copley
township

capital planning services

FEB. 2021

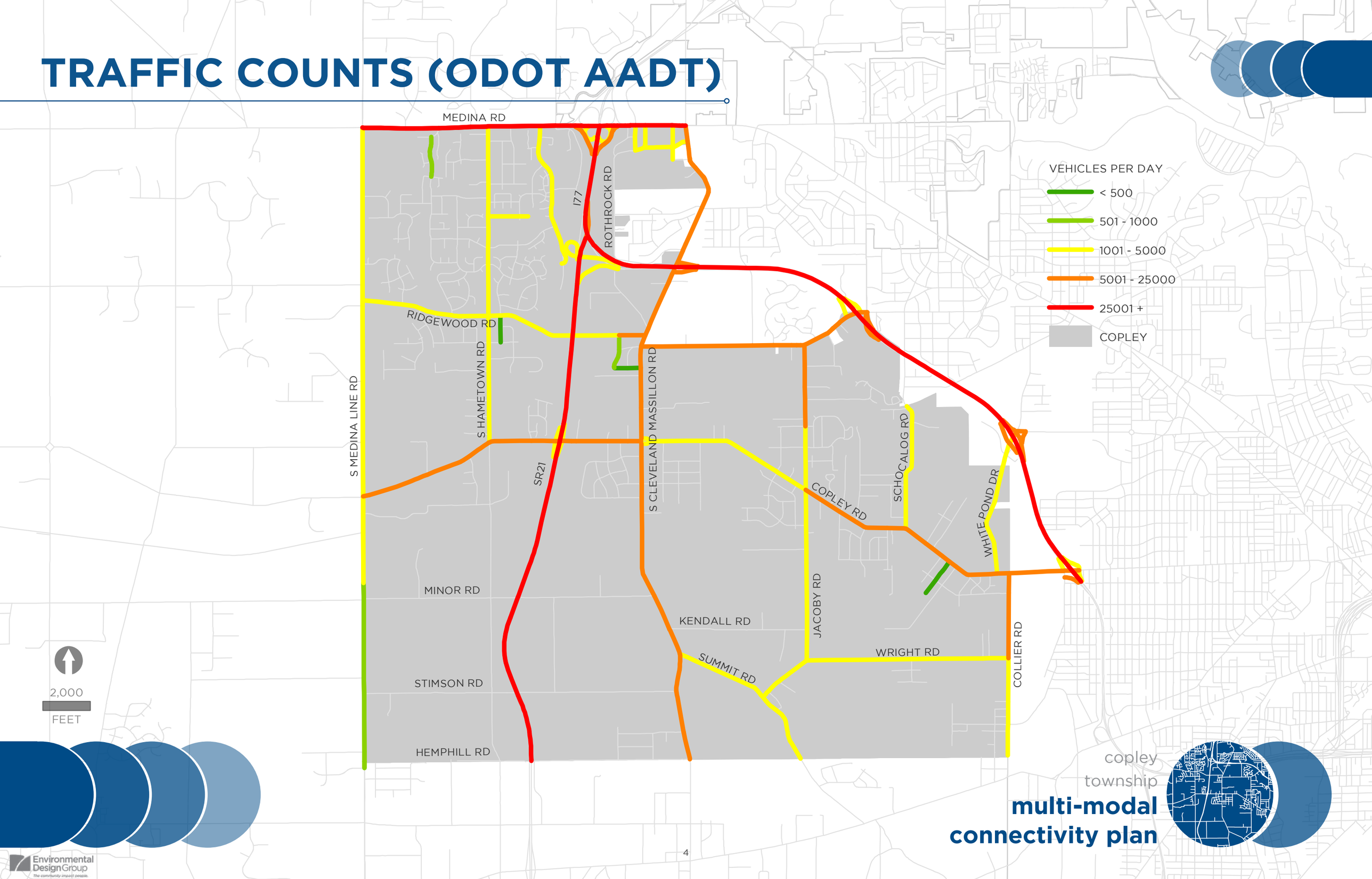
Environmental Design Group
The community impact people.

copley
township

basemaps & background

Environmental Design Group
the community impact people.

TRAFFIC COUNTS (ODOT AADT)



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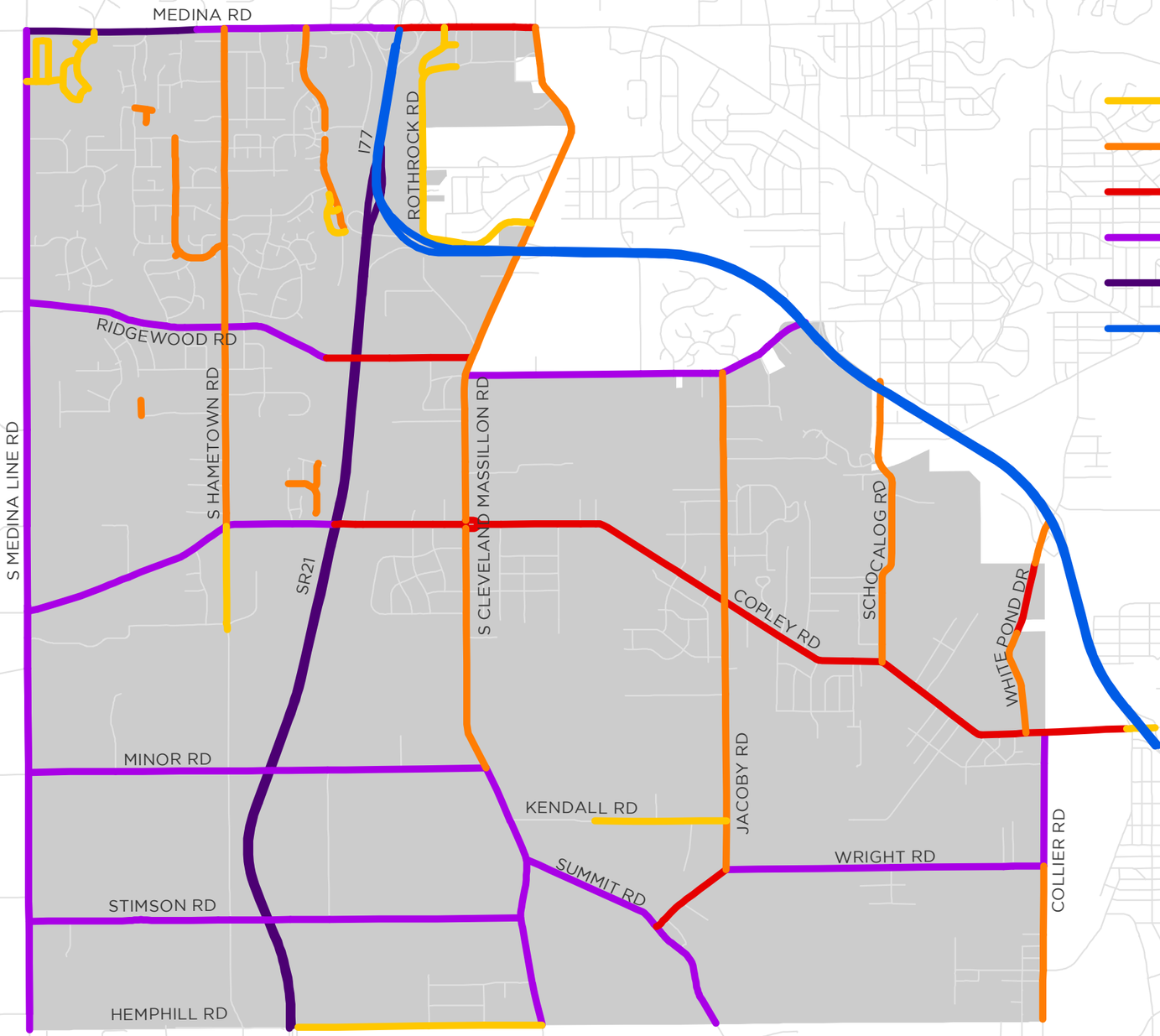
multi-modal connectivity plan

MAJOR CORRIDOR SPEED LIMITS



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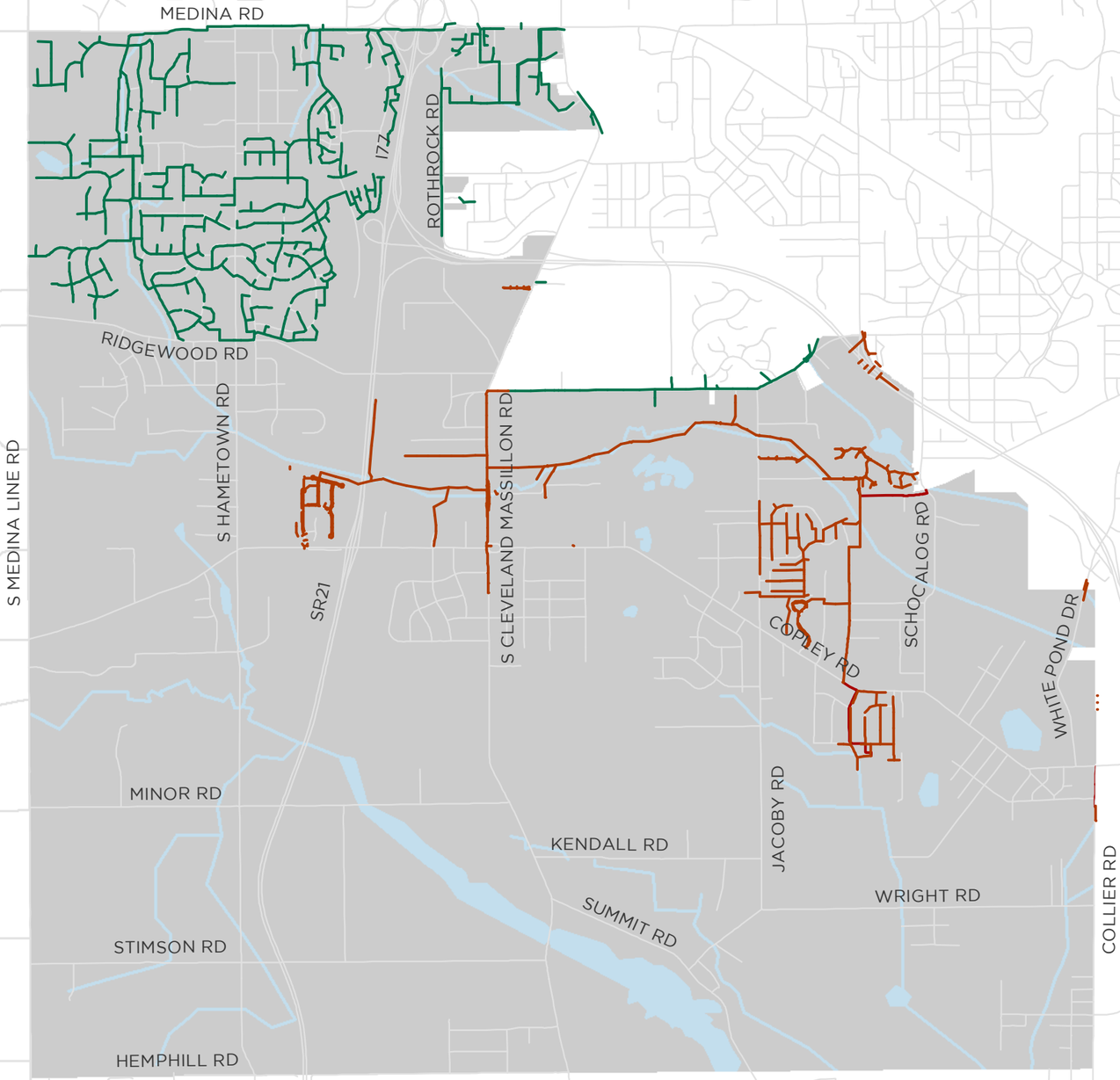
SEWER LINES



AKRON SEWERS

SUMMIT COUNTY SEWERS

STREAMS/LAKES/RIVERS

COPLEY

2,000
FEET

LINES OUTSIDE OF TWP. NOT SHOWN

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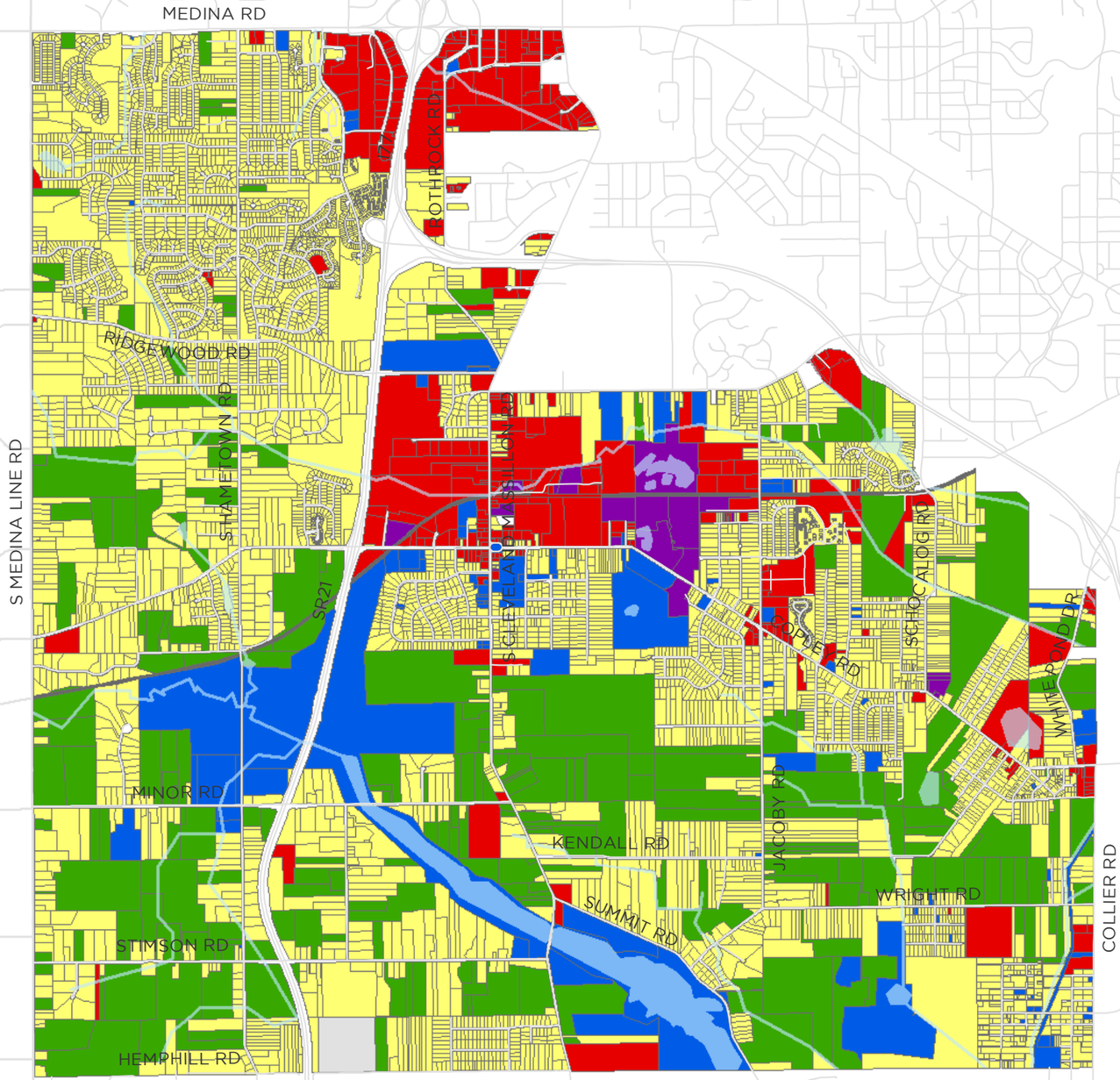
LAND USE



AGRICULTURAL
COMMERCIAL
PUBLIC/INSTITUTIONAL
INDUSTRIAL
MINERAL RIGHTS
RESIDENTIAL
RAILROAD

2,000
FEET

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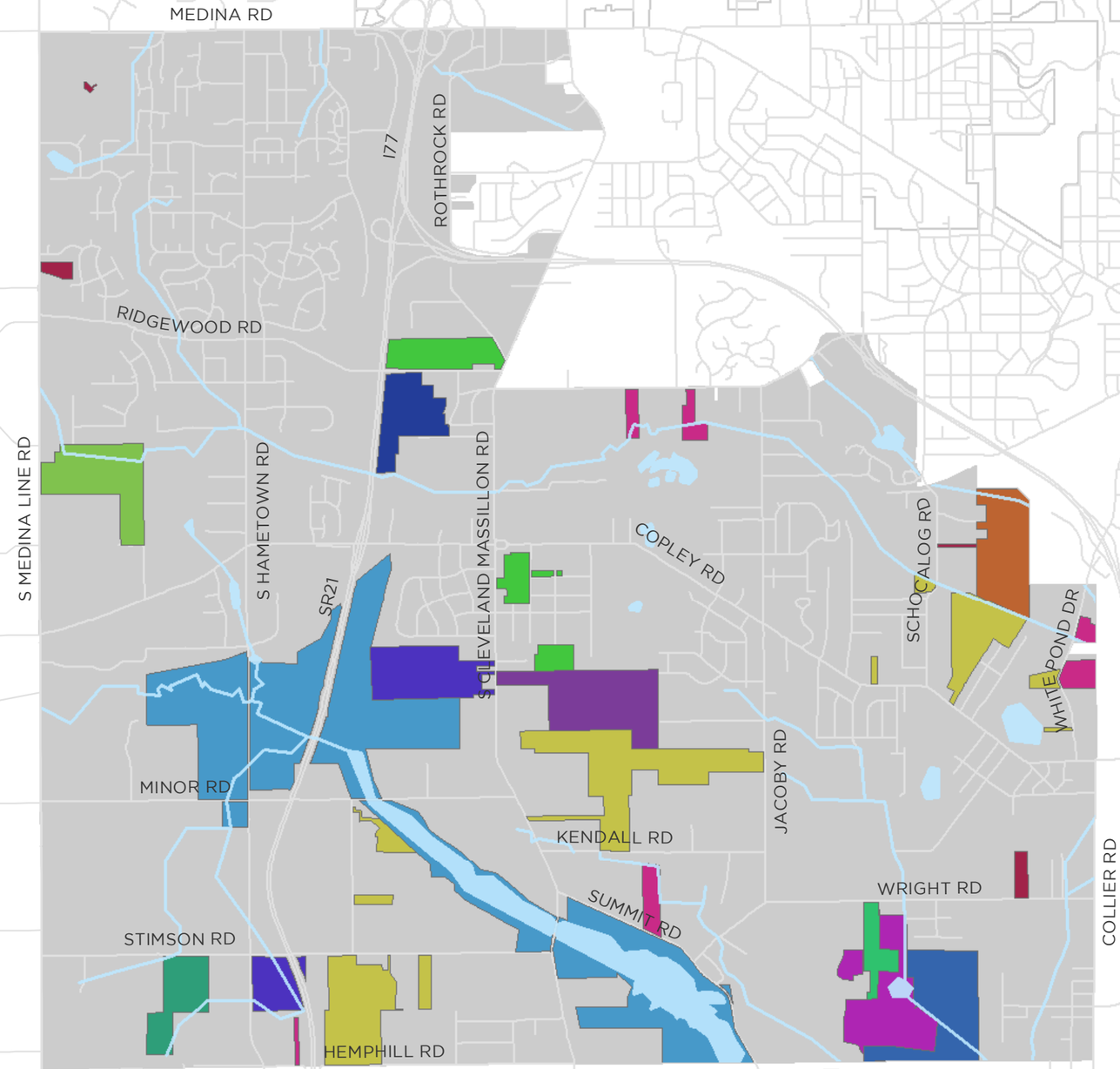
MAJOR LAND OWNERS



- BOARD OF EDUCATION
- UNIVERSITY OF AKRON
- BOUGHTON FARM LLC
- CITY OF BARBERTON
- CONCORDIA OF OHIO
- D&D ENERGY COMPANY
- G&O RESOURCES LTD
- HEMPHILL, CHARLES E
- KUCHAR LLC
- LONESOME PINE FARM FAMILY LTD
- M&R INVESTMENTS OHIO LLC
- ROTILI, LANNIE O
- SUMMIT PETROLEUM INC
- WILLIAMS, BESSIE

2,000 FEET

CUMULATIVE OWNERSHIP >75 ACRES

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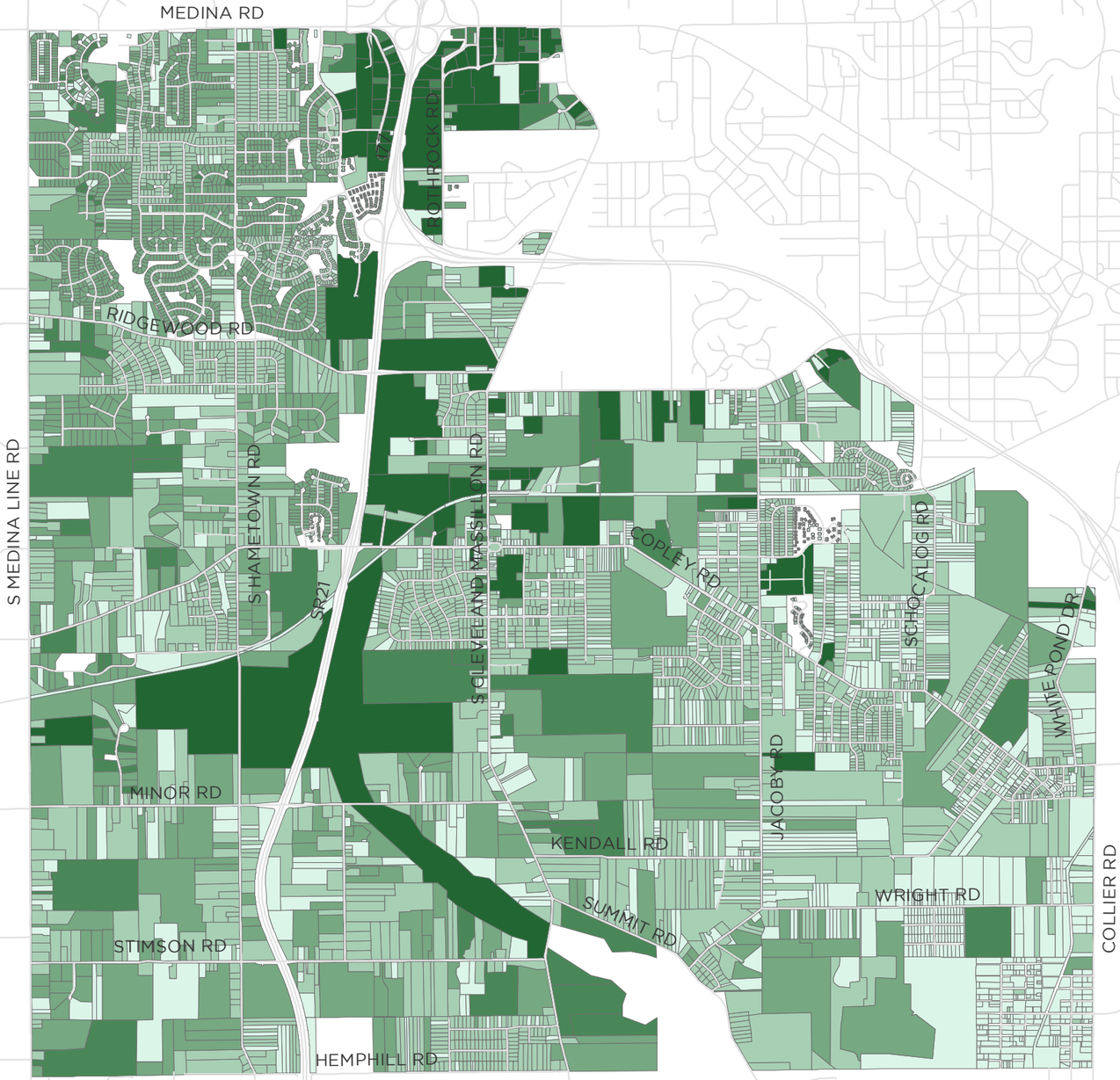
PROPERTY VALUES



