

TIME TO EXPLORE

Cleveland Metroparks

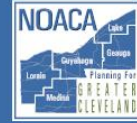
Emerald Necklace Trail Bicycle and Pedestrian Crossing Improvements Study

Board of Park Commissioners
April 18, 2019

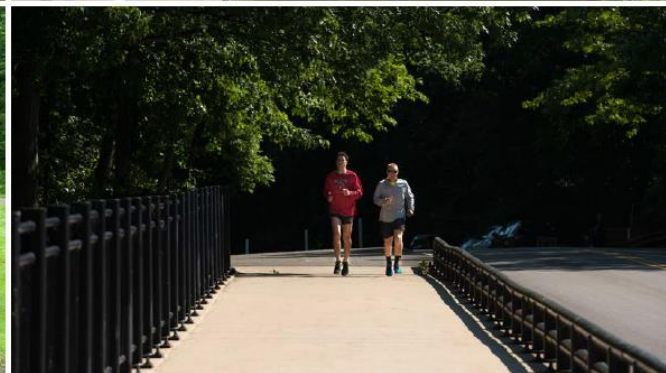


Study Background

Emerald Necklace Trail Bicycle and Pedestrian Crossing Improvements Study



Cleveland Metroparks, Cuyahoga County, Ohio
Prepared by the Northeast Ohio Areawide Coordinating Agency
March 2019



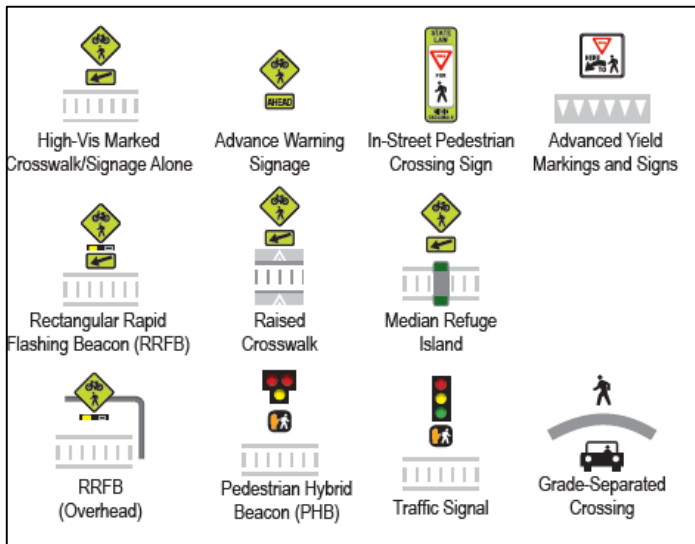
- 2016 NOACA-led Transportation for Livable Communities Initiative (TLCI) Planning Study
- Aligned with Cuyahoga Greenways TLCI
- Study format – 2 parts:
 - Typology plan
 - Detailed recommendations at specific crossings
- Project goals:
 - Identify ways to make Emerald Necklace trail crossings safer, user-friendly, and consistent
 - Provide detailed recommendations at key locations

Part 1: Trail Crossings Typology

Typology

Classification Basis:

- Vehicular traffic volume
- Vehicle speed
- Crossing distance



Legend

- = Speed limit 30 mph or lower
- = Speed limit 35 mph
- = Speed limit 40 mph or higher
- = Trail

LEVEL 1

Low vehicle volume
Low/Moderate vehicle speeds
Short/Moderate crossing distance

LEVEL 2

Low/High vehicle volume
Low/Moderate vehicle speeds
Short/Long crossing distance

LEVEL 3

Low/Moderate vehicle volume
Low/Moderate vehicle speeds
Moderate/Long crossing distance

LEVEL 4

Low/High vehicle volume
Low/Moderate vehicle speeds
Short/Long crossing distance

LEVEL 5

Moderate/High vehicle volume
Low/Moderate vehicle speeds
Moderate/Long crossing distance

