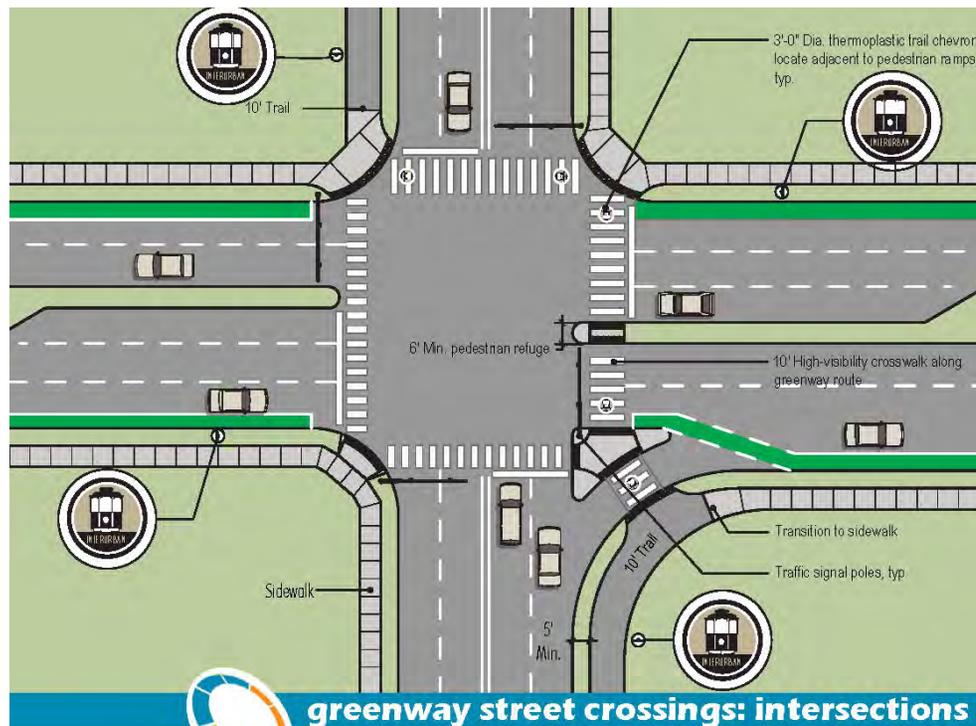
They illustrate the proposed typical path construction.

# Amenities

## Crosswalks

Ladder style crosswalks are recommended in white, orange (matching the International Marketplace logo color), or a combination of white and orange striping.

Consideration can be given to using more decorative crosswalks in high visibility areas like intersections in the International Marketplace district.



This image to the left is from the *Indy Greenways Full Circle Master Plan, 2014-2024*.

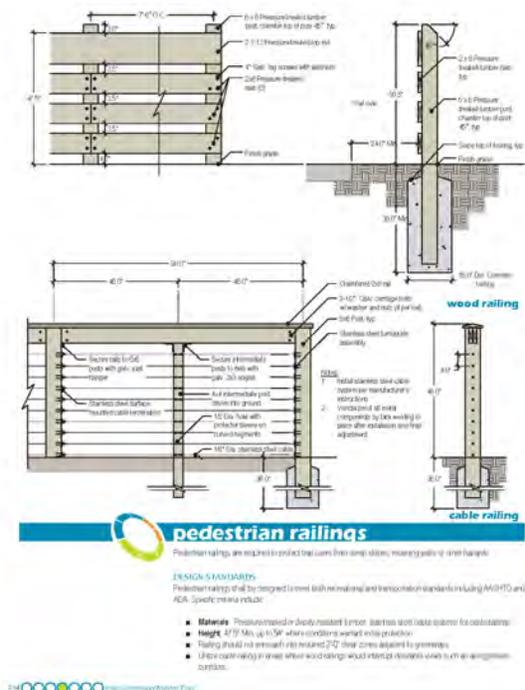
It illustrates typical intersection elements.

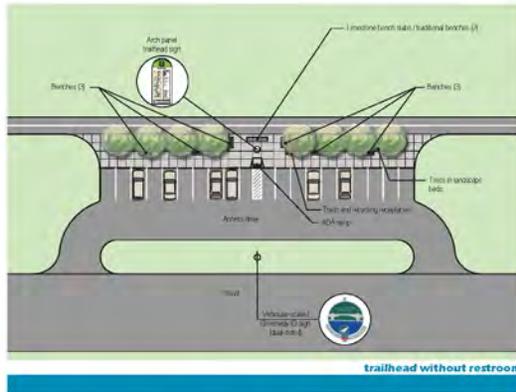
## Full Circle Master Plan

Trail amenities such as site furnishings, trailhead design, and trail signs should adhere to the *Indy Greenways Full Circle Master Plan, 2014-2024*. The full document can be found online at:

<https://indygreenwaysmasterplan.wordpress.com/full-circle-master-plan-2/>

Some example standards are illustrated in the following images.