< $100,000.00

$100,000.01 - $250,000.00

$250,000.01 - $500,000.00

$500,000.01 - $1,000,000.00

$1,000,000.01 +

2,000

FEET

SUMMIT COUNTY AUDITOR (2020)

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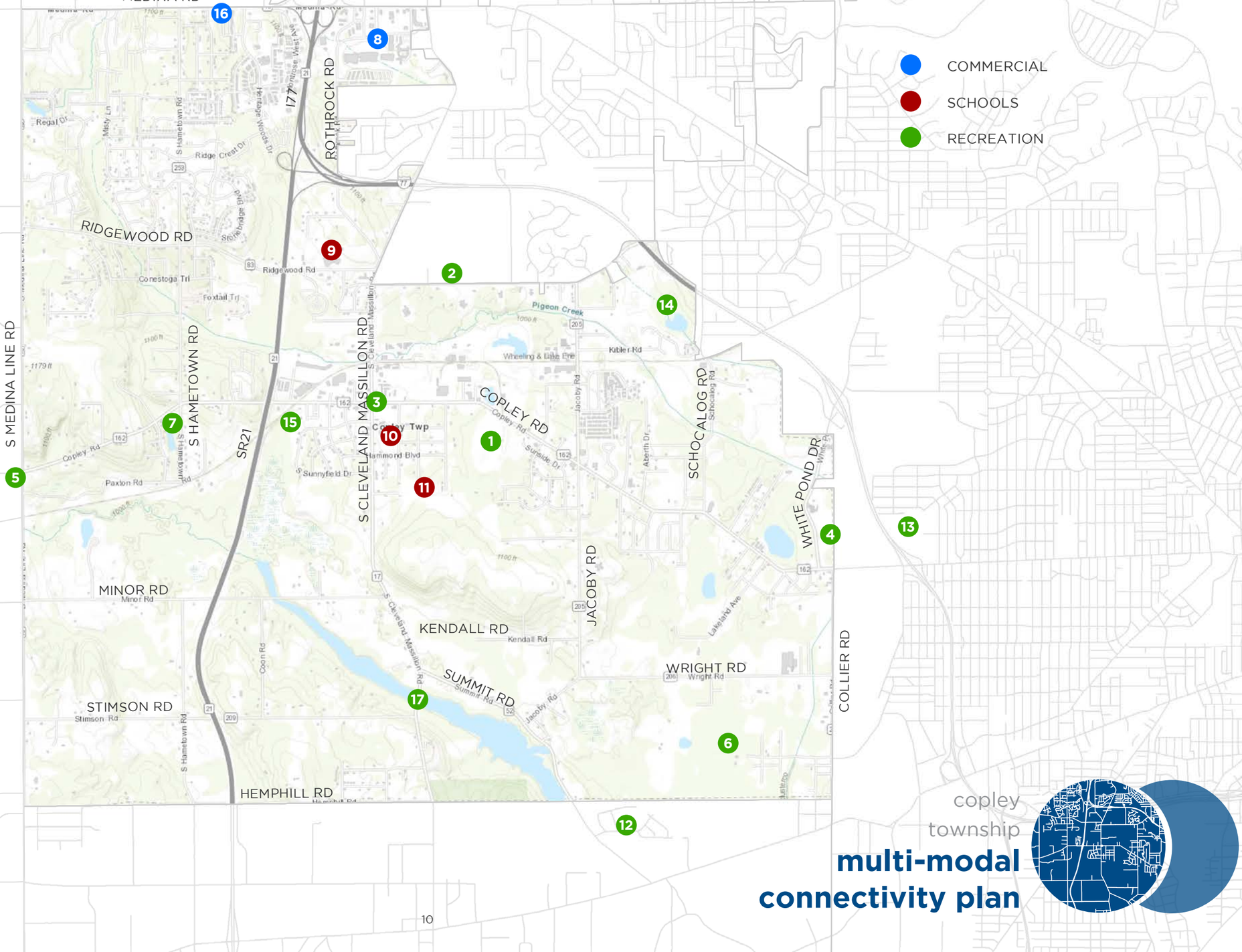
copley township
multi-modal connectivity plan

DESTINATIONS

DESTINATIONS

1. Copley Township Park
2. Fairlawn Park
3. Copley Circle
4. Copley Soccer Complex
5. Green Leaf Park
6. Copley Little Farms (Planned)
7. Arrowhead Lake Park
8. Montrose Commercial Area
9. Copley High School
10. Copley Middle School
11. Arrowhead Primary School
12. Fraisure Park
13. Erie Island Park
14. Highlander Property
15. Copley Depot



2,000
FEET

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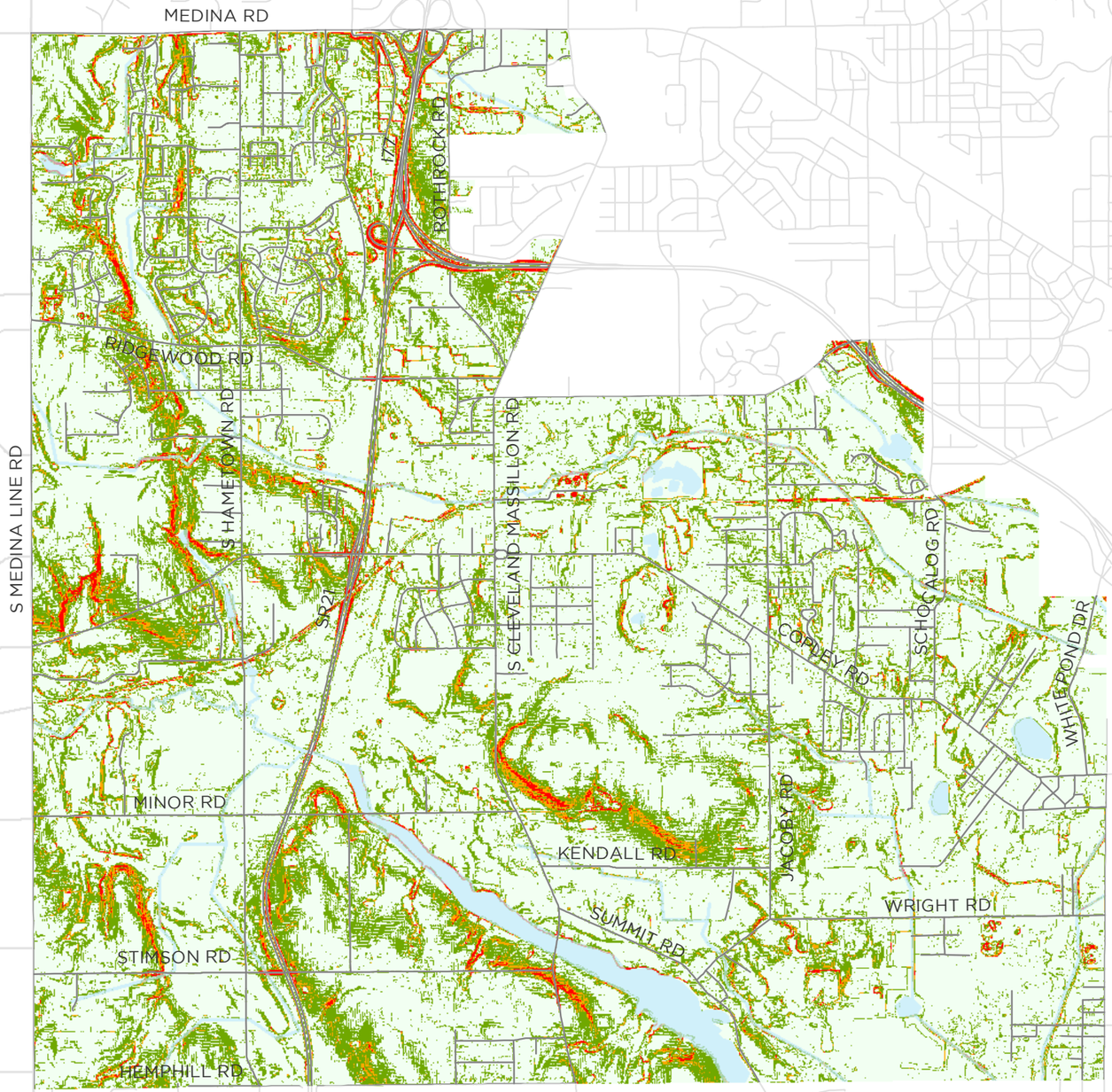
multi-modal connectivity plan

SLOPE ANALYSIS



PERCENT SLOPE (%)

- < 2%
- 2 - 4.99%
- 5 - 7.99%
- > 8%

2,000
FEET

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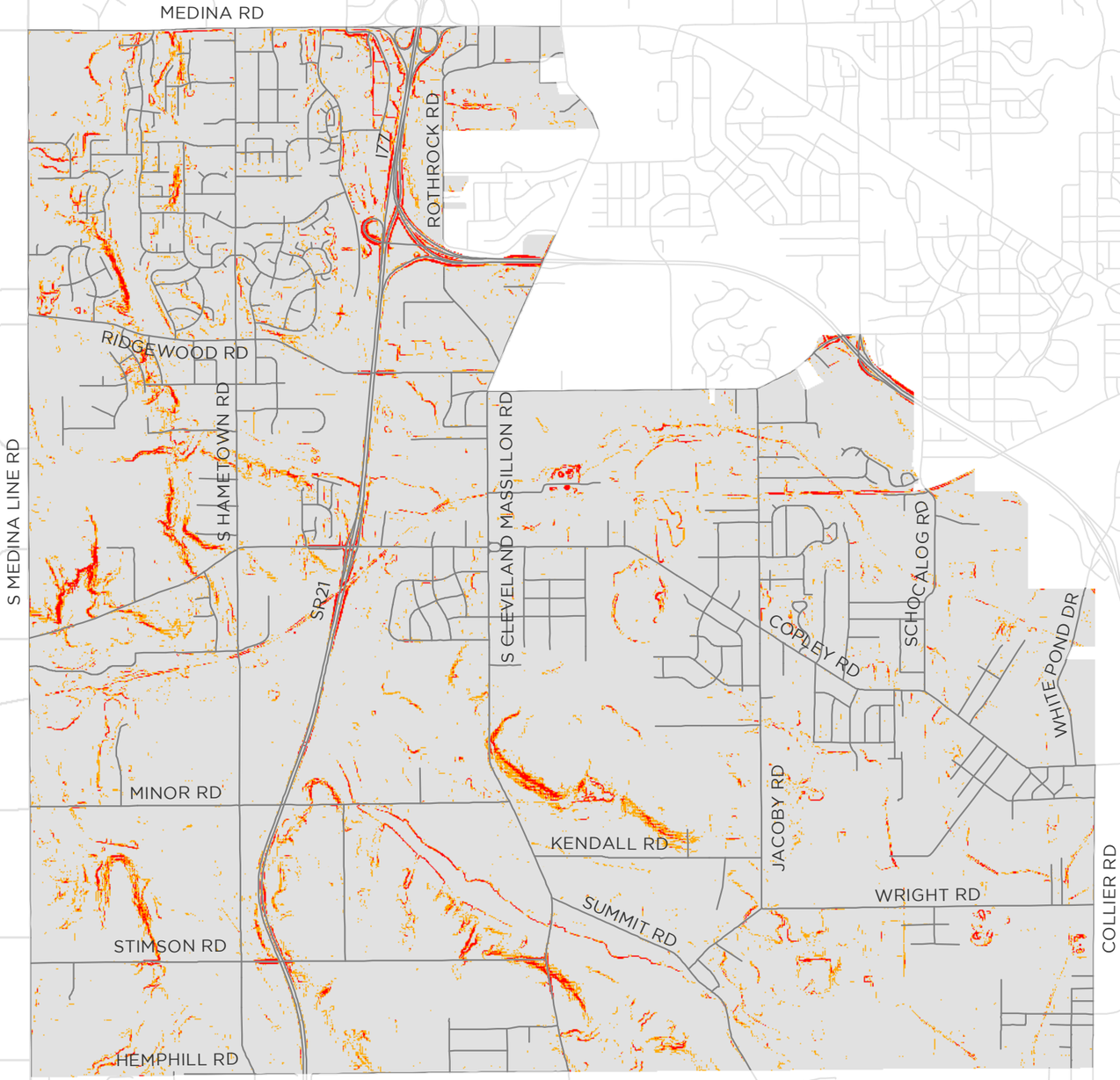
STEEP SLOPES



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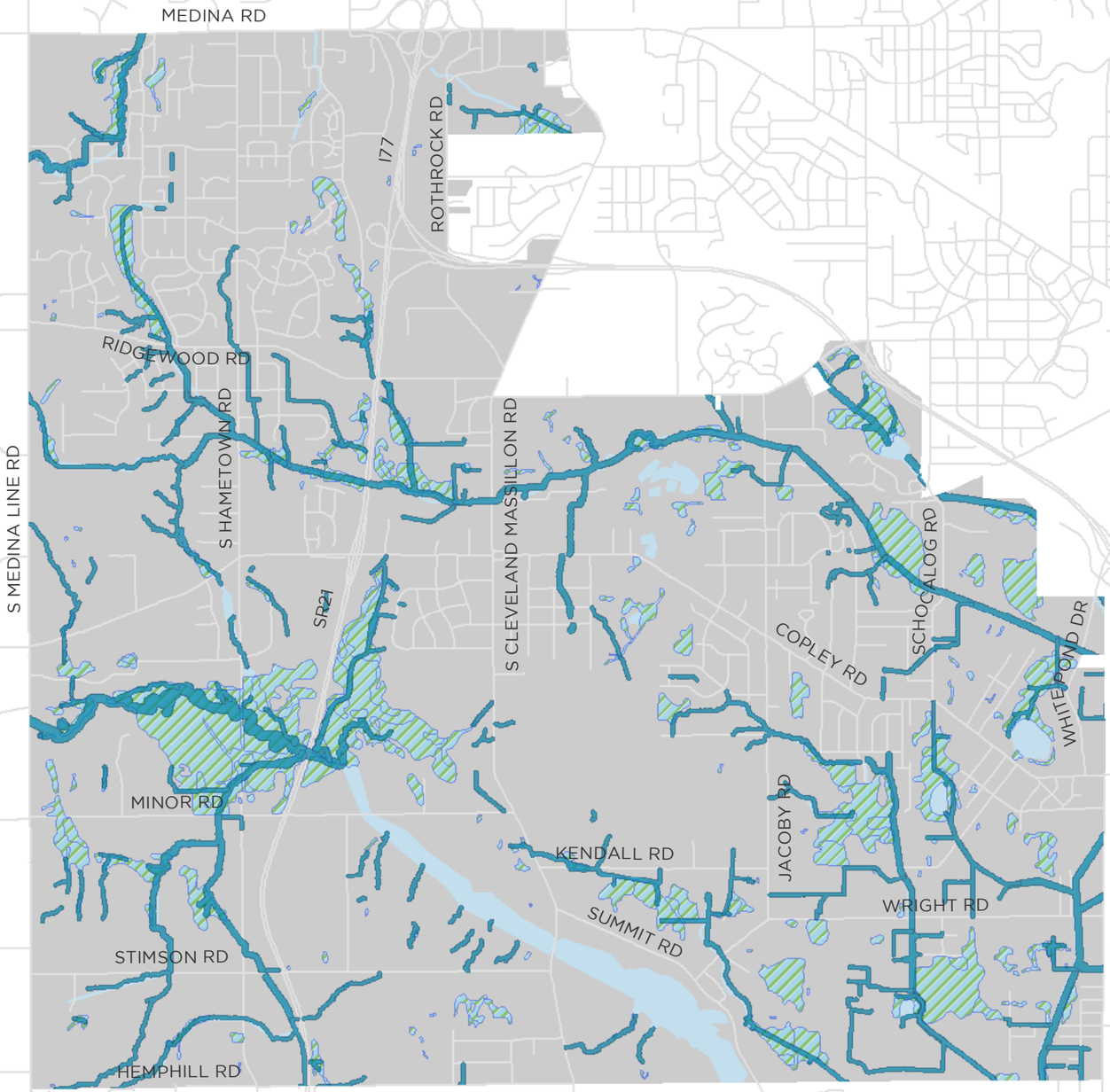
WETLANDS & RIPARIAN AREAS



RIPARIAN SETBACKS
WETLANDS
STREAMS/LAKES/RIVERS
COPLEY

2,000
FEET

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The community impact people.

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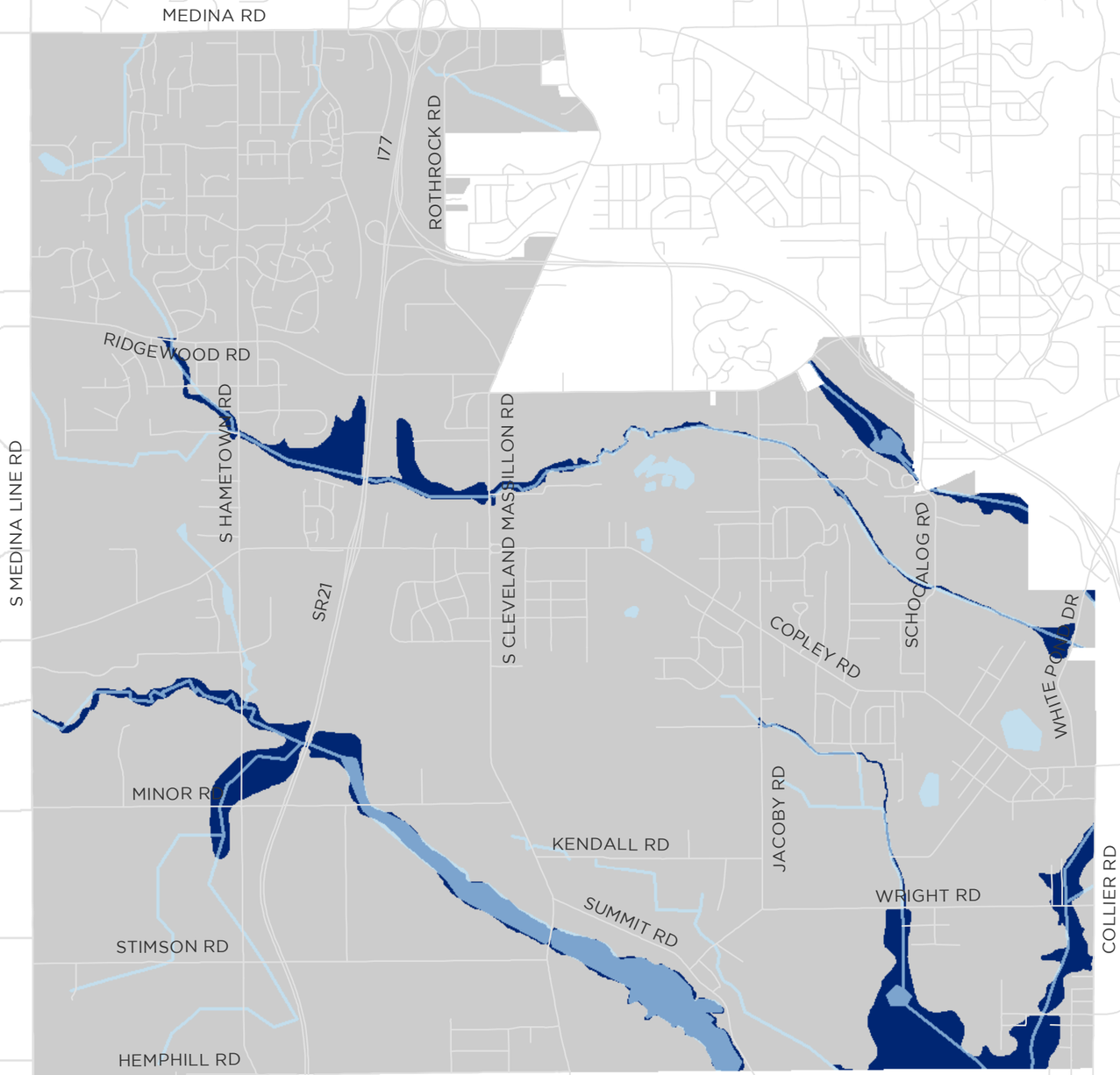
multi-modal connectivity plan