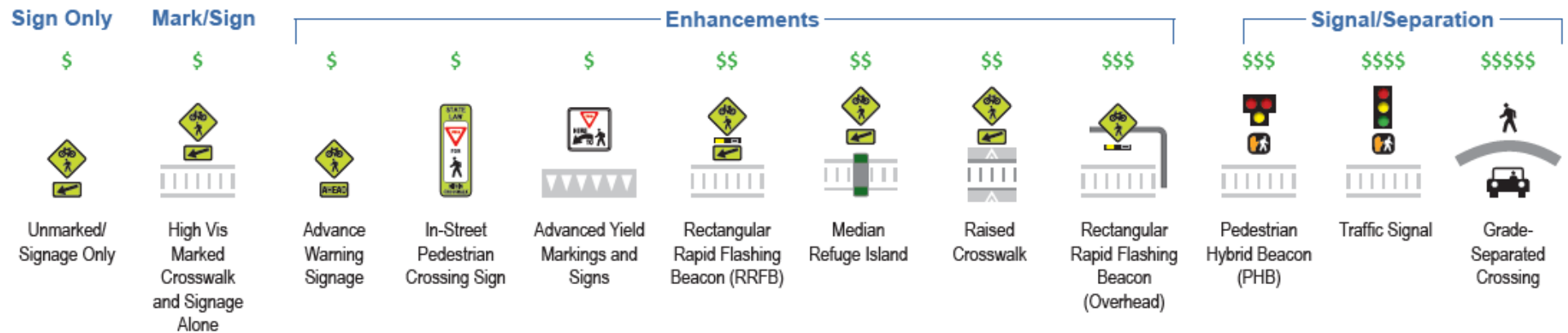
LEVEL 6

Low/High vehicle volume
High vehicle speeds
Short/Long crossing distance

Figure 1: Typology Levels

Appropriate & Effective Treatments

		Vehicular Traffic Volume											
		ADT											
		Less than 5,000			5,000 to 8,999			9,000 to 11,999			12,000 or more		
Crossing Distance	Speed	Speed			Speed			Speed			Speed		
		Slow (<=30)	Mod (35)	Fast (>=40)	Slow (<=30)	Mod (35)	Fast (>=40)	Slow (<=30)	Mod (35)	Fast (>=40)	Slow (<=30)	Mod (35)	Fast (>=40)
2-3 Lanes		1 A	1 B	6 A	2 A	2 B	6 A	2 A	2 B	6 A	2 A	4 A	6 C
4 Lanes		1 A	3 A	6 B	2 C	3 A	6 B	3 A	5 A	6 C	5 B	5 C	6 C
5+ Lanes		2 C	3 B	6 B	2 C	4 B	6 B	4 B	5 A	6 C	5 B	5 C	6 C



How to Use the Typology

STEP 1: Gather available data

Located in Brecksville Reservation

AADT: 11,879 vehicles (ODOT estimate, 2017)

Speed Limit: 35 mph

Crossing Distance: 5 lanes



Image 19: Brecksville Road and Valley Parkway



How to Use the Typology

STEP 1: Gather available data

Located in Brecksville Reservation

AADT: 11,070

What kind of uncontrolled road are you crossing?

LEVEL 1

Low vehicle volume
Low/Moderate vehicle speeds
Short/Moderate crossing distance



LEVEL 2

Low/High vehicle volume
Low/Moderate vehicle speeds
Short/Long crossing distance



LEVEL 3

Low/Moderate vehicle volume
Low/Moderate vehicle speeds
Moderate/Long crossing distance



LEVEL 4

Low/High vehicle volume
Low/Moderate vehicle speeds
Short/Long crossing distance



LEVEL 5

Moderate/High vehicle volume
Low/Moderate vehicle speeds
Moderate/Long crossing distance



LEVEL 6

Low/High vehicle volume
High vehicle speeds
Short/Long crossing distance



Legend

- = Speed mph
- = Speed mph
- = Speed mph

LEVEL 5

A



These 4 and 5+ lane crossings have moderate vehicle ADT volumes of 9,000 to 12,000 and moderate opposing traffic speed limits of 35 mph.

Appropriate Crossing Treatments:

- » A high visibility marked crosswalk and signage, a median refuge island (road diet on four-lane roads), and additional enhancements are typically appropriate, including:
 - » Dual advance warning signage, in-street pedestrian crossing sign, and advanced yield markings and signs
 - » Rectangular Rapid Flashing Beacon (RRFB) overhead or on median refuge island
- » A Pedestrian Hybrid Beacon (PHB) should be considered.
- » A traffic signal may also be considered if warranted.