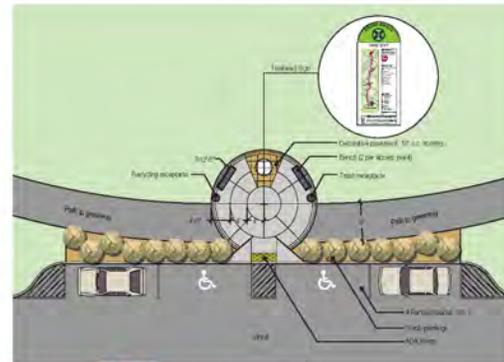




- POLICY STATEMENTS:**
- All trailheads should be on city-owned property, or a memorandum of understanding should be in place giving the city authority over the use and operation of the trailhead. All trailheads must be open to the public. Where possible, trailhead facilities should be located within park properties.
  - Hours of operation for all trailheads should be consistent with the Greenway in which the trailhead serves.
  - Trailheads should be designed for year-round use.
  - Trailheads shall be maintained and patrolled as part of the greenway.

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COLOR	VINYL	PAINT	ID
Black	V1 AVERY™ 900 Supercast Black SC 900-190-O SC9090D	P1 MATHEWS PAINT™ 103 - Black LRV 5.2	
White	V2 AVERY™ 900 Supercast White SC 900-101-O SC9002D	P2 MATHEWS PAINT™ 951 - White LRV 79.9	
Trail Green	V3 AVERY™ 900 Supercast Apple Green SC 900-760-O SC9660D	P3 MATHEWS PAINT™ MP26749 Spring Green LRV 28.3	
Trail Red	V4 AVERY™ 900 Supercast Luminous Red SC 900-481-O SC9318O	P4 MATHEWS PAINT™ MP24069 Fire Red LRV 17.2	
Trail Yellow	V5 AVERY™ 900 Supercast Dark Yellow SC 900-250-O SC9150O	P5 MATHEWS PAINT™ MP55149 Schoolbus Yellow LRV 39.3	
Trail Red (Reflective)	V6 3M™ Scotchlite Reflective Ruby Red 680-82, 680CR-82, 5100-82, 5100R-82		
Base Aluminum	AO		



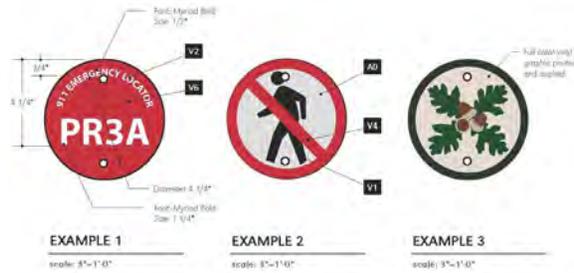
## access points

Access points are smaller, intermediate trailhead facilities provided to provide public access in a greenway at more frequent intervals. Access points can serve as more localized connectors and should be designed consistent with the character of the greenway. Access points are smaller in scale.

### DESIGN STANDARDS:

- Design standards for access points include the following:
- Locate access points at locations where there is a need for local vehicular access to the trail. Access points should be constructed where there are long stretches of greenway with no public access point. At a minimum, access points should be located every two miles throughout the system.
  - Access points should include parking for up to four (4) vehicles. If a larger demand exists, link points should consider construction of a trailhead.
  - Access points should include benches, trash and recycling receptacles, and trailhead signage. Restrooms should NOT be provided at access points.
  - Access points should be located outside of the path of the shoulder, path and connected via an R-11 wide minimum asphalt path. All access points and connections shall be ADA accessible.
  - Regulatory signage for entering the greenway should be consistent with MUTCD standards.