100-YEAR FLOODPLAIN



100 YEAR FLOODPLAIN (ODNR)

STREAMS/LAKES/RIVERS

COPLEY

2,000

FEET

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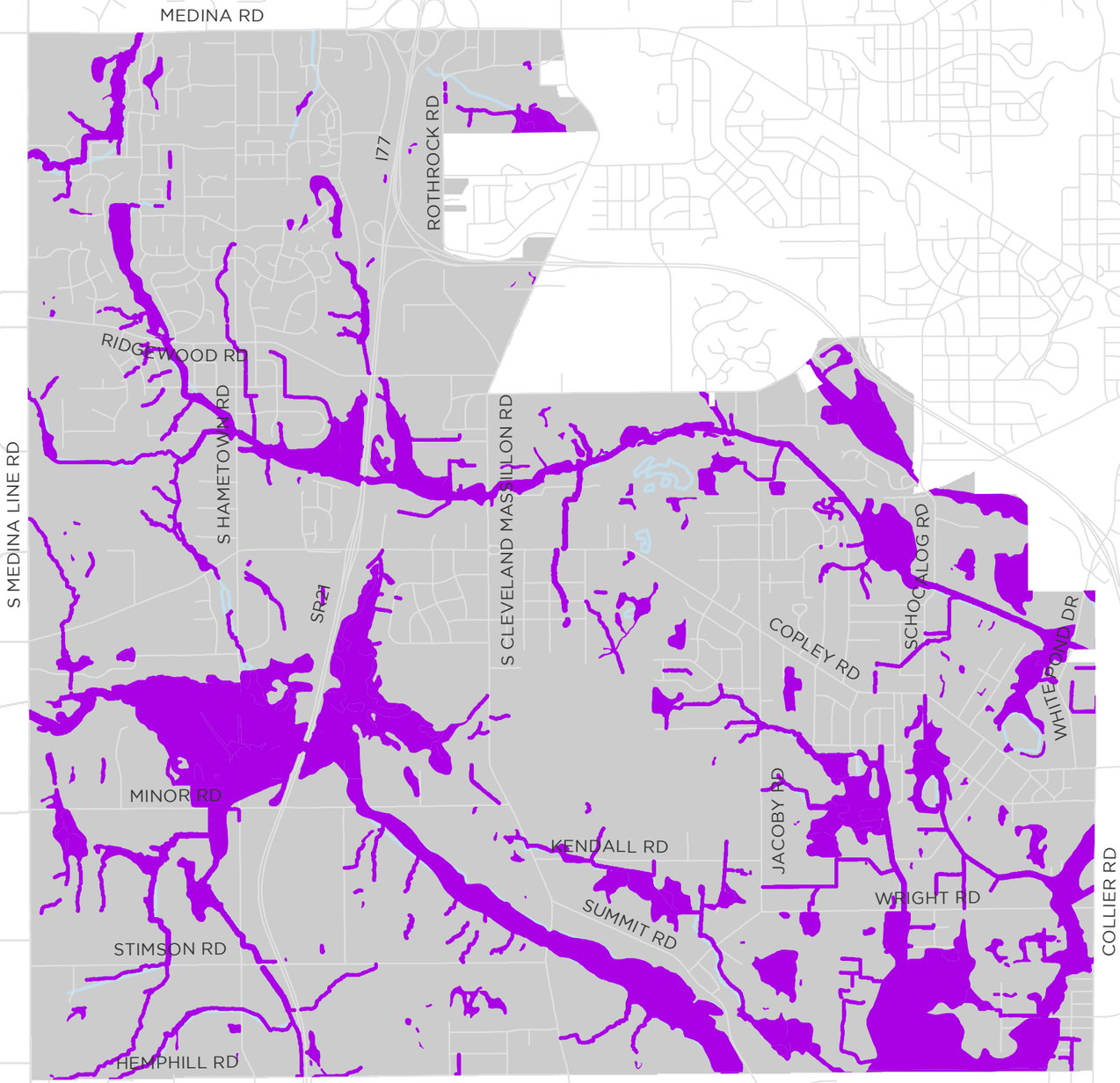
ENVIRONMENTALLY SENSITIVE AREAS



ENVIRONMENTALLY SENSITIVE AREA

STREAMS/LAKES/RIVERS

COPLEY

2,000
FEET

WETLANDS, RIPARIAN SETBACKS, &
100-YEAR FLOODPLAIN COMBINED

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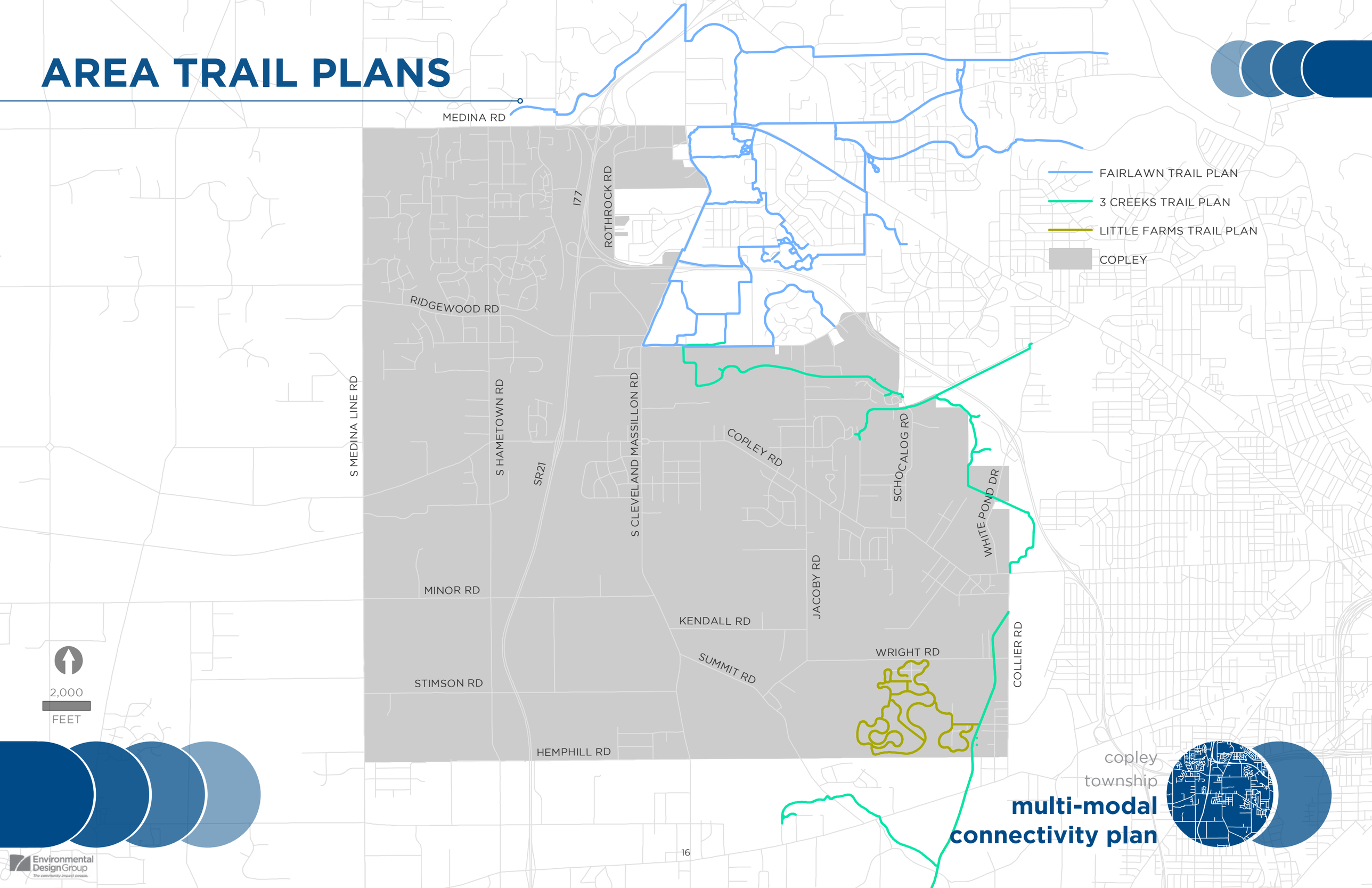
copley township
multi-modal connectivity plan

AREA TRAIL PLANS



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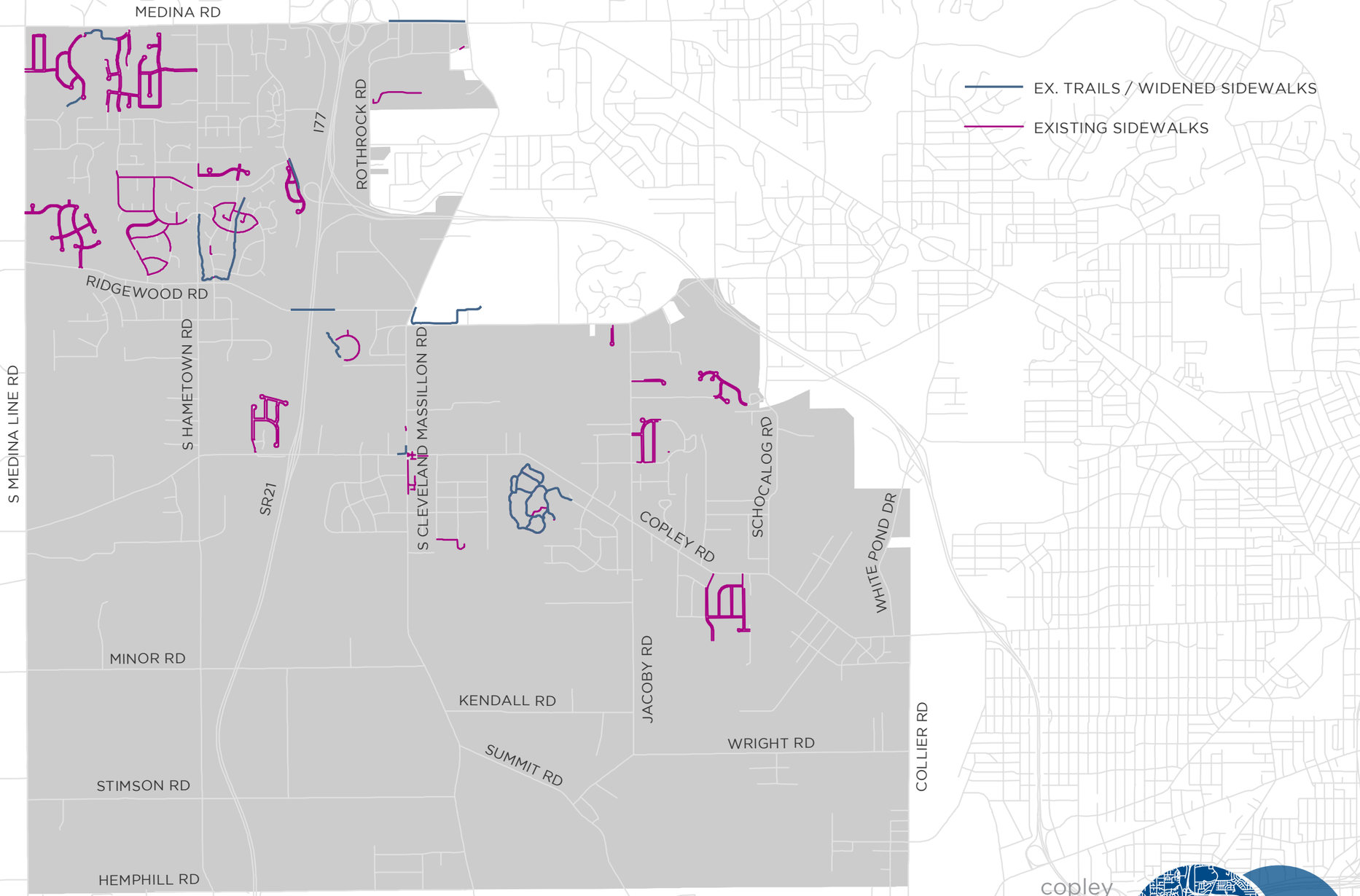
multi-modal connectivity plan

EXISTING SIDEWALKS & TRAILS



EX. TRAILS / WIDENED SIDEWALKS

EXISTING SIDEWALKS

2,000

FEET

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The community impact people.

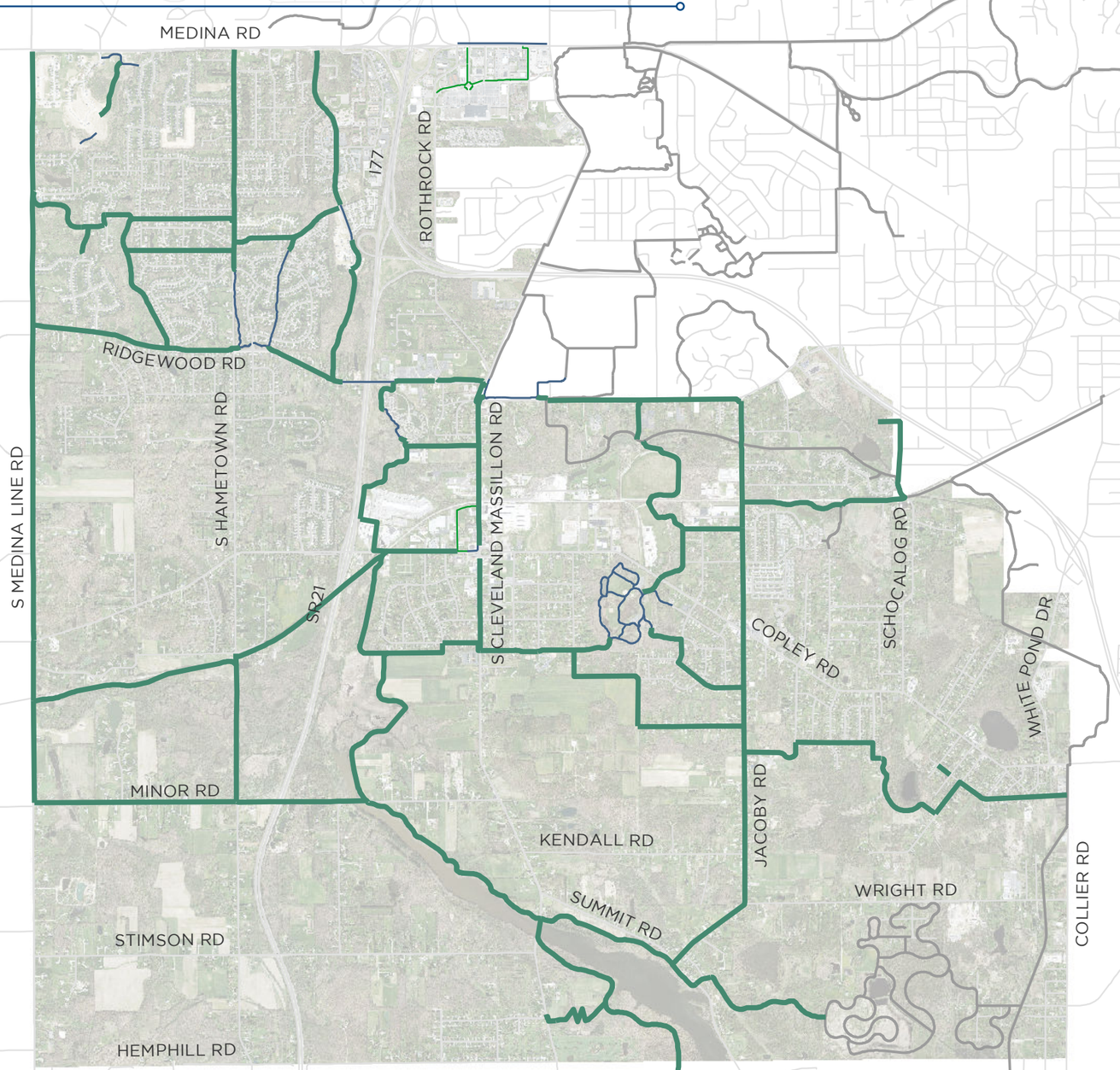
copley township **multi-modal connectivity plan**

copley
township

multi-modal connectivity plan

Environmental Design Group
The community impact people.

POTENTIAL OFF-ROAD NETWORK



POTENTIAL OFF-ROAD ROUTES

EX. TRAILS / WIDENED SIDEWALKS

COPLEY SIDEWALK PLAN

PLANNED TRAILS

2,000

FEET

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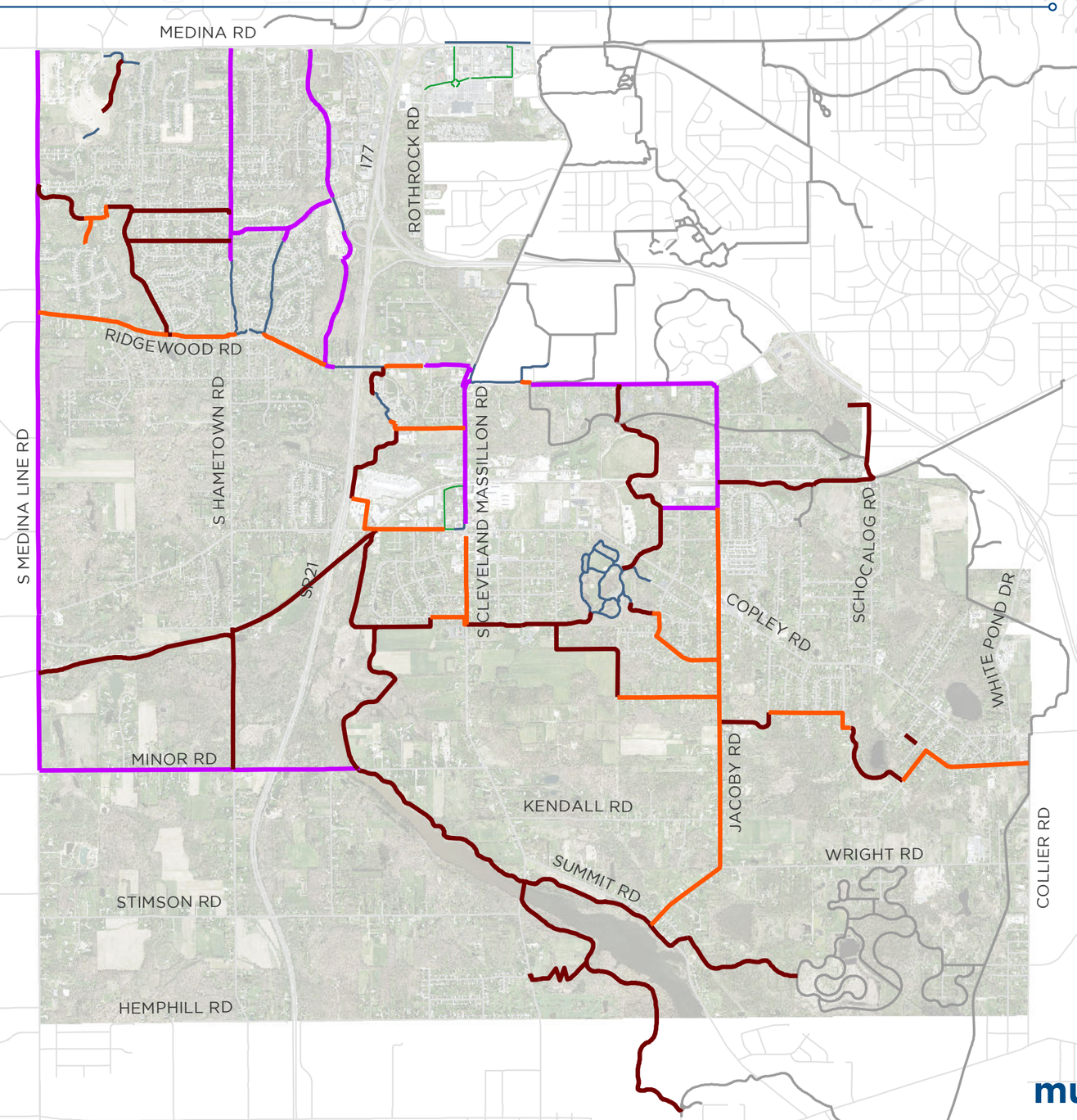
multi-modal connectivity plan

POTENTIAL OFF-ROAD ROUTES & FACILITIES



- POTENTIAL WIDENED SIDEWALK
- POTENTIAL OFF-ROAD TRAIL
- POTENTIAL SIDEPATH
- EX. TRAILS / WIDENED SIDEWALKS
- COPLEY SIDEWALK PLAN
- PLANNED TRAILS

2,000
FEET

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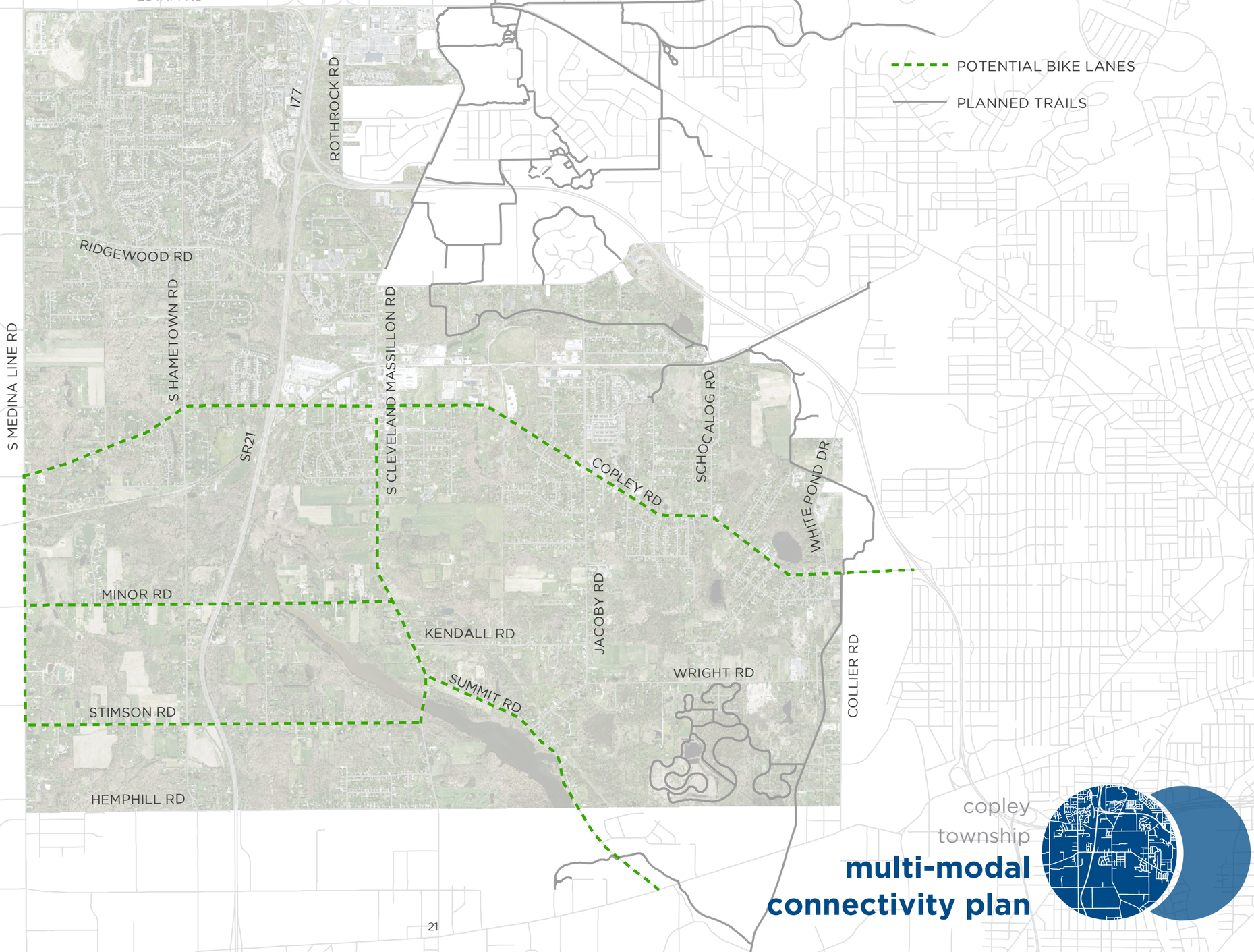
multi-modal connectivity plan