LOW COST \$			
MODERATE COST \$\$			
HIGH COST \$\$\$-\$\$\$\$			

How to Use the Typology

STEP 1: Gather available data

Located in Brecksville Reservation

AADT: 11,879 vehicles (ODOT estimate, 2017)

Speed Limit: 35 mph

Crossing Distance: 5 lanes



Image 19: Brecksville Road and Valley Parkway

STEP 2: Identify crossing Level

Use the Typology table or crossing icons to categorize the crossing. With an ADT between 9,000 and 11,999, a speed of 35 mph, and a crossing distance of 5+ lanes, this trail crossing can be categorized as Level 5(A).



Crossing Distance	AADT											
	Less than 5,000			5,000 to 8,999			9,000 to 11,999			12,000 or more		
	Slow (<=30)	Speed Mod (35)	Fast (>=40)	Slow (<=30)	Speed Mod (35)	Fast (>=40)	Slow (<=30)	Speed Mod (35)	Fast (>=40)	Slow (<=30)	Speed Mod (35)	Fast (>=40)
2-3 Lanes	Green	Green	Brown	Green	Green	Brown	Green	Green	Brown	Green	Orange	Brown
4 Lanes	Green	Yellow	Brown	Green	Yellow	Brown	Yellow	Orange	Brown	Orange	Orange	Brown
5+ Lanes	Green	Yellow	Brown	Green	Orange	Brown	Orange	5(A)	Brown	Orange	Orange	Brown

STEP 3: Identify potential appropriate treatments

At Level 5(A), a marked crosswalk and signage alone are not appropriate and should be accompanied by a median refuge island and additional enhancements such as advance warning signage and a Rectangular Rapid Flashing Beacon (RRFB). Alternatively, devices that a trail user can activate to completely stop traffic—a traffic signal or Pedestrian Hybrid Beacon (PHB)—should also be considered. Further study of this location would reveal additional challenges to consider, such as left turn lanes on Brecksville Road and the intersection of Valley Parkway adjacent to the trail crossing.

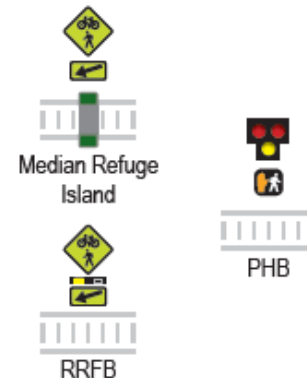
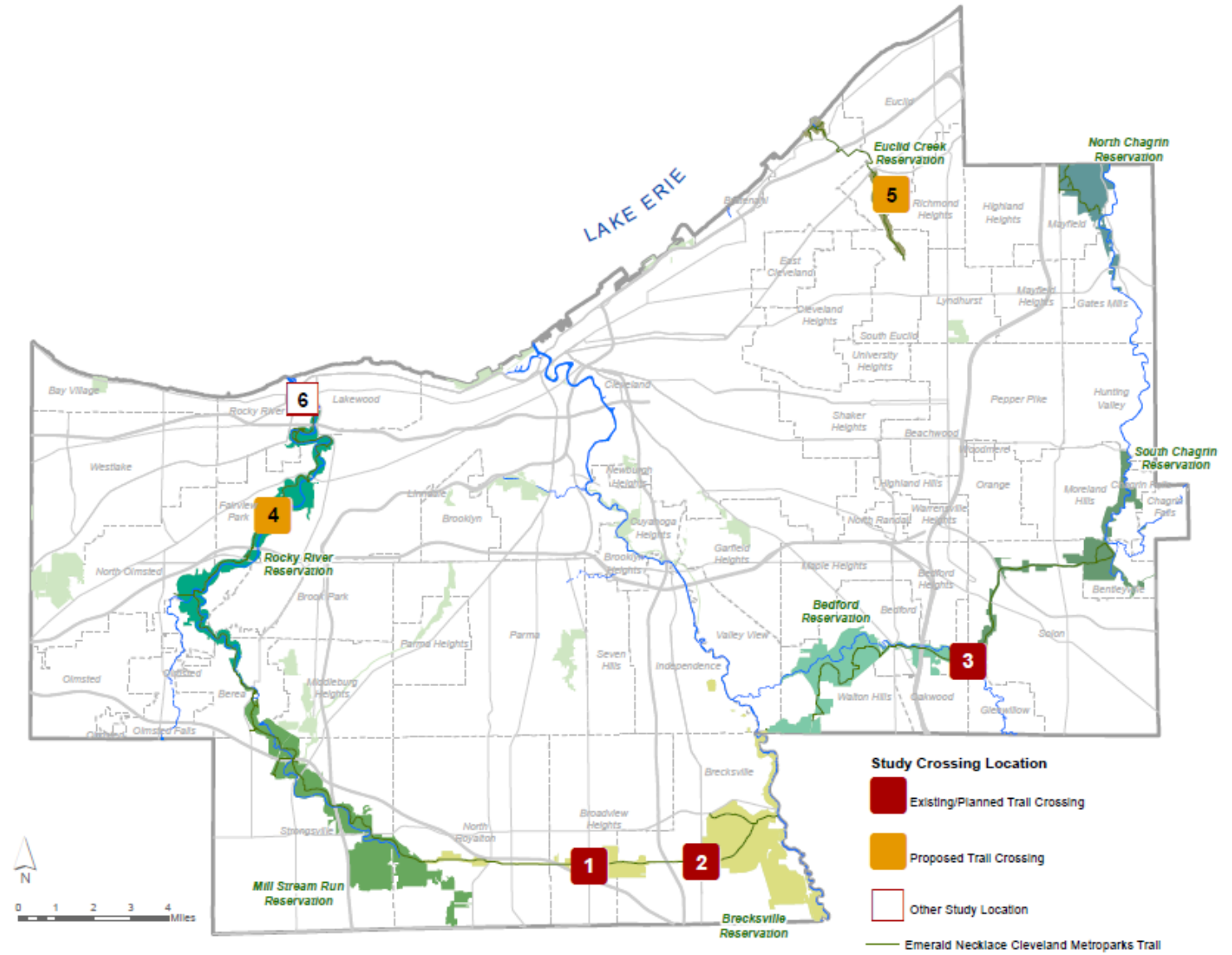