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EXAMPLE 1

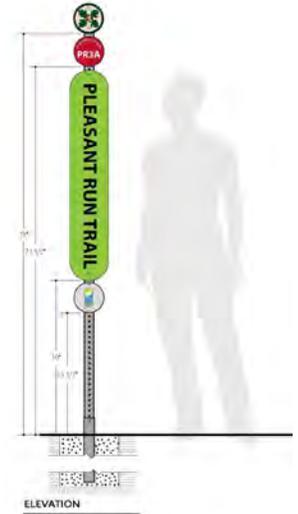
scale: 8"=1'-0"

EXAMPLE 2

scale: 8"=1'-0"

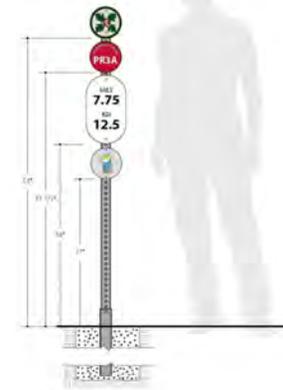
EXAMPLE 3

scale: 8"=1'-0"



ELEVATION

scale: 1"=1'-0"



ELEVATION

scale: 1"=1'-0"

# Implementation

The IM Crossing Multimodal Study is just one component of a catalog of plans, policies, and ordinances that guide the community's future growth, development, and investment. Implementation of the plan is strengthened by collaboration between many public and private entities that are affected by or have a responsibility in fulfilling any recommendations outlined in this plan. As such, commitment of all types of resources is essential.

## Phasing

No specific recommendations for project phasing were developed in the study process. Ultimately the ability to construct the IMX depends on availability of funding and land acquisition. A closer look at areas where land acquisition may be required is included in the Appendix.

Phasing was discussed in the third and final TAC meeting and it was the consensus of the committee that the path segment from Michigan Road west to White River Parkway East Drive is the most viable first phase.

Although this segment would not directly benefit the International Marketplace, it is highly visible and would provide a multimodal connection from the existing sidewalk system east of Michigan Road to Newfields, the Central Canal Towpath, and the Art and Nature Park. The segment's visibility and connectivity to

other cultural and recreation amenities can:

- Provide opportunities for public/private funding partnerships
- Provide a recognizable project identity to a broad citizen base
- Help generate excitement for future phases

## Funding Opportunities

Funding for the complete development of the IMX will require creative use of resources, partnerships, leveraging opportunities, and judicious timing. Potential funding sources are easy to identify, but obtaining money from them can be difficult and funds are limited and competitive. For these reasons, it is essential that the implementation of bicycle and pedestrian projects be accomplished in a way to maximize efficiency and return on investment.

Funding for bicycle and pedestrian facilities and programs come from a variety of sources, including transportation and non-transportation federal funds as well as local resources such as tax revenue and voter-approved bonds. This section of the plan discusses various funding sources and identifies actions to strengthen funding for implementation of this plan's recommendations and realization of the plan vision.

- **Bond**  
Backed by the credit and "taxing power" of the issuing jurisdiction, a bond is government debt issued to raise money to finance capital improvements. A bond issue requires a vote by citizens in a general election and typically property taxes are raised to pay for the bond's retirement.
- **Impact Fee**  
An impact fee is a charge on new development to pay for the cost of infrastructure and related services that are necessitated by and benefit the new development. The fee is based on the type of development assessed for the increase in the burden on infrastructure. Fees contribute to a non-reverting fund and can be used for infrastructure improvements and amenities including park and recreation and multimodal projects. Currently the City of Indianapolis does not impose impact fees on new development.
- **Federal Fixing America's Surface Transportation (FAST) Act Funds**  
A portion of these funds, formerly known as the Transportation Alternatives Program (TAP), are set aside for projects including on- and off-road pedestrian and bicycle facilities, infrastructure projects for

# Implementation

improving non-driver access to public transportation and enhanced mobility, community improvement activities such as historic preservation and vegetation management, and environmental mitigation related to stormwater and habitat connectivity; recreational trail projects; safe routes to school projects; and projects for planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former divided highways. Unless a state opts out, it must use a specified portion of its FAST funding for recreation trail projects. Projects are managed by INDOT and must follow INDOT guidelines.

These projects are federally subsidized, community-based projects that expand travel choices and enhance the transportation experience by improving the cultural, historic, aesthetic, and environmental aspects of transportation infrastructure. In Indianapolis, these funds are allocated to the Indianapolis Metropolitan Planning Organization. A competitive process for these funds is used at both the regional MPO and at the State level and the program requires local communities to contribute a minimum 20 percent match (80 percent federal funds, 20 percent local).

An assistance program of the

Department of Transportation's Federal Highway Administration (FHWA), the Recreational Trails Program (RTP) provides funds to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Unlike other FAST Act funds that are managed by the Indiana Department of Transportation, RTP funds are managed by the Indiana Department of Natural Resources. RTP awards are limited to \$200,000 maximum.

These Federal funds may be used for projects or activities that are related to surface transportation and described in the definition of "Transportation Alternatives." [23 USC 101(a)(29)] which includes:

- Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation.
- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.
- Conversion and use of abandoned railroad corridors for trails for

pedestrians, bicyclists, or other non-motorized transportation users.