POTENTIAL ON-ROAD ROUTES



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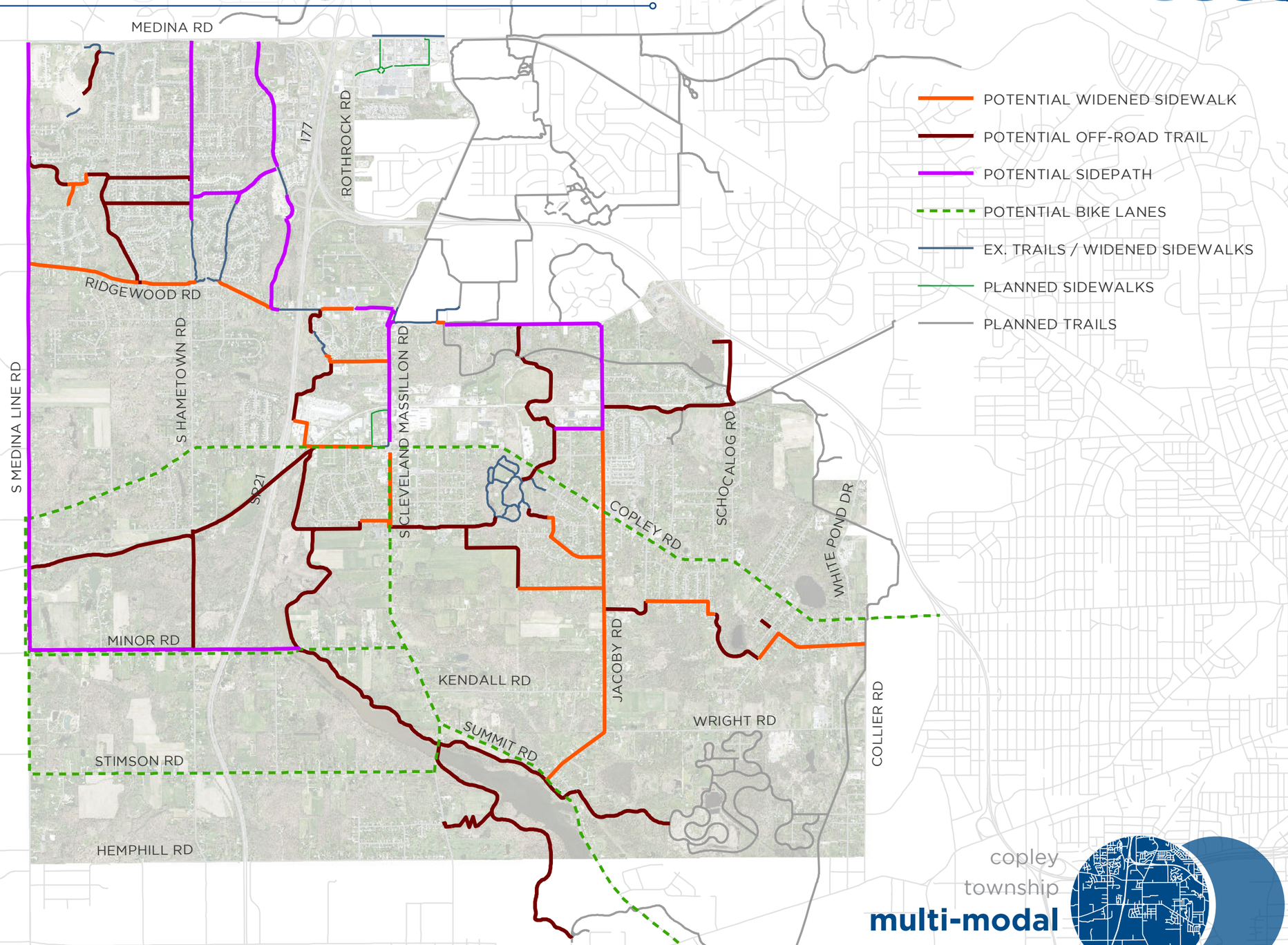
multi-modal connectivity plan

POTENTIAL ON & OFF-ROAD ROUTES



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copley township
multi-modal connectivity plan

POTENTIAL MULTI-MODAL ROUTES & DESTINATIONS

DESTINATIONS

1. Copley Township Park
2. Fairlawn Park
3. Copley Circle
4. Copley Soccer Complex
5. Green Leaf Park
6. Copley Little Farms (Planned)
7. Arrowhead Lake Park
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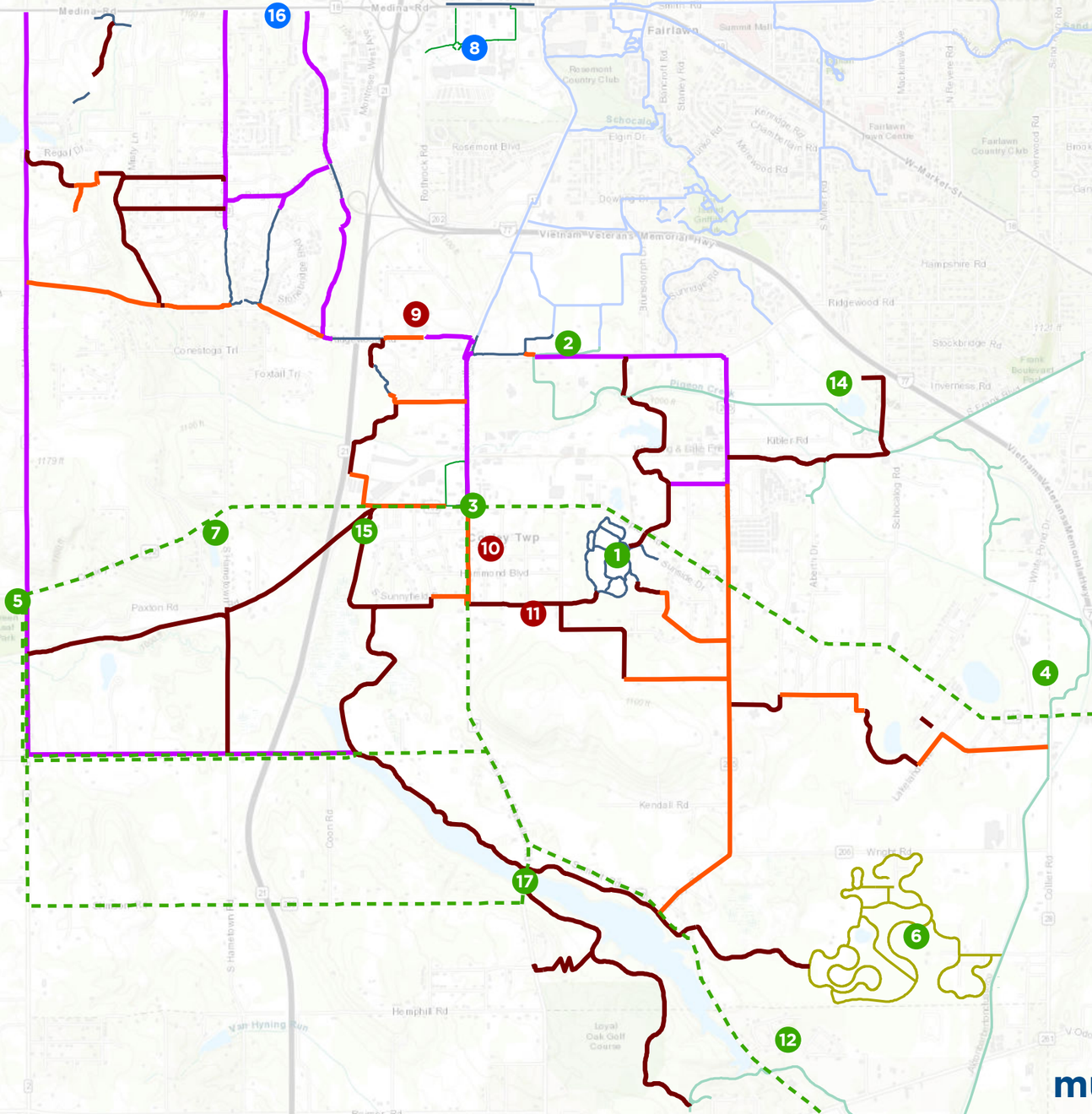

2,000
FEET

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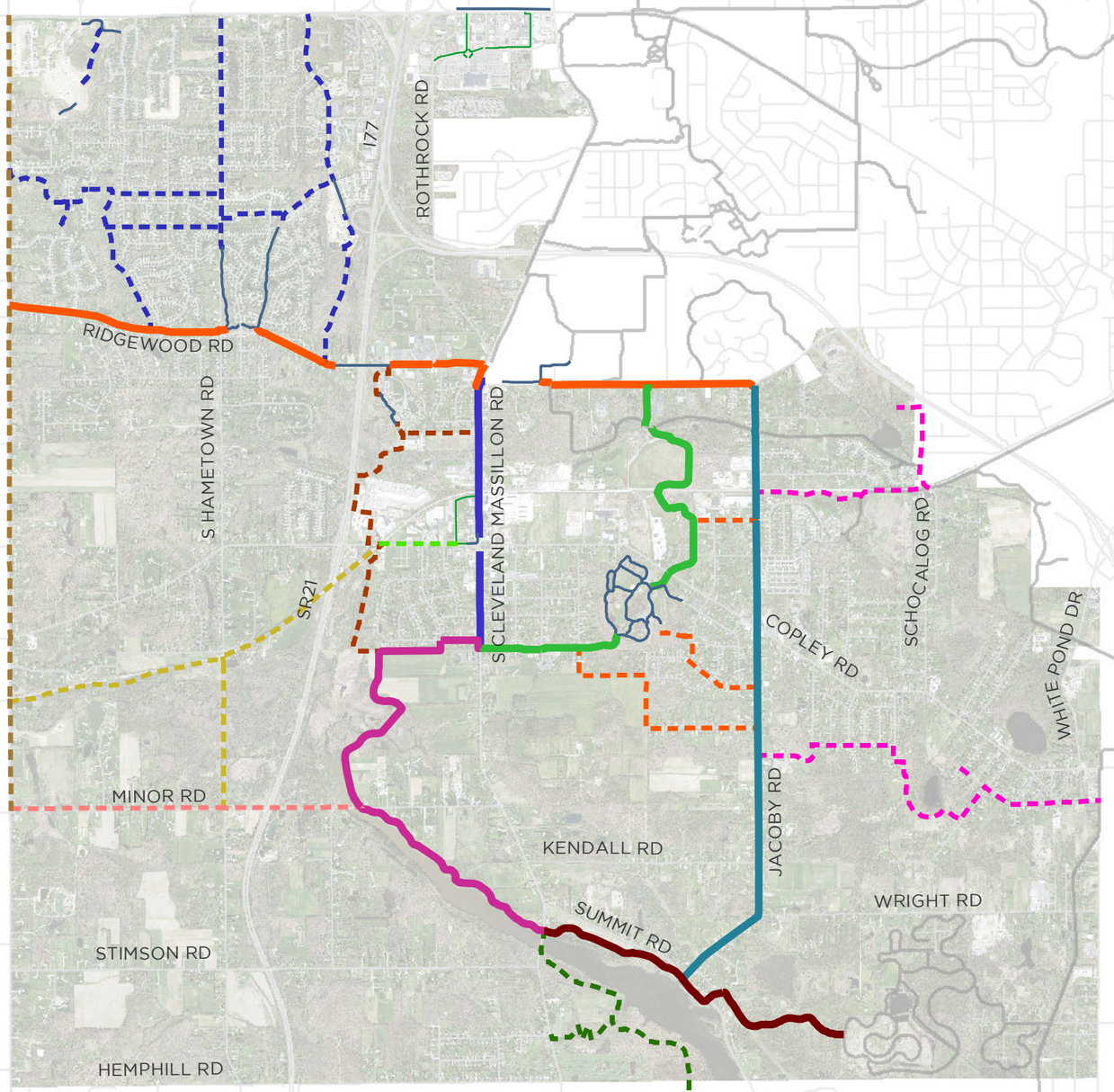
multi-modal connectivity plan

POTENTIAL CORRIDORS & CONNECTORS

- MEDINA LINE CONNECTOR
- HIGH SCHOOL CONNECTORS
- SOUTH HS CONNECTOR
- WEST CIRCLE CONNECTOR
- RAILROAD CONNECTOR
- MINOR RD CONNECTOR
- EAST PARK CONNECTORS
- 3 CREEKS TRAIL CONNECTORS
- SOUTH RESERVOIR CONNECTOR



- RIDGEWOOD HIGH SCHOOL CORRIDOR
- CLE-MASS CORRIDOR
- COPLEY TWP PARK CORRIDOR
- RESERVOIR CORRIDOR
- LITTLE FARMS CORRIDOR
- JACOBY WATER / SEWER CORRIDOR
- EX. TRAILS / WIDENED SIDEWALKS
- COPLEY SIDEWALK PLAN
- PLANNED TRAILS

2,000
FEET

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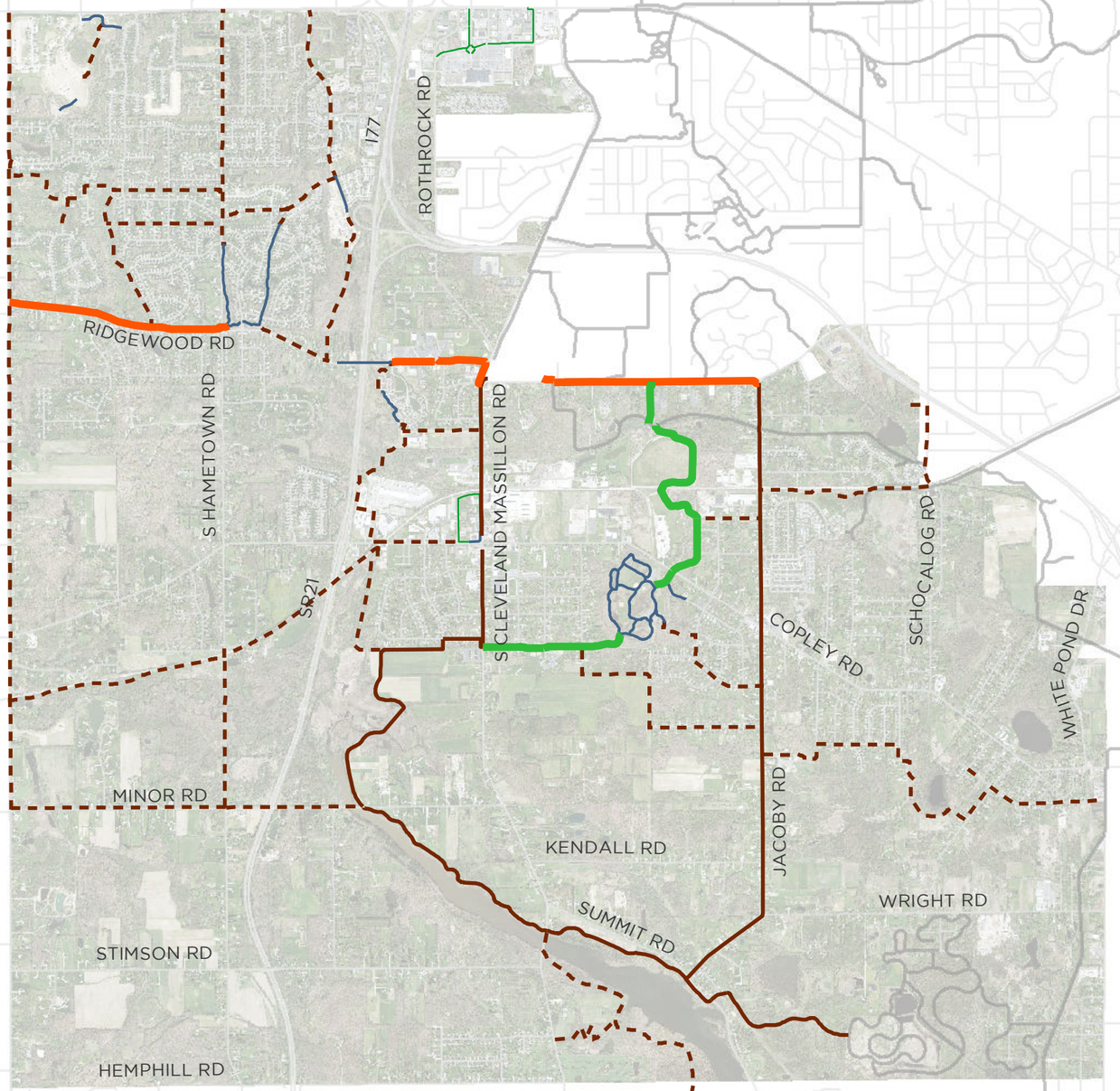
multi-modal connectivity plan

PRIORITY MULTI-MODAL ROUTES



RIDGEWOOD HIGH SCHOOL CORRIDOR

COPLEY TWP PARK CORRIDOR

SECONDARY CORRIDOR ROUTES

FUTURE CONNECTOR ROUTES

EX. TRAILS / WIDENED SIDEWALKS

COPLEY SIDEWALK PLAN

PLANNED TRAILS

2,000

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PRIORITY MULTI-MODAL ROUTES

PRIORITY MULTI-MODAL ROUTES

PRIORITY MULTI-MODAL ROUTES

COPLEY TOWNSHIP PARK ENTRANCE | AFTER

MULTI-MODAL SEGMENTS | IMPACTS & CONSTRAINTS

SEGMENT NAME	IMPACTS & CONSTRAINTS: USES EXISTING RIGHT-OF-WAY	PRIVATE PROPERTY NEEDS / EASEMENTS	POTENTIAL UTILITY IMPACTS	POTENTIAL COST MAGNITUDE	LOGICAL DESTINATION/TERMINI	POPULATION SERVED
PRIORITY CORRIDORS						
RIDGEWOOD HIGH SCHOOL CORRIDOR	●●●	●○○	●●○	●●○	●●●	●●●
COPLEY TWP PARK CORRIDOR	●○○	●●○	●○○	●●●	●●○	●●○
SECONDARY CORRIDORS						
CLE-MASSILLON CORRIDOR	●●●	●●○	●●●	●●●	●●●	●●○
RESERVOIR CORRIDOR	●○○	●●●	●○○	●●●	●●○	●●○
LITTLE FARMS CORRIDOR	●●●	●○○	●○○	●●○	●●○	●●○
JACOBY WATER / SEWER CORRIDOR	●●○	●●○	●●●	●●○	●●○	●●●
FUTURE CONNECTOR ROUTES						
MEDINA LINE CONNECTOR	●●●	●○○	○○○	●●○	●○○	●○○
HIGH SCHOOL CONNECTORS	●○○	●●○	○○○	●○○	●●○	●●●
SOUTH HS CONNECTOR	●○○	●●●	○○○	●●○	●●○	●●○
WEST CIRCLE CONNECTOR	●●●	●○○	○○○	○○○	●●○	●○○
RAILROAD CONNECTOR	●○○	●●●	○○○	●●●	●○○	●○○
MINOR RD CONNECTOR	●●●	●○○	○○○	●●○	○○○	●○○
EAST PARK CONNECTORS	●●○	●●○	●○○	●●○	●●●	●●●
3 CREEKS TRAIL CONNECTORS	●●○	●●○	○○○	●●○	○○○	●●○
SOUTH RESERVOIR CONNECTOR	●○○	●●●	○○○	●●●	○○○	○○○

copley
township

stormwater & greenways

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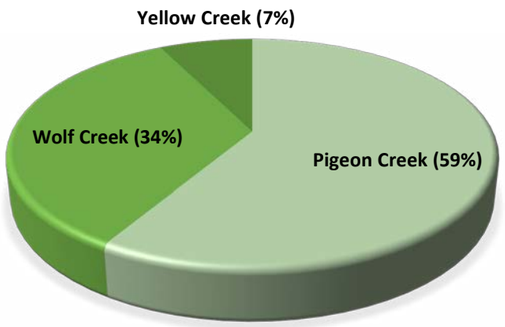
Copley Township is located in Summit County with 93% of the township draining into the Wolf Creek and Pigeon Creek watersheds, which are both headwaters of the Tuscarawas River, which then drains to the Ohio River and ultimately the Golf of Mexico. The remaining 7% of the township drains to the Yellow Creek watershed, which is tributary to the Cuyahoga River ultimately draining to Lake Erie. Of these watersheds, a large majority of the township's water bodies and existing stormwater control measures (SCMs) are located in the Tuscarawas River Watershed - mainly within Pigeon Creek watershed.

In 2017, all the Ohio EPA watershed plans were determined to be non-conforming with the USEPA's methodology for watershed planning. Therefore, the Ohio EPA mandated new watershed plans for the entire state. These new watershed plans are called Nonpoint Source Implementation Strategy Plans (also called: NPS-IS plans or 9-Element plans) and shall be created for each 12-Digit Hydrologic Code (HUC 12) subwatershed. Copley has three HUC12 subwatersheds - Yellow Creek, Wolf Creek and Pigeon Creek.

As part of the last chapter in every NPS-IS plan, projects are identified and roughly described with a series of 14 points/questions. These project descriptions conceptually define projects in terms of costs, timelines, partnerships, water quality benefits, and funding potentials. These plans also document water quality impairments and potential partners for implementation.

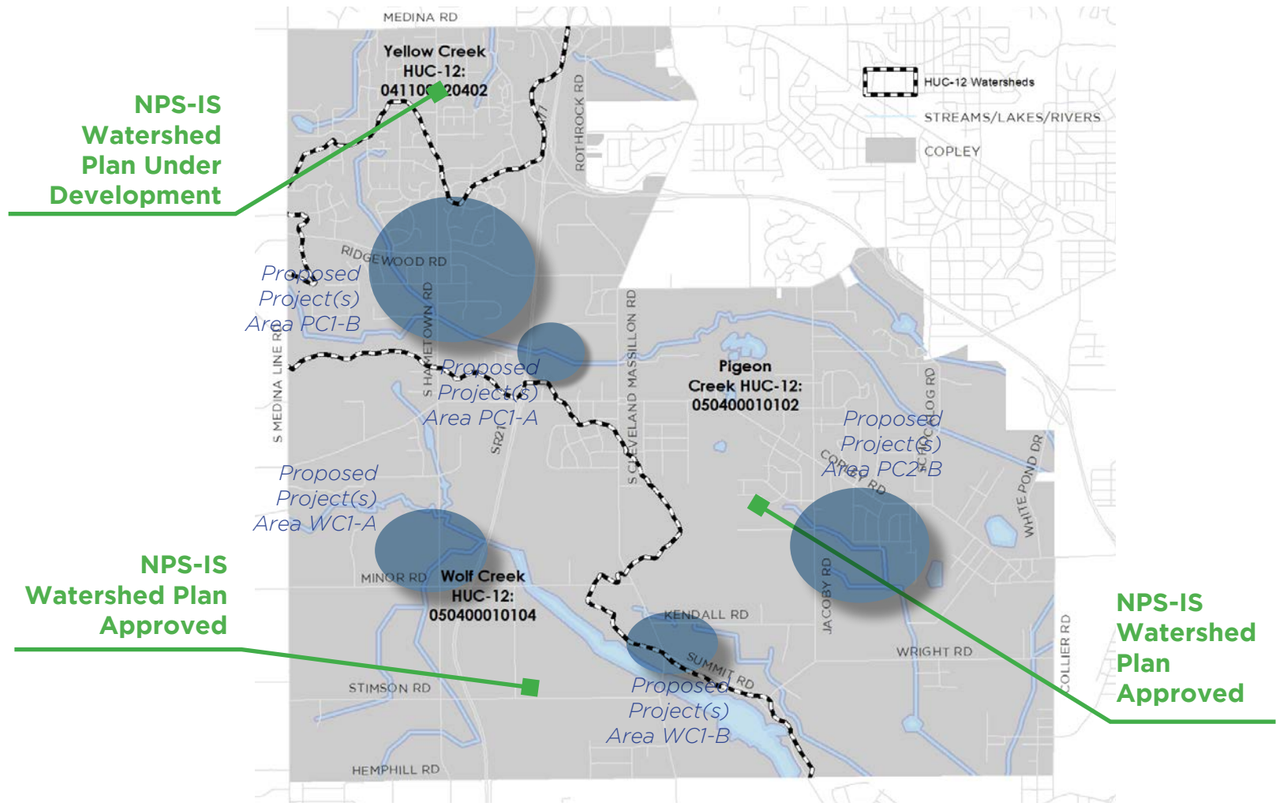
COPLEY WATERSHEDS BY AREA (ACRES)



An approved NPS-IS plan is required to apply for Ohio EPA/USEPA Section 319 stormwater and habitat improvement design & construction grants. Additionally, these regional watershed plans can score additional points for competitive grant applications such as:

- Clean Ohio Conservation Fund Grant applications,
- WRRSP grant application,
- OPWC,
- and other funding applications.