Image 20: Median Refuge Island (Google Maps)

Part 2: Detailed Crossing Recommendations

1. Broadview Road/Valley Parkway
- 2. Brecksville Road/Valley Parkway**
3. Richmond Road/Hawthorn Parkway
4. Mastick Road/Valley Parkway
5. Highland Road/Euclid Creek Parkway
6. *Detroit Road/Sloan Avenue/Valley Parkway**

* Intersection analysis by City of Lakewood



Brecksville Road/Valley Parkway Recommendations

- Median refuge island
- Trail extensions
- High visibility crosswalks
- Pedestrian-activated RRFBs
- Advance warning signage
- Equestrian crossing



- All purpose trail
- - - Bridge trail
- Barrier (landscaping or fencing)

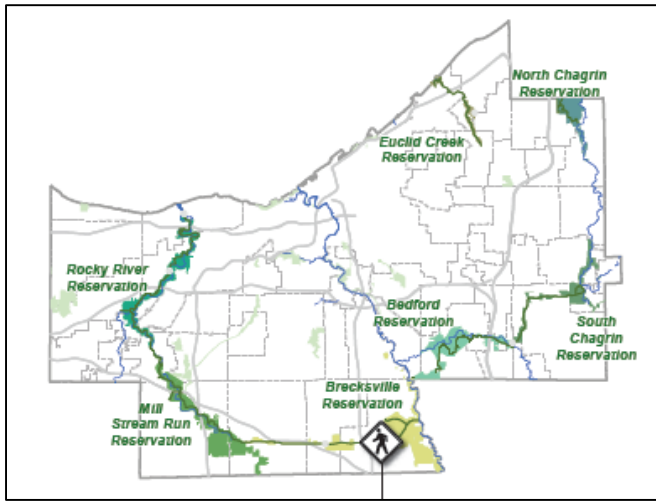
0 40 80 120 160 Feet



TLCI 2019 Awards

- NOACA Board of Directors approved the SFY 2019 TLCI awards on March 8, 2019
- 32 applications received:
 - 17 planning study requests totaling about \$1.2 million
 - 15 implementation project requests totaling about \$4.1 million
- \$2.354 million awarded
- Cleveland Metroparks sponsored 1 application and partnered on 2 others – all 3 were funded