- Construction of turnouts, overlooks, and viewing areas.
- Community improvement activities, including—
  - Inventory, control, or removal of outdoor advertising;
  - Historic preservation and rehabilitation of historic transportation facilities;
  - Vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control; and
  - Archaeological activities relating to impacts from implementation of a transportation project eligible under 23 USC.
- Any environmental mitigation activity, including pollution prevention and pollution abatement activities and mitigation to—
  - Address storm water management, control, and water pollution prevention or

# Implementation

abatement related to highway construction or due to highway runoff; or

- Reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats.

In 2018, Indiana will receive a total of \$286,164,729 from the Surface Transportation Block Grant Program.

- Congestion Mitigation and Air Quality (CMAQ) Improvement Program

As part of the FAST Act, the CMAQ program provides a flexible funding source to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas). This can include trail and greenway projects. Indiana's 2018 apportionment for this program is \$48,652,428.

- Public-Private Partnerships

As mentioned, cooperation between

the public and private sectors is critical to the successful implementation of this plan. This cooperation comes in the form of a partnership between government and the private sector for the purpose of more effectively providing services and infrastructure traditionally provided by the public sector. Public sector efforts can be leveraged with private sector funding sources including monies contributed by small businesses, corporations, and grant foundations, civic organizations, and citizens.

## Budget

There are many factors that influence the cost of multimodal facilities including specific existing conditions and land acquisition. The costs included in this plan represent averages and are based on data collected and synthesized in the Central Indiana Regional Bikeways Plan and other professional best practices information.

More detailed cost estimation should be completed for each identified project as it nears implementation.

The development of costs at the planning level requires a certain number of assumptions be made. Assumptions are outlined below to more accurately describe what was included in the study budget calculations.

- Land acquisition was assumed to be 6.00 acres per mile, representing a 50-foot corridor for construction.
- Clearing and grubbing costs include the width of the path and associated clear zones.
- Aggregate base is assumed to extend one foot beyond the edge of the multiuse path on each side.
- Adverse soil conditions such as contamination will require additional earthwork and will increase project cost. See the Red Flag Survey in the appendix for a preliminary analysis of potential contamination.
- Where possible, INDOT unit price information was used for construction and per mile costs assume use of Federal funding.
- Signage was estimated at seven signs per mile of path.
- A contingency was added to account for common, unknown additional costs.
- All pavement markings are thermoplastic.
- Bridges include structural elements, decking, painting (if necessary), abutments, earthwork.

# Implementation

- Engineering costs are estimated based on federal funding being used for each segment and include engineering, survey, geotechnical engineering, and environmental documentation. Actual fees may vary based on final project parameters and scope.

In general terms and using unit pricing, one mile of 10-foot wide asphalt path was calculated in 2021 dollars to cost \$1,387,237. These costs are used for budgeting purposes only and actual costs may vary (higher or lower) based on actual condition, funding sources, level of design detail, etc.

## Budget Notes

- (1) Additional structural study, mill and resurface, restriping, barrier, upgraded railings
- (2) Cutting back slope wall, retaining wall, barrier
- (3) Varies by intersection and includes modifications at Newfields Entrance, White River Parkway, Cold Spring Road, Guion Road, and Commercial Drive. General scope includes lane reconfiguration, striping, and signal modifications.

## BASE PATH

10-foot wide asphalt path, reappropriations existing bridges over the Canal and White River.

16,431 LFT	10-foot Asphalt Path	\$4,300,000.00
1	Crooked Creek Bridge	\$490,000.00
1	Guion Road/Rail Bridge	\$890,000.00
1	Little Eagle Creek Bridge	\$475,000.00
1 Lump Sum	Canal and White River Bridge Improvements (1)	\$300,000.00
1 Lump Sum	Road Improvements	\$300,000.00
2	Bridge Underpass Modifications (Kessler, Guion) (2)	\$325,000.00
1 Lump Sum	Intersection Improvements (3)	\$750,000.00
7800 SFT	Retaining Wall	\$240,000.00
<b>TOTAL</b>		<b>\$8,070,000.00</b>

# Implementation

## PATH CONNECTIONS

10-foot wide asphalt paths providing trail connections from the IMX to other destinations.

657 LFT	Art and Nature Park	\$173,000.00
1,200 LFT	White River Trail	\$315,000.00
375 LFT	Towpath	\$102,000.00
1,400 LFT	Kessler Boulevard (South)	\$368,000.00
2,900 LFT	Guion Road	\$762,000.00