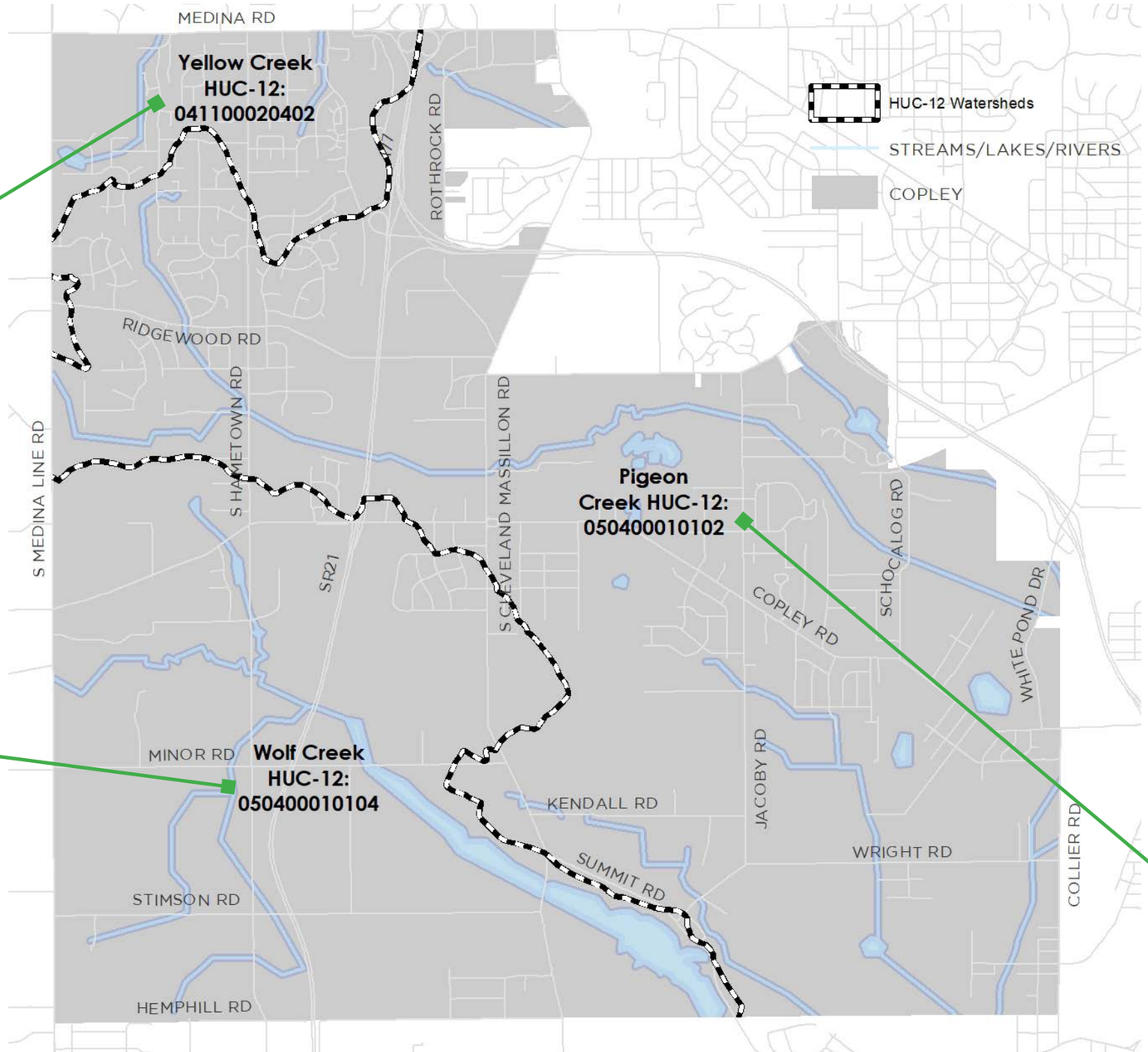
As mentioned previously, Copley is almost entirely within the Wolf Creek and Pigeon Creek HUC-12 watersheds. Both of these NPS-IS plans are currently approved by the USEPA and therefore only require slight modification to include Copley priorities projects for flood control, water quality improvements, and greenway restoration. The Yellow Creek NPS-IS plan is currently being drafted by the Summit County Soil and Water Conservation District (SCSWCD) and is estimated to be completed in 2022. Therefore the township would benefit most by having the Environmental Design Group team update the two completed NPS_IS plans and then have SCSWCD include Copley information into their Yellow Creek NPS-IS Plan. Copley can then utilize this information to apply for a multitude of grant applications for implementation.



NPS-IS Watershed Plan Under Development

NPS-IS Watershed Plan Approved

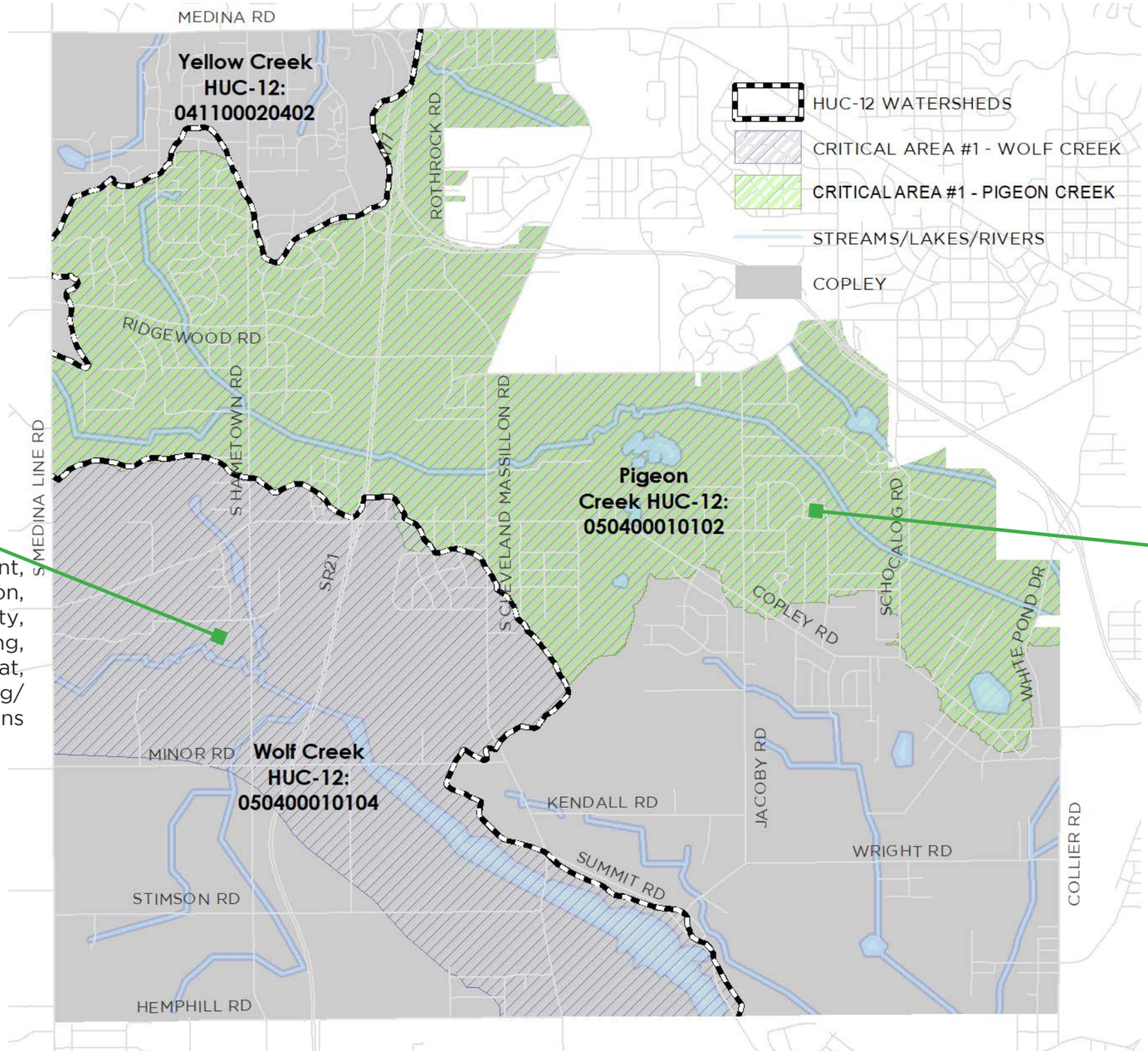
NPS-IS Watershed Plan Approved



2,000
FEET

NPS-IS Plan is a (Nine-Element) Nonpoint Source Implementation Strategic Plan approved by the USEPA. It is a watershed-based plan that identifies water quality issues for potential funding & grants.

STORMWATER & GREENWAYS | EXISTING NPS-IS CRITICAL AREAS



Critical areas are problems identified within a watershed based upon known water quality impairments.

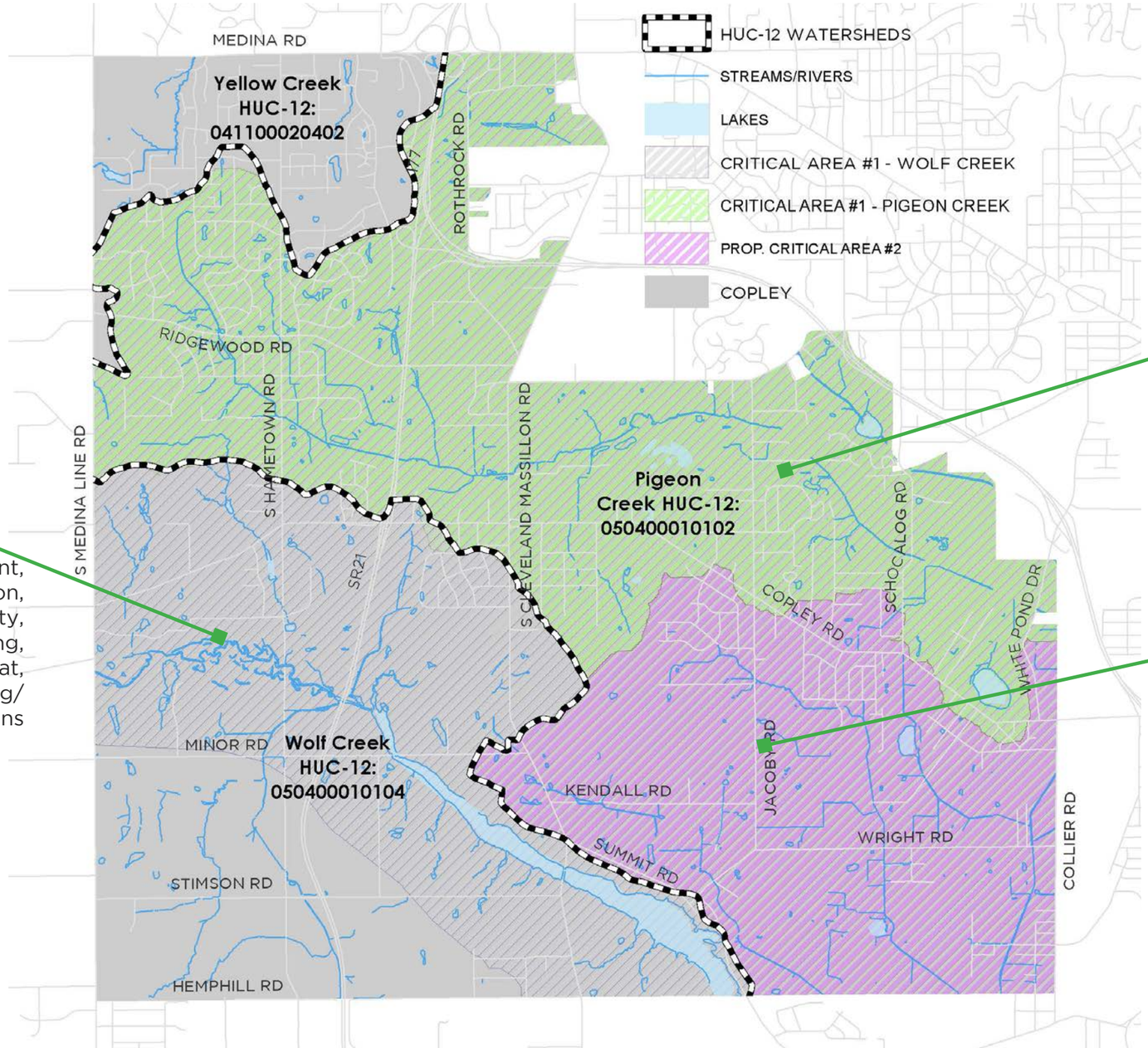
WOLF CREEK Critical Area #1

- urban/suburban development,
- channelization,
- poor water quality,
- flooding,
- lack of instream habitat,
- excess nutrient loading/ concentrations

PIGEON CREEK Critical Area #1

- urban/suburban development,
- channelization,
- poor water quality,
- flooding,
- lack of instream habitat,
- excess nutrient loading/ concentrations
- poor riparian zone

STORMWATER & GREENWAYS | PROPOSED NPS-IS CRITICAL AREAS



Critical areas are problems identified within a watershed based upon known water quality impairments.

PIGEON CREEK Critical Area #1

- urban/suburban development,
- channelization,
- poor water quality,
- flooding,
- lack of instream habitat,
- excess nutrient loading/ concentrations
- poor riparian zone

WOLF CREEK Critical Area #1

- urban/suburban development,
- channelization,
- poor water quality,
- flooding,
- lack of instream habitat,
- excess nutrient loading/ concentrations

PIGEON CREEK Proposed Critical Area #2

- poor water quality,
- flooding,
- channelization,
- lack of instream habitat,

2,000
FEET

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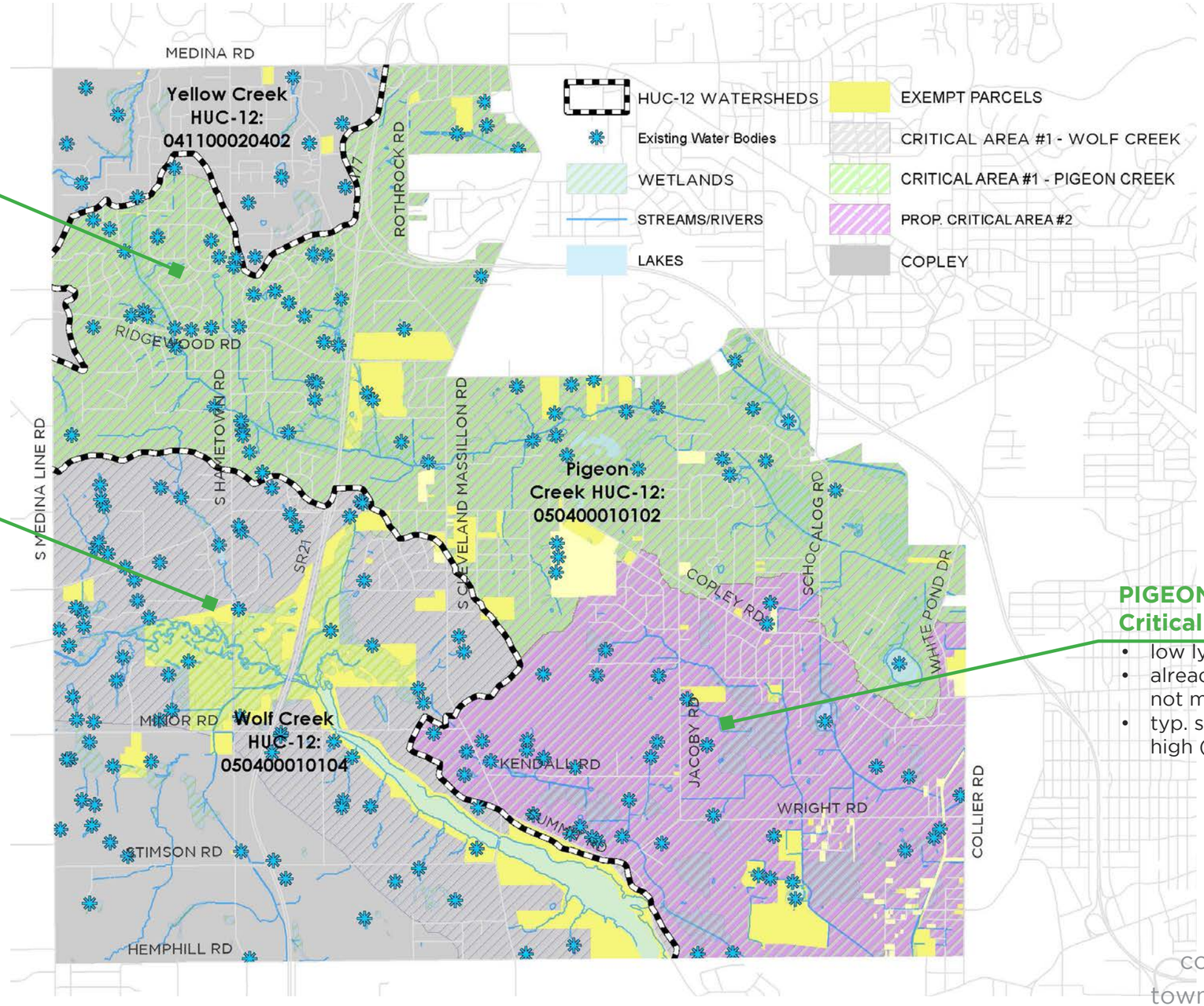
STORMWATER & GREENWAYS | FLOOD CONTROL POTENTIAL

PIGEON CREEK Critical Area #1

- potential for modification of existing water bodies for flood control in the upper portion of the Critical Area #1 - most on private properties or HOAs
- stormwater control in upper watershed has greatest impact to township

WOLF CREEK Critical Area #1

- lots of land owned by Barberton
- water levels highly controled by Reservoir needs



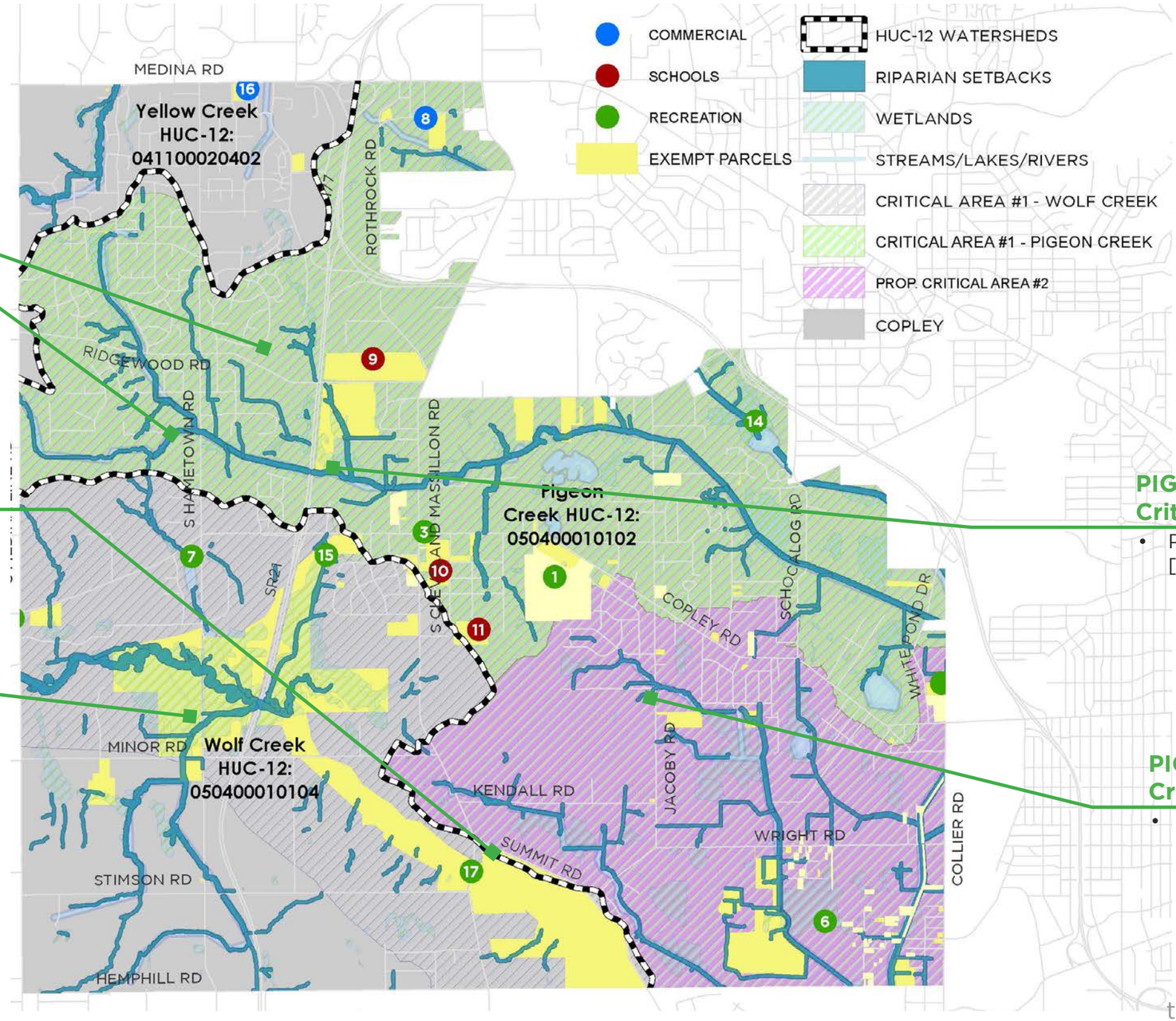
PIGEON CREEK Critical Area #2

- low lying area
- already in floodway - therefore not much capacity
- typ. static ground water level is high (4-15 ft)

2,000
FEET

Critical areas are problems identified within a watershed based upon known water quality impairments.