TLCI Implementation: Brecksville Road and Valley Parkway Intersection



Sponsor: Cleveland Metroparks




\$105,000 NOACA

\$15,000 Cleveland Metroparks

\$15,000 City of Brecksville

\$135,000 Total Est. Project Cost

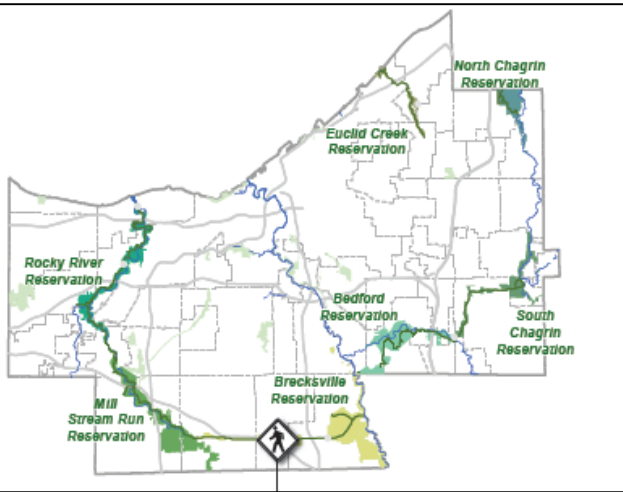


-  All purpose trail
-  Bridle trail
-  Barrier (landscaping or fencing)

0 40 80 120 160 Feet



TLCI Implementation: Broadview Road and Valley Parkway Intersection



Sponsor: City of Broadview Heights

\$200,000 NOACA

\$15,000 Cleveland Metroparks

\$35,000 City of Broadview Hts.

\$250,000 Total Est. Project Cost



- Existing/under construction all purpose trail
- Bridle trail
- Trail crossing under consideration

0 40 80 120 160 Feet

N



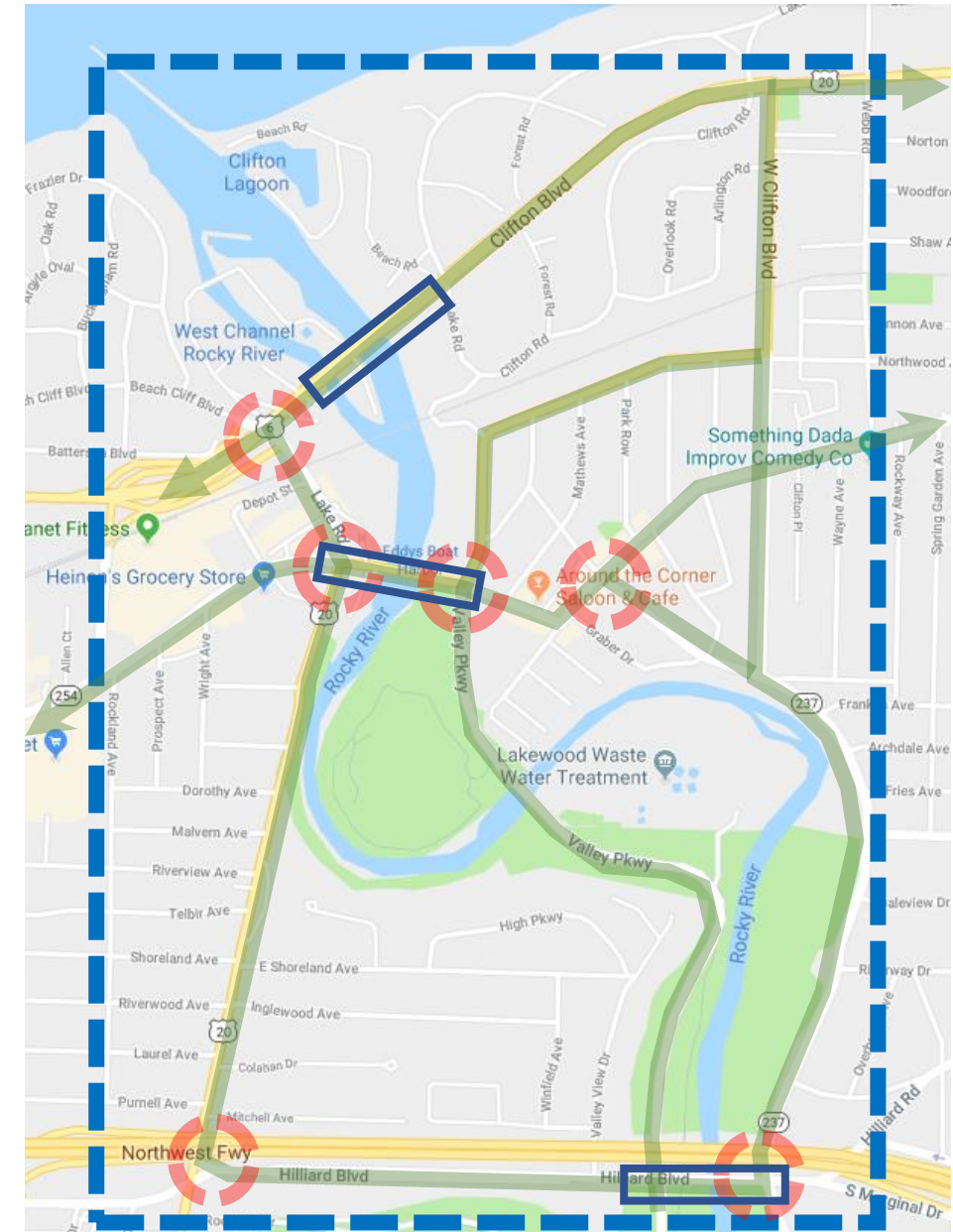
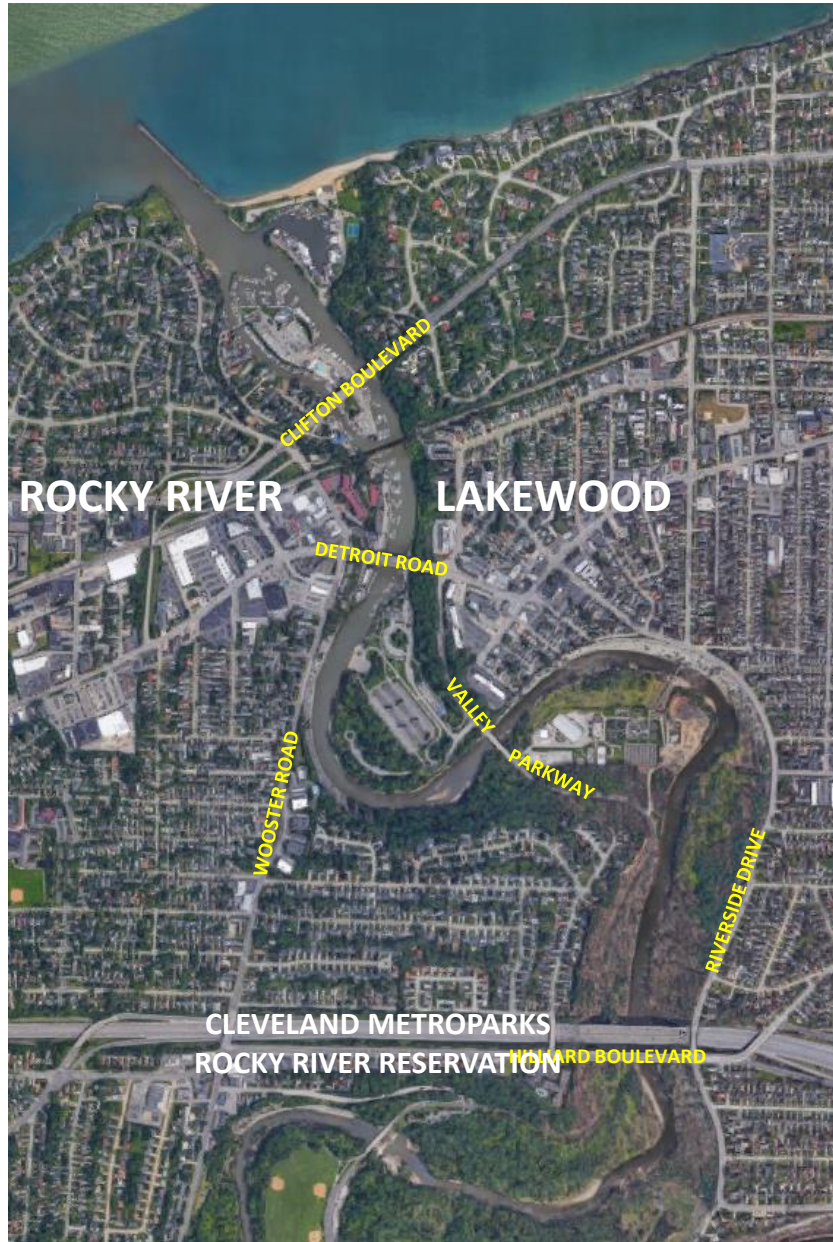
TLCI Planning - Community Confluence