STORMWATER & GREENWAYS | PROPOSED NPS-IS CRITICAL AREA PROJECTS



PIGEON CREEK
Critical Area #1

- Proposed project(s) #PC1-B [existing basin retrofits]

WOLF CREEK
Critical Area #1

- Proposed project #WC1-A [increase floodplain]

WOLF CREEK
Critical Area #1

- Proposed project #WC1-B [work with Barberton]

PIGEON CREEK
Critical Area #1

- Proposed project #PC1-A [oxbow wetland]

PIGEON CREEK
Critical Area #2

- Proposed project #PC2-B [work with UofA]

Critical areas are problems identified within a watershed based upon known water quality impairments.

2,000
FEET

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copley township
stormwater & greenways

copley
township

drinking water & sanitary sewer

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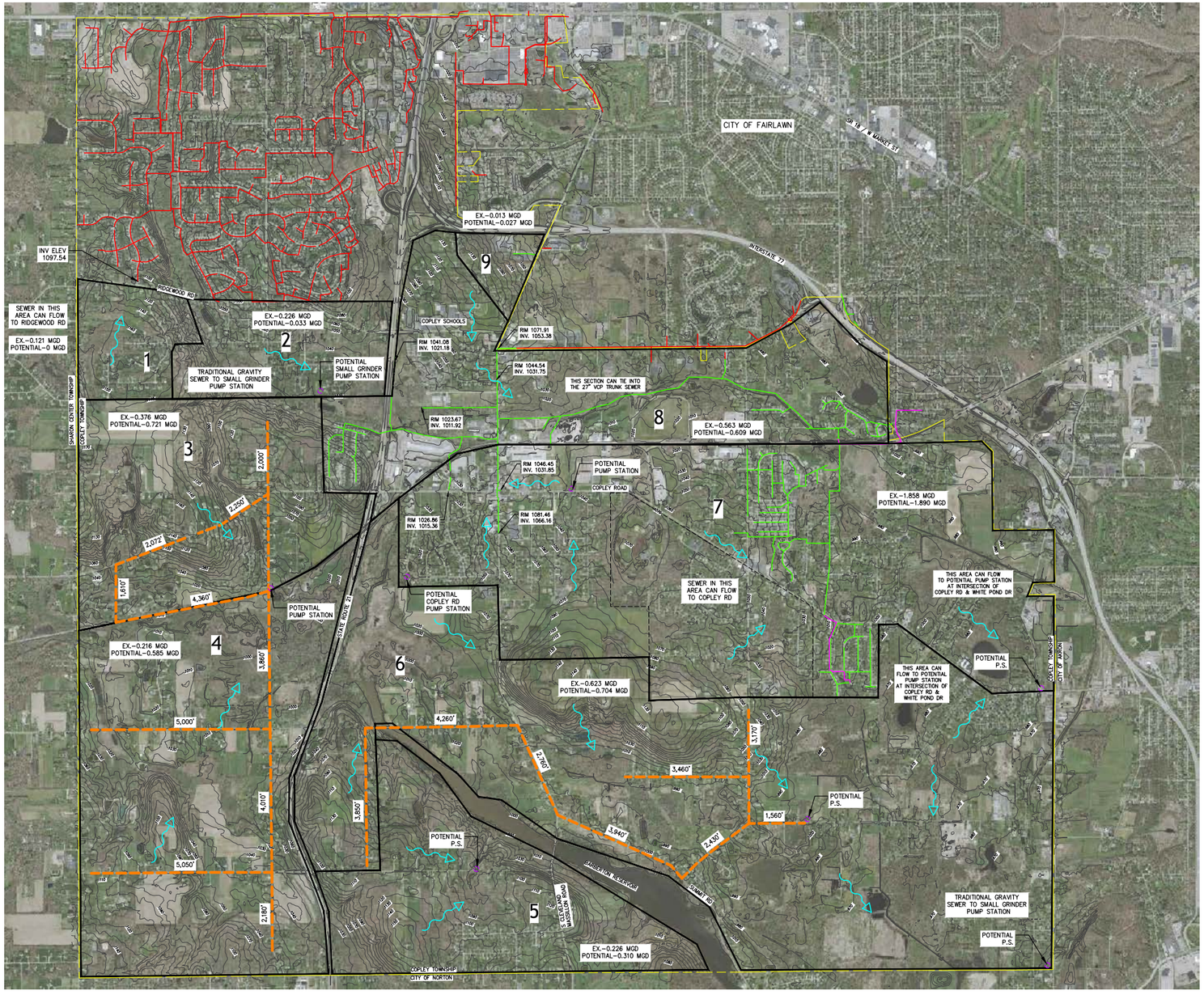
The community impact people.

PROPOSED SEWER PLAN



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GRAPHIC SCALE

LEGEND

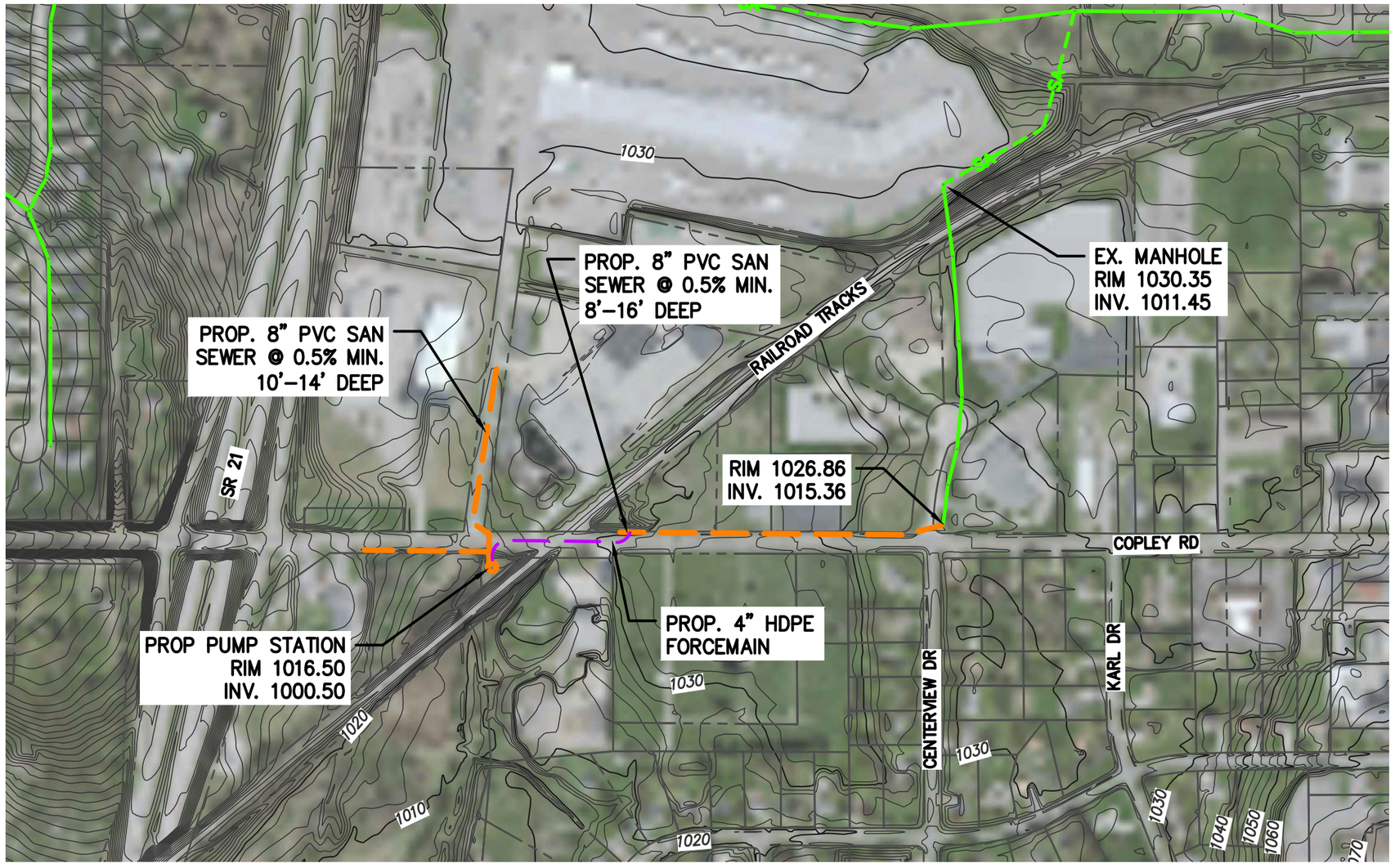
- AKRON SEWER
- DSSS SEWER
- AKRON FORCEMAIN
- COPLEY TOWNSHIP BOUNDARY
- FLOW LINES
- PROPOSED TRUNK
- FLOW AREA BOUNDARIES

copley township

drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY SEWER PROJECTS



COPLEY TOWNSHIP
PROJECT A

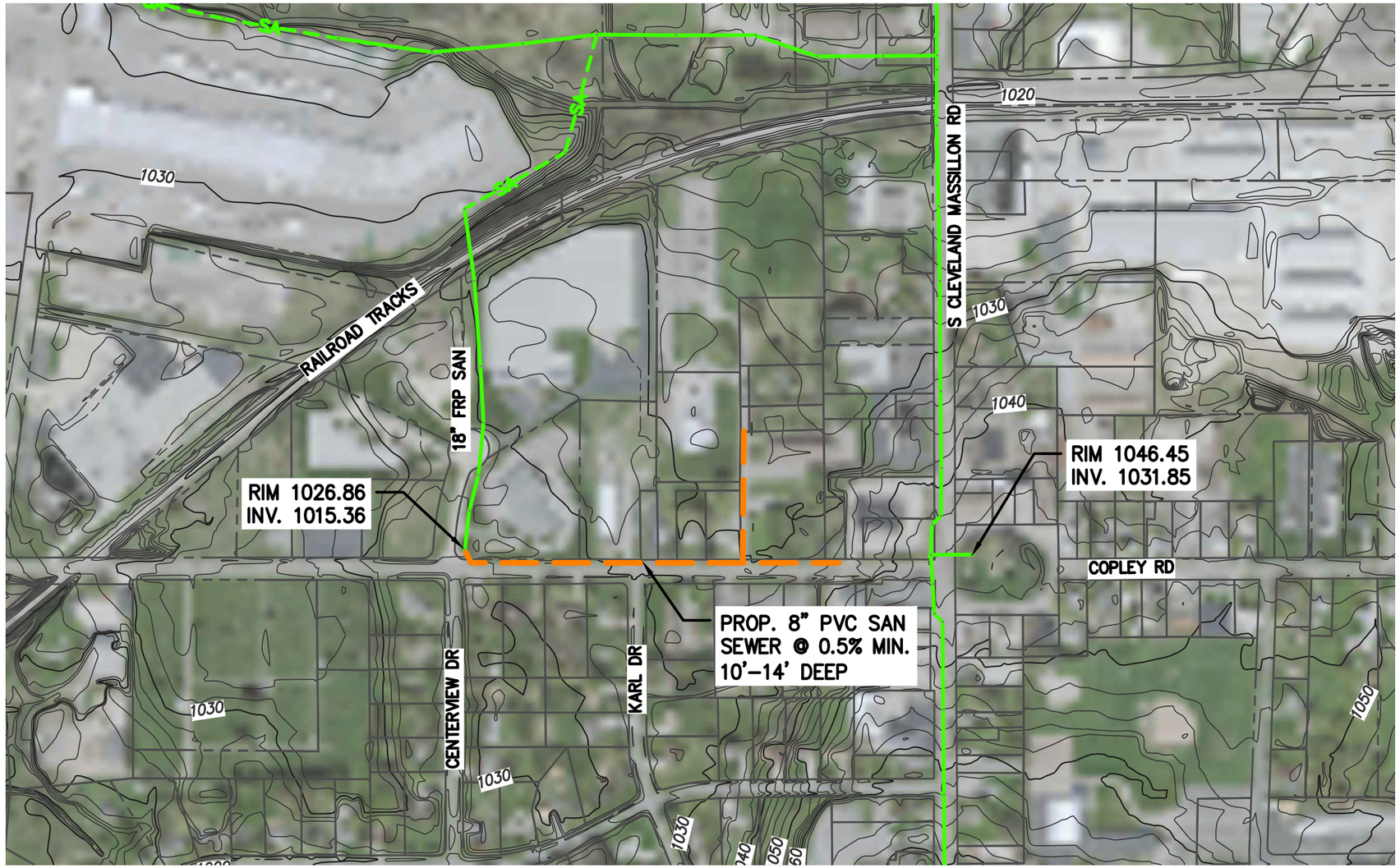
0 400
GRAPHIC SCALE

EXISTING AKRON SEWER
PROPOSED GRAVITY SEWER
PROPOSED FORCEMAIN

copley
township
drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY SEWER PROJECTS



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GRAPHIC SCALE

COPLEY TOWNSHIP
PROJECT B

EXISTING AKRON SEWER

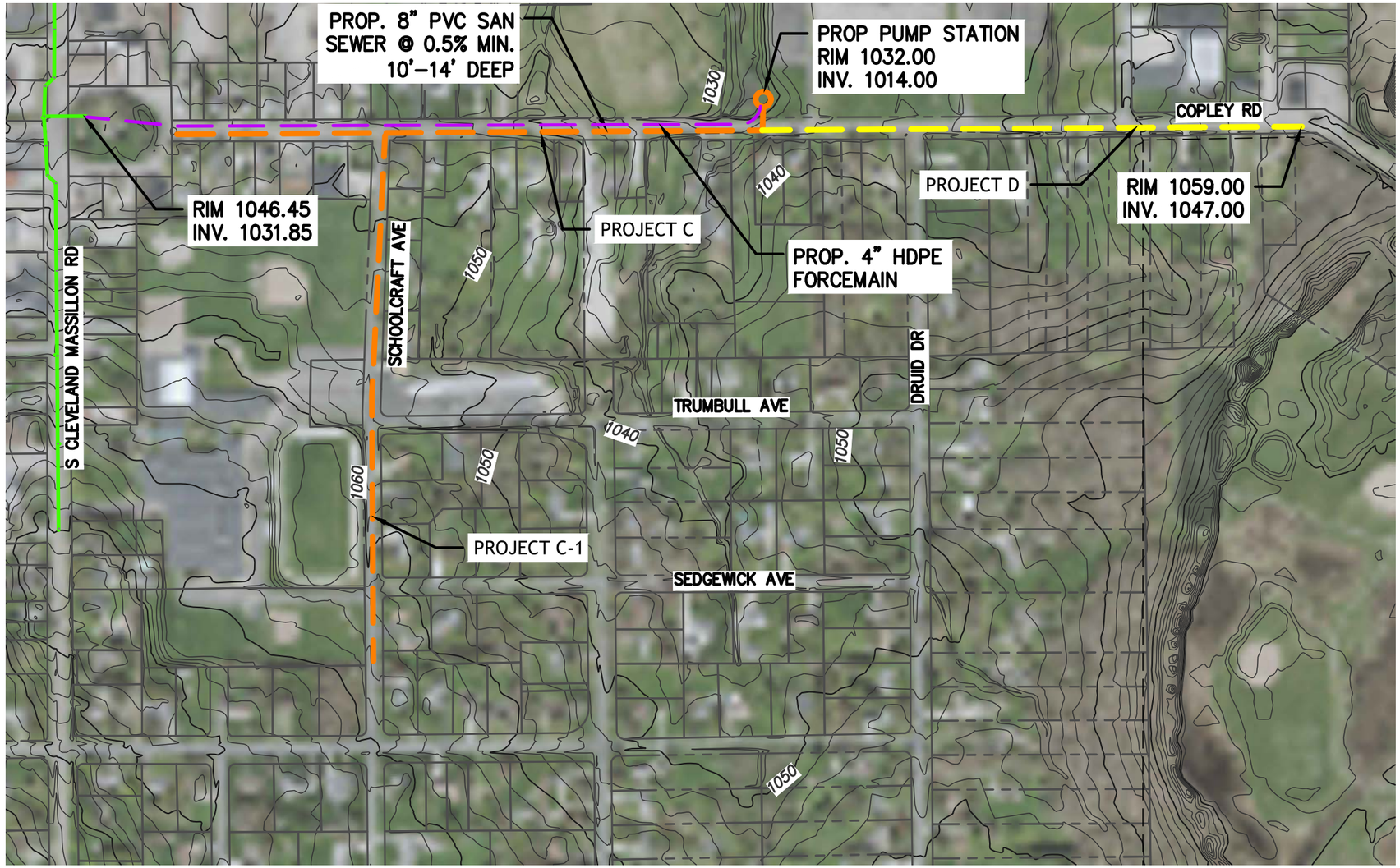
PROPOSED GRAVITY SEWER

PROPOSED FORCEMAIN

copley
township
drinking water &
sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY SEWER PROJECTS



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0 400

GRAPHIC SCALE

COPLEY TOWNSHIP PROJECTS C & D

EXISTING AKRON SEWER

PROPOSED GRAVITY SEWER - C

PROPOSED GRAVITY SEWER - D

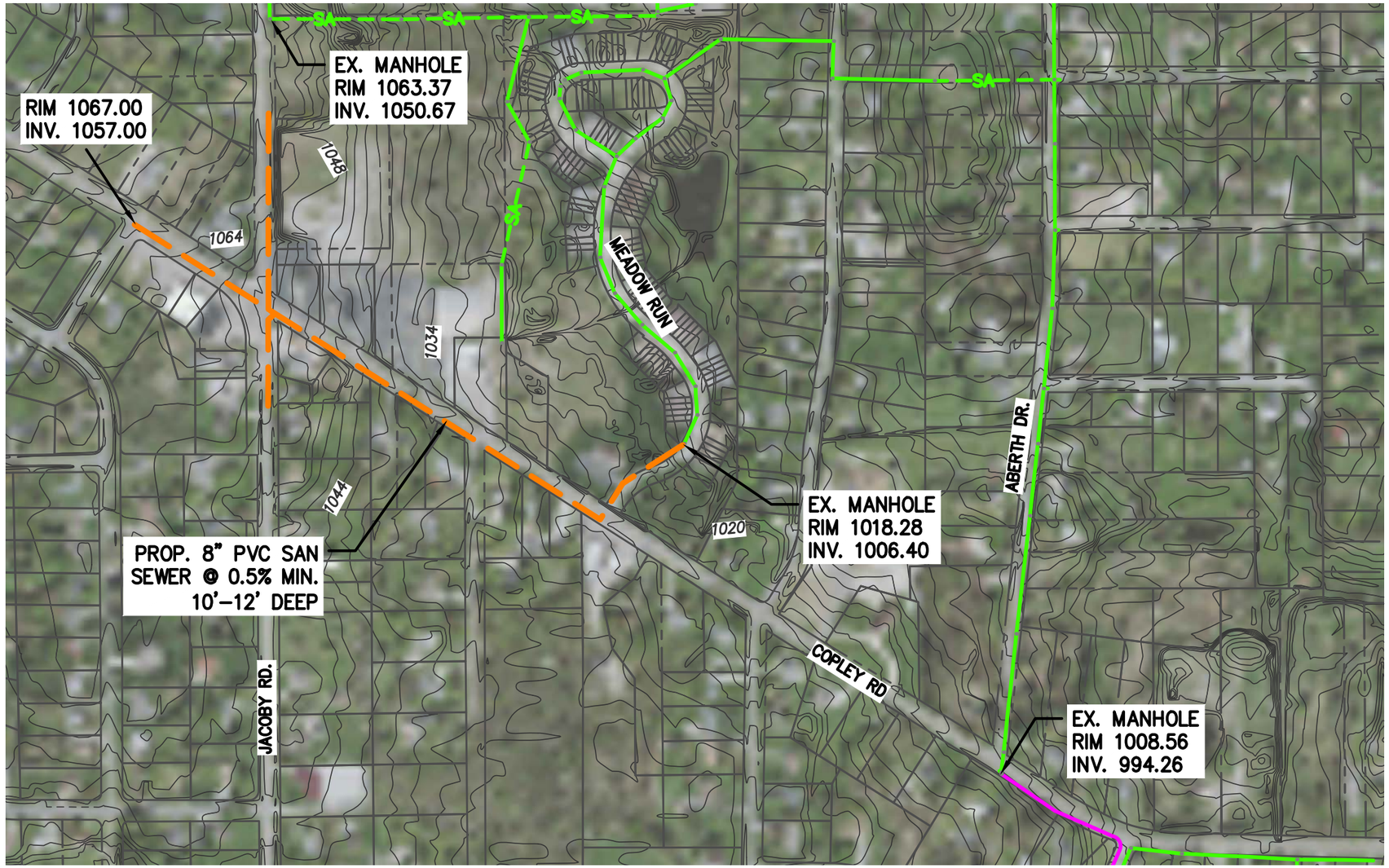
PROPOSED FORCEMAIN

copley township

drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY SEWER PROJECTS



N

0 400

GRAPHIC SCALE

COPLEY TOWNSHIP
PROJECT E

EXISTING AKRON SEWER

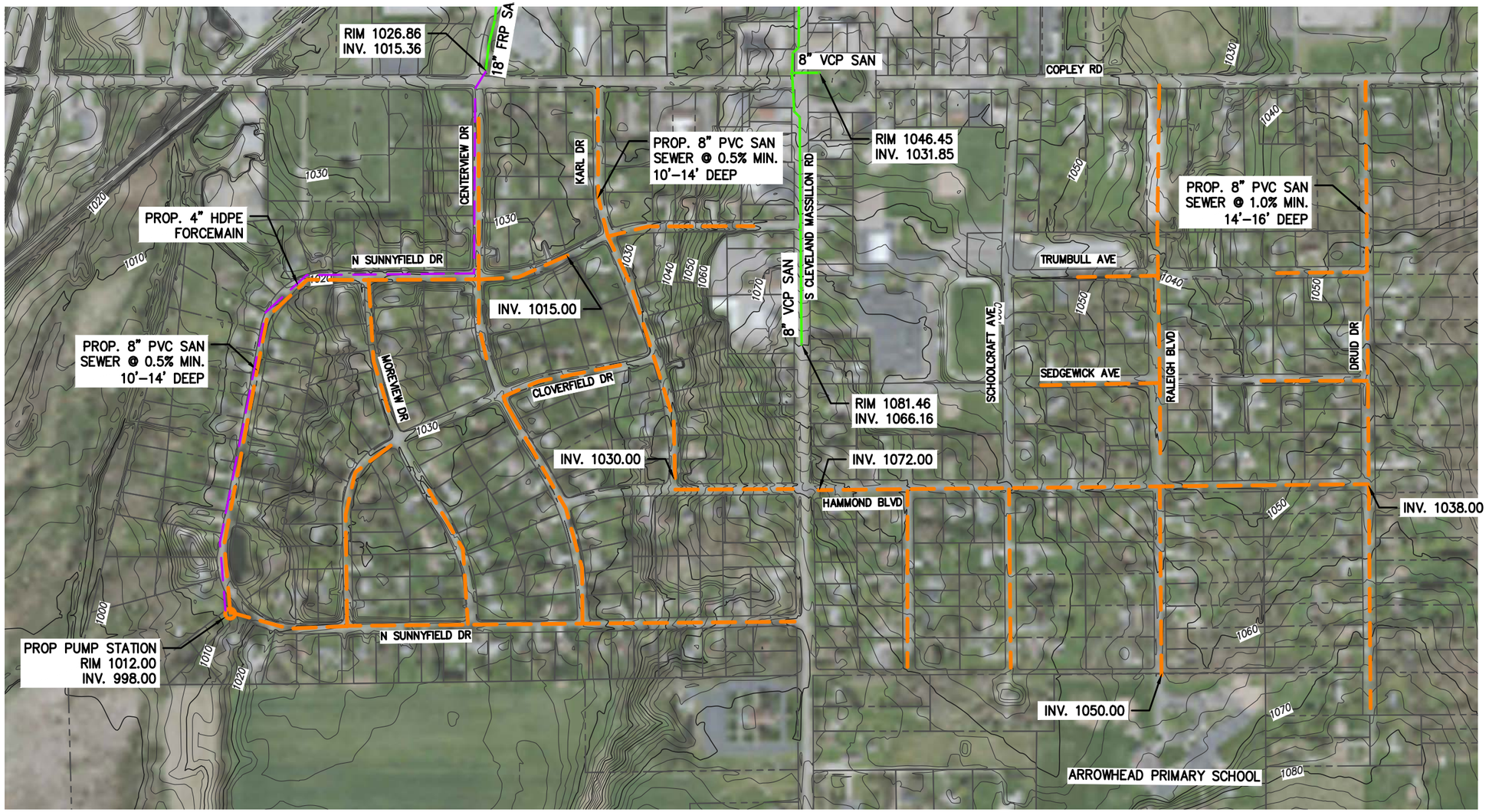
PROPOSED GRAVITY SEWER

EXISTING FORCEMAIN

copley
township
**drinking water &
sanitary sewer**

Environmental Design Group
The community impact people.