- Sponsor: Cuyahoga County Planning Commission
- \$75,000 NOACA (100% Funding)



County Planning

FOR OUR COMMUNITY
FOR OUR REGION
FOR OUR FUTURE



Detailed Recommendations

Broadview Road/Valley Parkway



- Existing/under construction all purpose trail
- Bridle trail



Richmond Road/Hawthorn Parkway



- Existing all purpose trail
- Proposed all purpose trail



Detailed Recommendations

Mastick Road/Valley Parkway

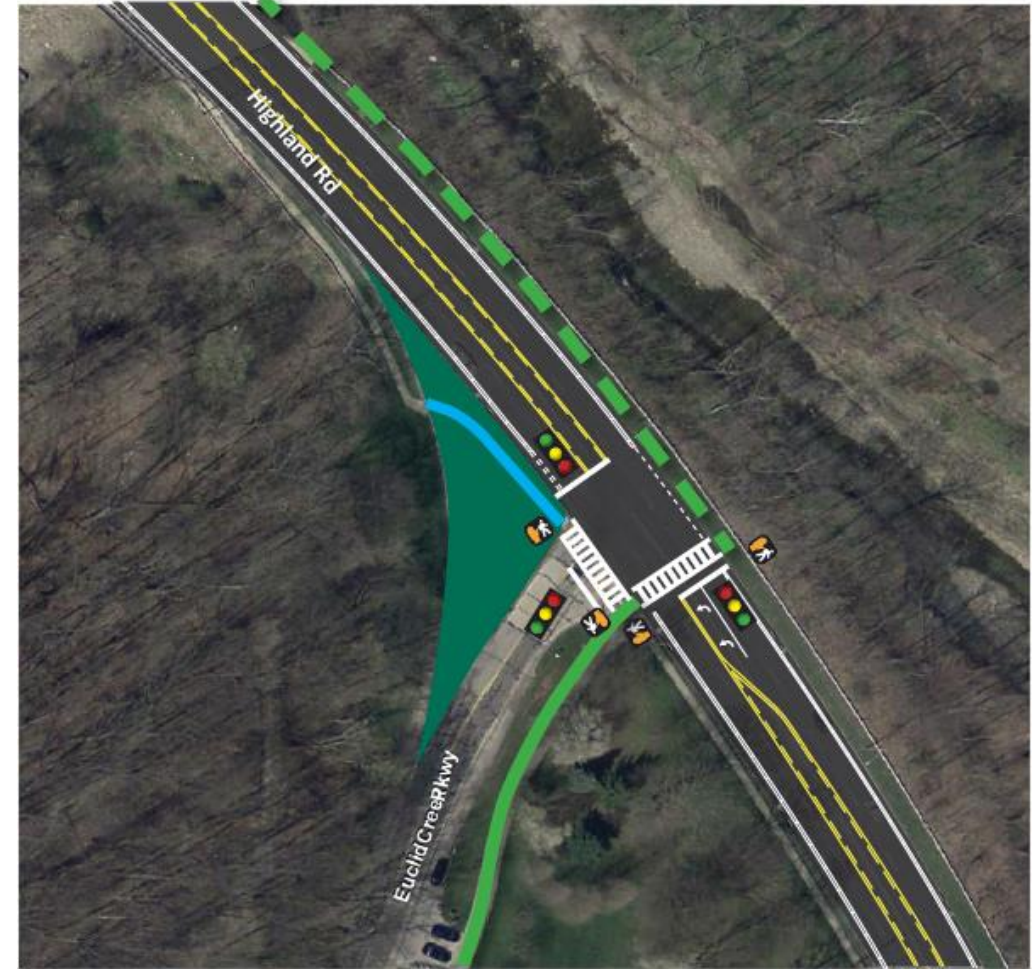


- Existing all purpose trail
- Proposed all purpose trail
- Bridle trail

0 40 80 120 160 Feet



Highland Road/Euclid Creek Parkway



- Existing all purpose trail
- Proposed all purpose trail
- New sidewalk

0 40 80 120 160 Feet