PRIORITY SEWER PROJECTS



0 400
GRAPHIC SCALE

COPLEY TOWNSHIP
PROJECTS F & G

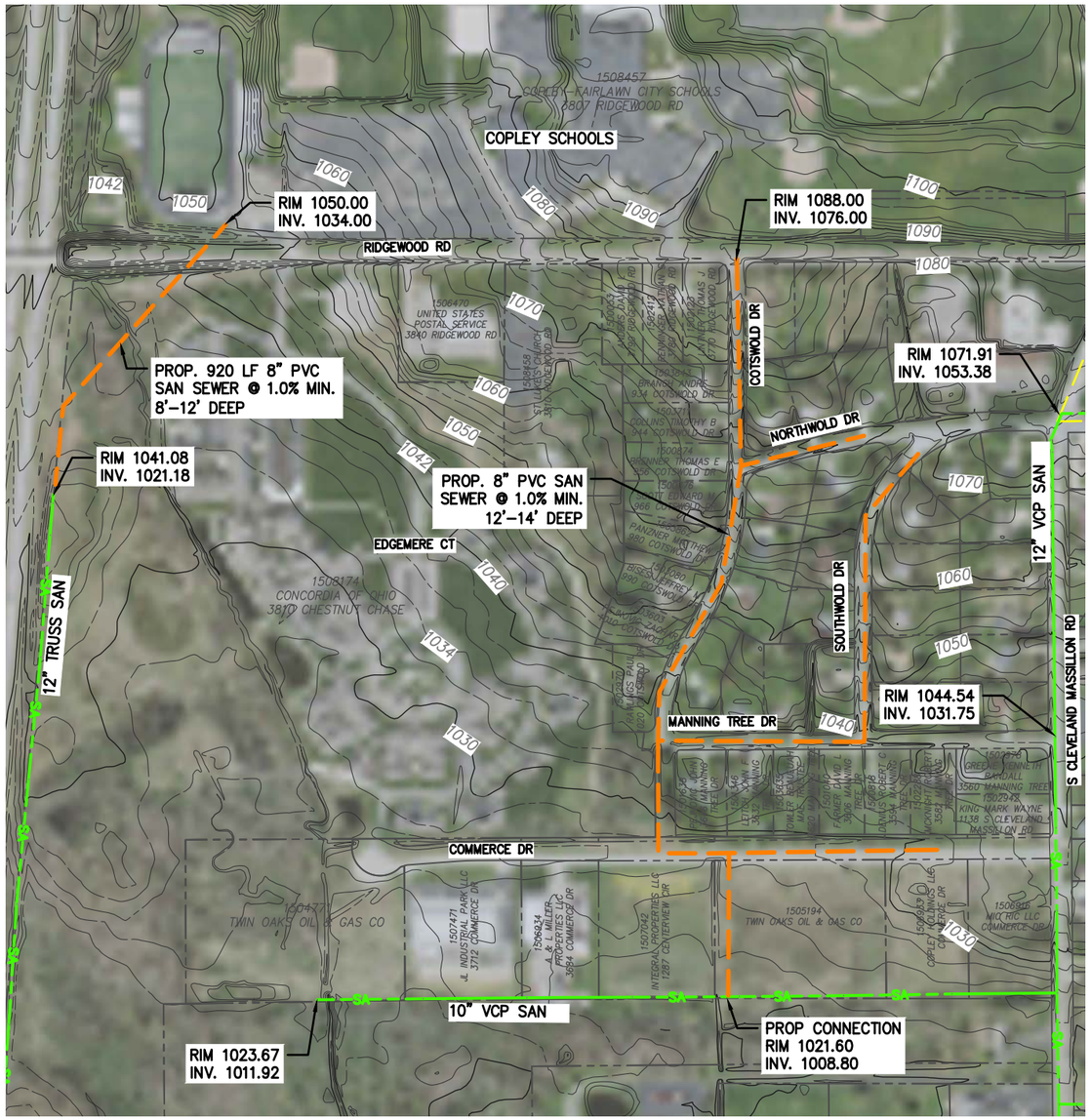
(WEST OF CLE-MAS RD. IS PROJECT #F, EAST OF CLE-MAS RD. IS PROJECT #G)

EXISTING AKRON SEWER
PROPOSED GRAVITY SEWER
PROPOSED FORCEMAIN

copley township
drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY SEWER PROJECTS



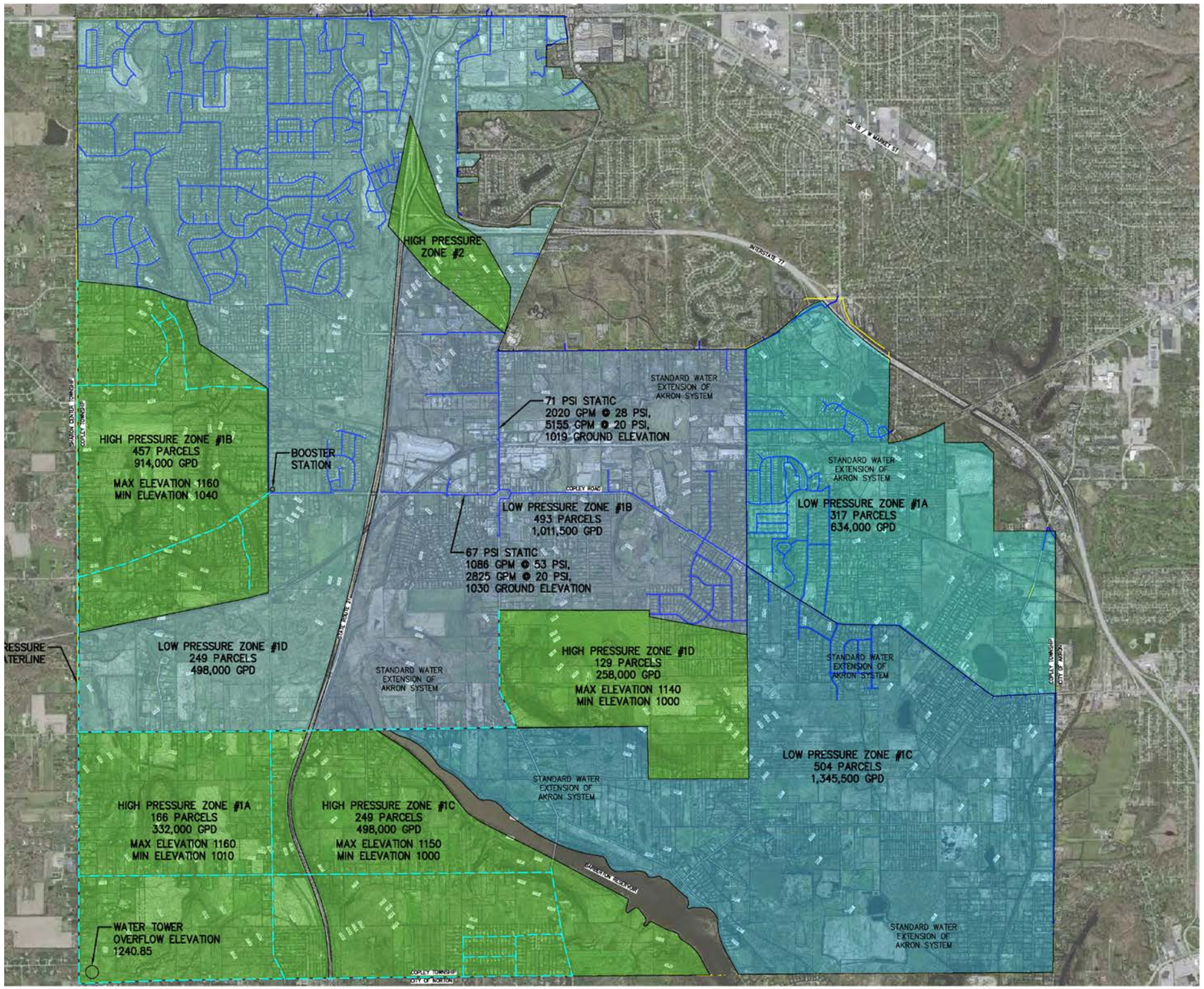
COPLEY TOWNSHIP
SEWER PROJECTS H & I

PROJECT #H IS THE HIGH SCHOOL AND PROJECT #I IS THE DEVELOPMENT TO THE SE OF THE HIGH SCHOOL

0 300
GRAPHIC SCALE

EXISTING AKRON SEWER
PROPOSED GRAVITY SEWER
COPLEY TOWNSHIP BOUNDARY

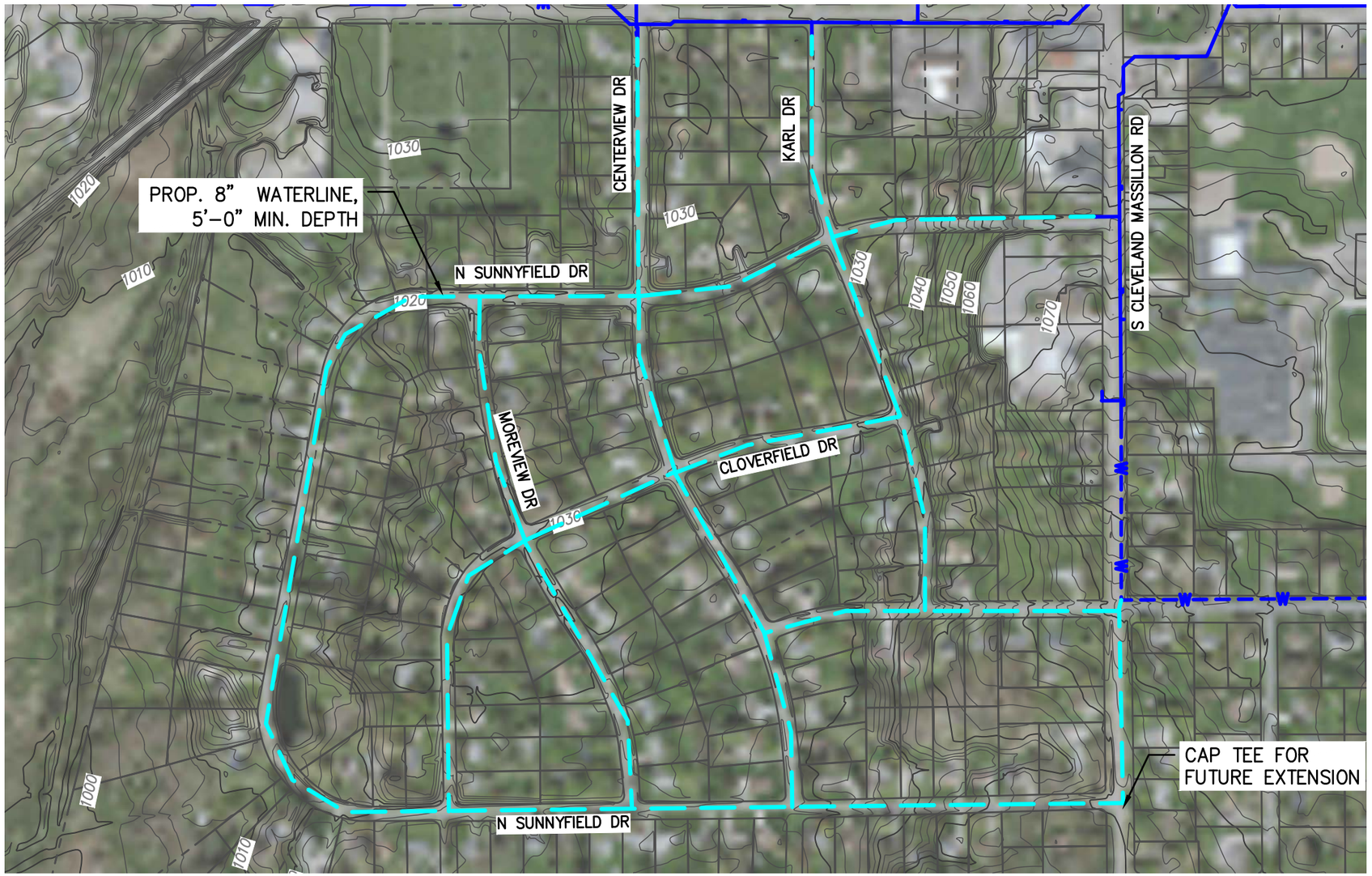
PROPOSED WATER & PRESSURE AREAS



copley township
drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY WATER PROJECTS



0 400
GRAPHIC SCALE

COPLEY TOWNSHIP
WATER PROJECT A
WESTVIEW ESTATES

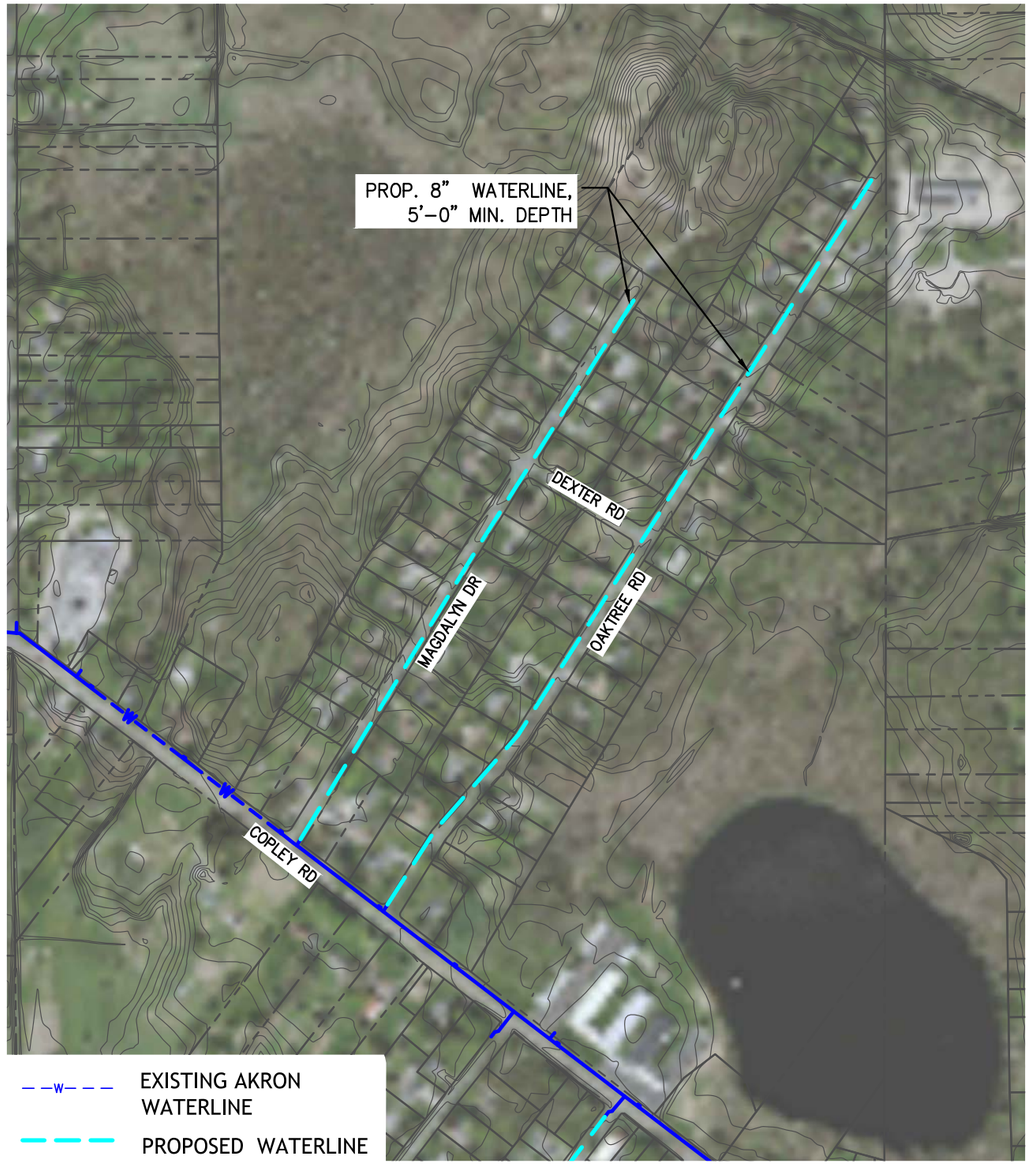
EXISTING AKRON WATERLINE

PROPOSED WATERLINE

copley township
drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY WATER PROJECTS



COPLEY TOWNSHIP
WATER PROJECT B
MAGDALYN / OAKTREE / DEXTER

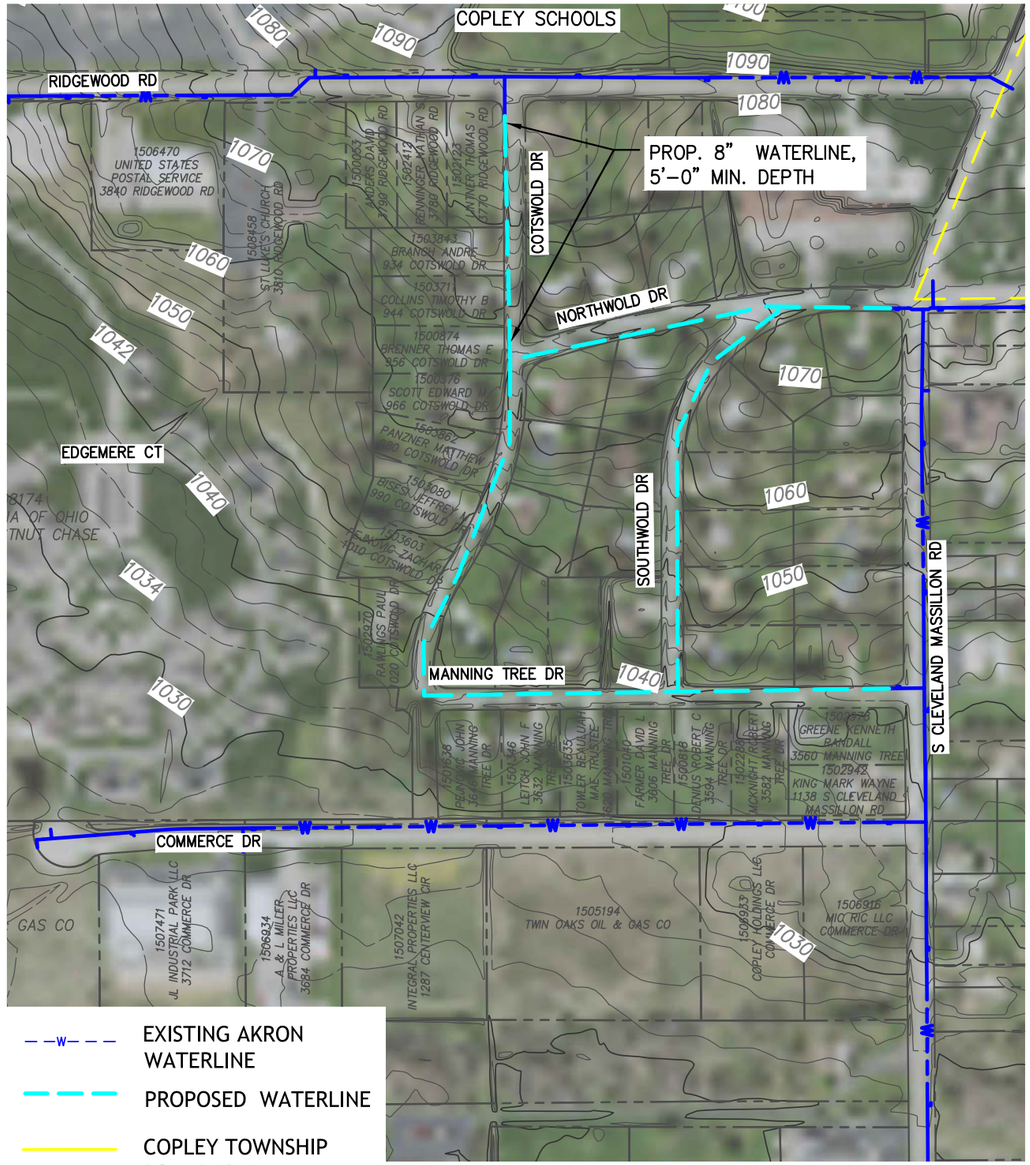
N

0 400
GRAPHIC SCALE

Environmental Design Group
The community impact people.

copley
township
drinking water & sanitary sewer

PRIORITY WATER PROJECTS



EXISTING AKRON WATERLINE

PROPOSED WATERLINE

COPLEY TOWNSHIP BOUNDARY

COPLEY TOWNSHIP
WATER PROJECT C
NORTHWOLD / COTSWOLD DR.

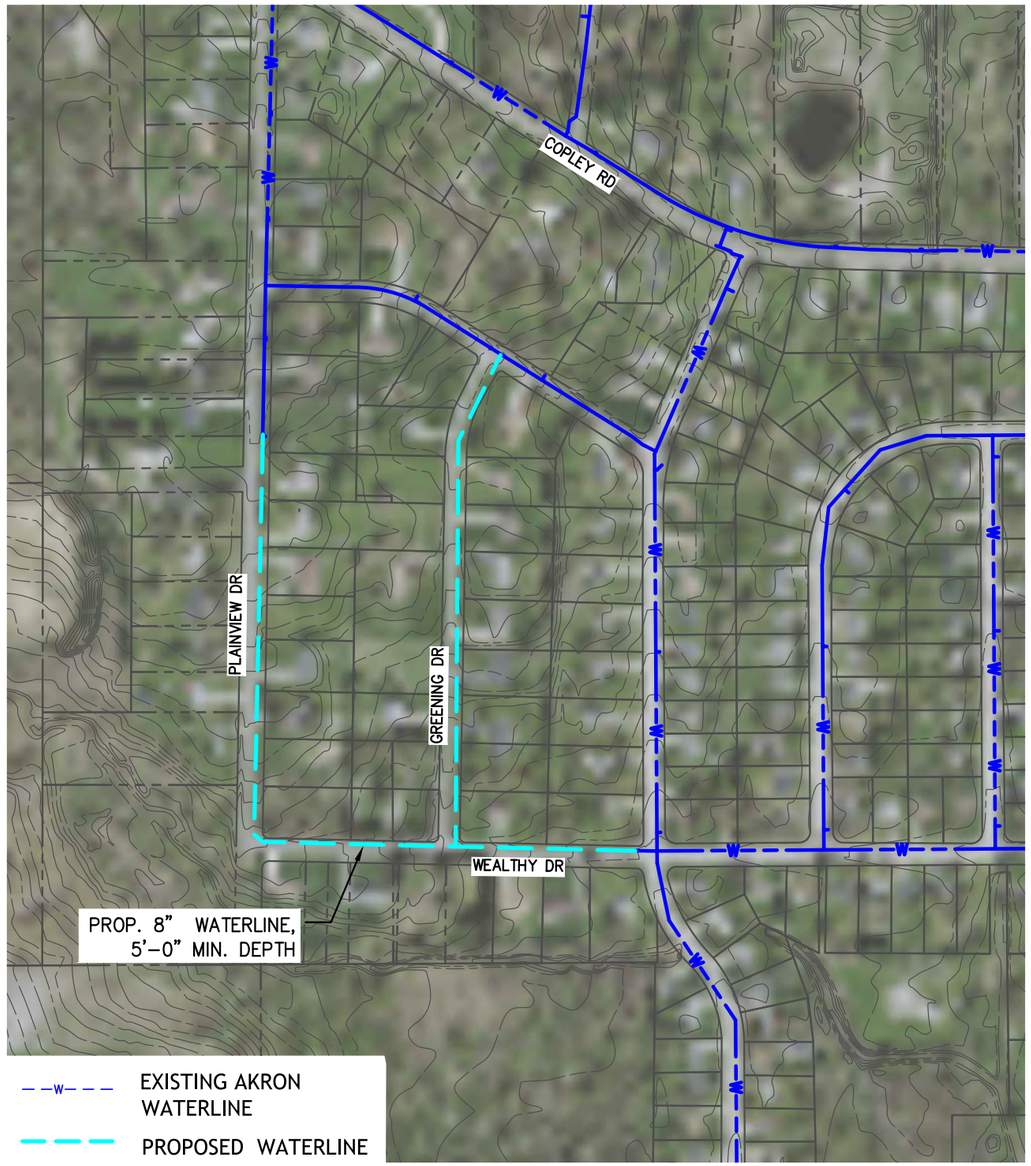
N

0 300
GRAPHIC SCALE

Environmental Design Group
The community impact people.

copley
township
drinking water & sanitary sewer

PRIORITY WATER PROJECTS



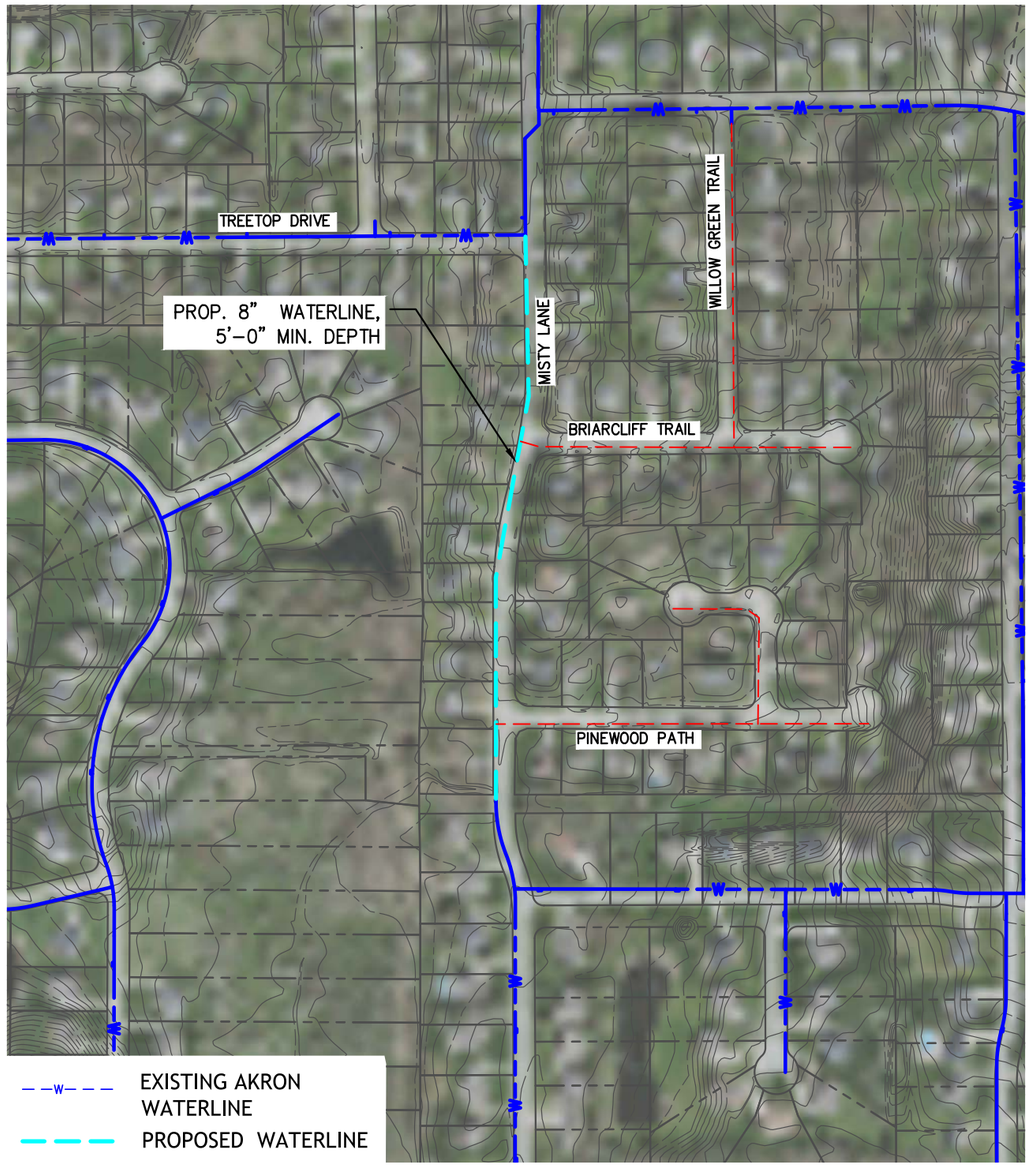
COPLEY TOWNSHIP
WATER PROJECT D
GREENING / WEALTHY / PLAINVIEW

N

0 300
GRAPHIC SCALE

Environmental Design Group
The community impact people.

PRIORITY WATER PROJECTS



COPLEY TOWNSHIP
WATER PROJECT E
MISTY LANE AREA

0 300
GRAPHIC SCALE

Environmental Design Group
The community impact people.

copley
township
drinking water & sanitary sewer

PRIORITY WATER PROJECTS

COPLEY TOWNSHIP
WATER PROJECT F
MILAN AVE

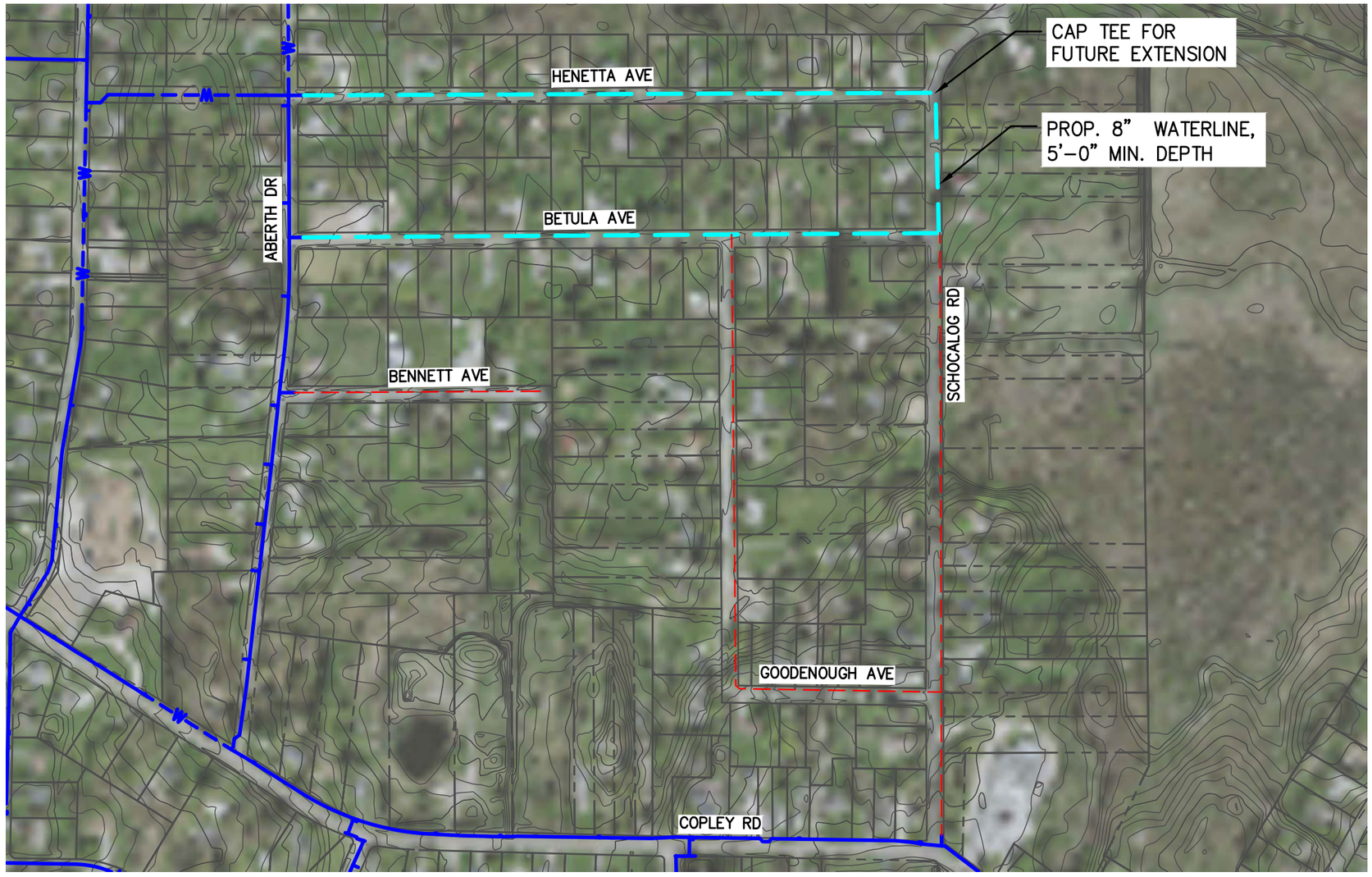
N

0 300
GRAPHIC SCALE

Environmental Design Group
The community impact people.

copley
township
drinking water & sanitary sewer

PRIORITY WATER PROJECTS



COPLEY TOWNSHIP
WATER PROJECT G
HENETTA / SCHOCALOG RD AREA

N

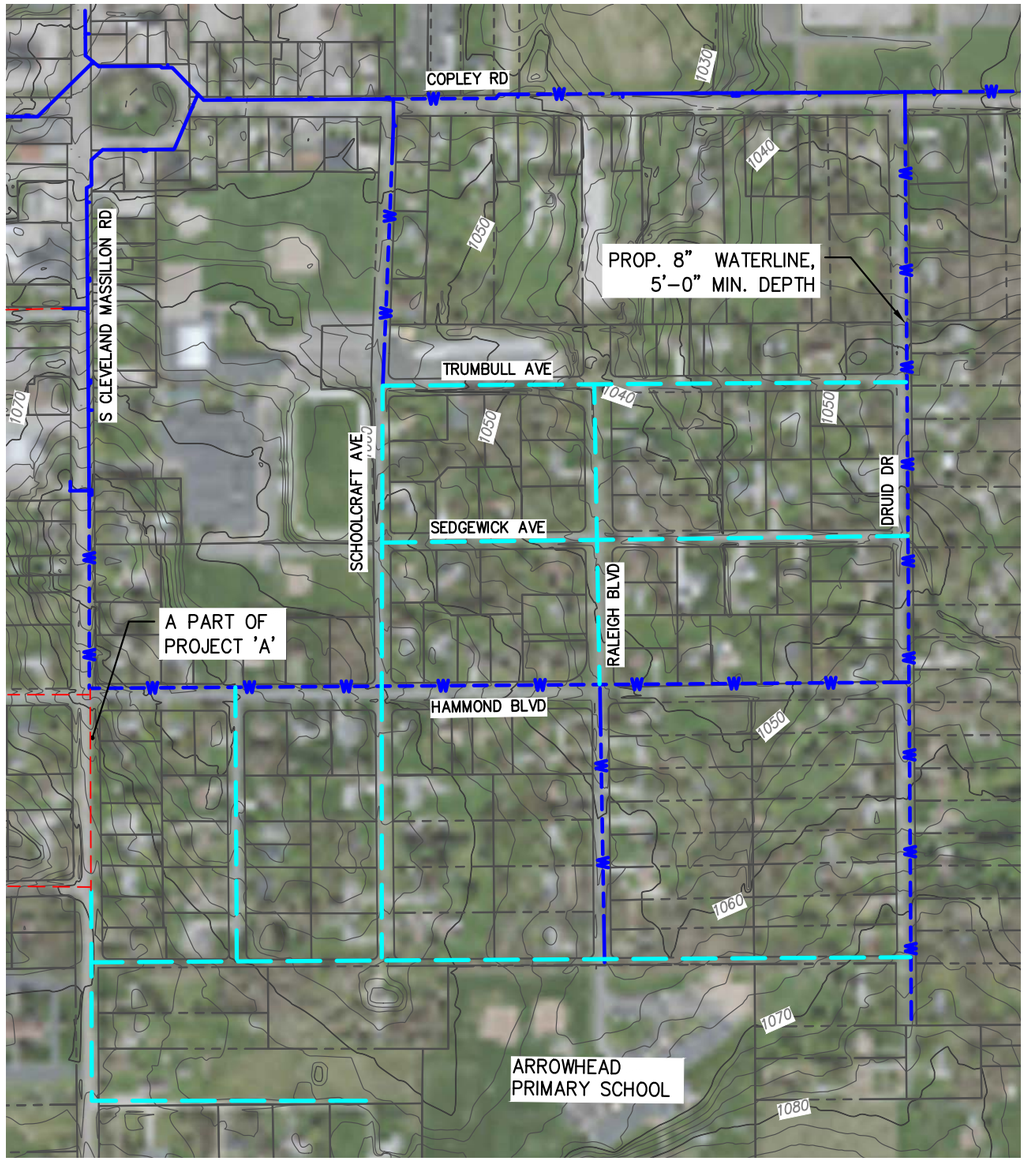
0 400
GRAPHIC SCALE

EXISTING AKRON WATERLINE
PROPOSED WATERLINE
FUTURE WATERLINE

copley township
drinking water & sanitary sewer

Environmental Design Group
The community impact people.

PRIORITY WATER PROJECTS



N

0 400

GRAPHIC SCALE

COPLEY TOWNSHIP
WATER PROJECT H
SE COPLEY CIRCLE

EXISTING AKRON WATERLINE

PROPOSED WATERLINE

PROJECT A

STORMWATER APPENDIX A:

PIGEON CREEK NPS-IS DOCUMENTATION

Pigeon Creek NPS-IS Critical Areas: Project and Implementation Strategy Overview Table

Project Overview Table for Pigeon Creek HUC (05040001 01 02) All Critical Areas							
Critical Area	**Objective**	**Proj. #**	**Project Title (EPA Criteria g)**	**Lead Organization (criteria d)**	**Time Frame (EPA Criteria f)**	**Estimated Cost (EPA Criteria d)**	**Potential/Actual Funding Source (EPA Criteria d)**
Urban Sediment and Nutrient Reduction Strategies*							
1	CA1-All	4	Stormwater Basin Retrofits	Copley Township	3-7 YEARS	$200,000	319, H2Ohio
Altered Stream and Habitat Restoration Strategies*							
1	CA1 – 1, 2	3	Pigeon Creek Oxbow Wetland	Copley Township	1-3 YEARS	$650,000	319, H2Ohio
1	CA1 – 1, 2	5	Copley Ditch Wetland Restoration	Copley Township	3-7 YEARS	$180,000	319, H2Ohio, Clean Ohio
Agricultural Nonpoint Source Reduction Strategies*							
High Quality Waters Protection Strategies*							
Other NPS Causes and Associated Sources of Impairment							

COPLEY'S PIGEON CREEK

OXBOW WETLAND

PROPOSED PROJECT

CRITICAL AREA 1: PROJECT 3 – PIGEON CREEK OXBOW WETLAND		
9- ELEMENT CRITERIA	**INFORMATION NEEDED**	**EXPLANATION**
n/a	Title	Pigeon Creek Oxbow Wetland
D	Proj. Lead Org. & Partners	Copley Township
C	HUC-12 & Critical Area	Pigeon Creek (HUC 05040001 01 02) Critical Area 1 (Schocalog Run and Pigeon Creek to its confluence with Schocalog Run)
C	Location of Project	Pigeon Creek east of SR21. (41.103120, -81. 651900)
n/a	Which strategy is being addressed by this project?	Altered Stream and Habitat Restoration Strategy Nonpoint Source Reduction Strategy
F	Time Frame	Short (1-3 Years)
G	Short Description	Construct approximately 6-acre-feet (4 acres) of water quality treatment wetland(s) with in-stream features to create a 2-stage channel in 800 linear feet of Pigeon Creek. Once constructed, the project will enhance the quality of in-stream and riparian habitat and reduce sediment loads into Critical Area 1.
G	Project Narrative	The project area is directly adjoining Pigeon Creek and a small drainage tributary north of the project (Pigeon Creek at approximately RM 7.45) on unutilized property owned by YRC INC (PPN 1503067). It is upstream of the partially-attaining RM 4.7 sampling location on Pigeon Creek that has seen decline in IBI scores between 2004 and 2017. The project area consists of approximately 800 LF of channelized stream (down the center-line) flowing from SR21, northeast of the YRC, Inc. trucking distribution center (Reddaway Trucking). The stream though this section is recovering from historical channelization and lacks good native riparian cover. The project proposes to create floodplain and restore in-stream habitat and sinuosity to this segment of Pigeon Creek and enhance the streamside habitat with invasive species removal and planting native trees and shrubs. The property, including the project site, will remain under protection and be maintained by Copley Township through a future conservation easement or lease. This project will improve in-stream and riparian habitat along Pigeon Creek within Critical Area 1. This will be achieved by: restoring natural vegetated riparian buffer and restoring sinuosity and reconnecting the floodplain of 800 LF of channelized stream using natural channel design techniques to improve in-stream habitat and reduce downstream sediment transport, erosion and under cutting of the bank. Furthermore, the project will create a 6-acre water quality treatment wetland which will reduce runoff and nutrients entering Pigeon Creek from surrounding existing suburban development. These upstream improvements will also improve downstream habitat and help move Pigeon Creek closer to attainment at the RM 4.7 monitoring location.
D	Estimated Total cost	$650,000

D	Possible Funding Source	Ohio EPA 319, H2Ohio
A	Identified Causes and Sources	Cause: Sedimentation/Siltation Sources: channelization, suburban runoff
B & H	Part 1: How much improvement is needed to remove the NPS impairment associated with this Critical Area?	With the goal being to raise the IBI score from threshold 24 to its 2003 score of 28 or better, and to raise the ICI narrative from "Low Fair" to "Fair" at the RM 4.7 Pigeon Creek monitoring point, reasonable objectives are: • Objective 1. Improve instream habitat by restoring stream using natural channel design features and principles including new technologies. • Objective 2. Improve water quality within Pigeon Creek HUC-12 by reducing sediment entering from the critical area.
	Part 2: How much of the needed improvement for the whole Critical Area is estimated to be accomplished by this project?	• 800 LF of 1,500 LF (53%) of riparian buffer of Objective 1 • 800 LF of 1,500 LF (53%) of petition ditch restoration of Objective 1 • 800 LF of 1,500 LF (53%) of streambank stabilization of Objective 2 • 6 acres of 40 acres (15%) of Objective 2 Goals: There is recognition that there is lag time associated with nonpoint source-related projects and measured stream response. With respect to the goals in Critical Area 1, the main drivers are IBI and ICI scores. Current data shows the RM 4.7 location has an IBI of 24, which is at the threshold for MWH use but is a decline from a 2003-2004 score of 28, and a macroinvertebrate narrative of Low Fair, which is below the Fair threshold for MWH use. It is expected that this project will cause an incremental increase in the IBI and macroinvertebrate scoring to 25 (25% of progress towards the goal) and similar incremental gains for the macroinvertebrate scoring.
	Part 3: Load reduced?	Estimated Reductions: Nitrogen: 45.7 lbs/year Phosphorous: 14.7 lbs/year Sediment: 22.7 tons/year
I	How will the effectiveness of this project in addressing the NPS impairment be measured?	Copley Township will continue to monitor this segment of Pigeon Creek for water quality. Staff from the OEPA-DSW Ecological Assessment Unit will perform both pre and post project monitoring. In addition, the RM 4.7 sampling site will also be monitored (as part of the State's ongoing surface water monitoring program cycle) to determine progress (through IBI, ICI/macroinvertebrate narratives, and QHEI) from partial attainment to full attainment.
E	Information and Education	This project will be promoted with project signage, press releases, newsletter articles, and as an important demonstration project to Suburban land owners who own property along Pigeon Creek.

Pigeon Creek Oxbow Wetland

12/14/2020, 10:45:58 AM

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC

- Spot elevations
- Contours
  - Index
  - Index, Depression
  - Index, Depression, Hidden
  - Index, Hidden
  - Intermediate
  - Intermediate, Depression
  - Intermediate, Depression, Hidden
  - Intermediate, Hidden
- Parcels
- Summit County Municipal Outlines
- Summit Lakes and Ponds
- SummitRivers

Web AppBuilder for ArcGIS

COPLEY'S PIGEON CREEK

STORMWATER BASIN RETROFITS WEST OF SR 21

PROPOSED PROJECT(S)

CRITICAL AREA 1: PROJECT 4 – STORMWATER BASIN RETROFITS WEST OF SR21		
9- ELEMENT CRITERIA	**INFORMATION NEEDED**	**EXPLANATION**
n/a	Title	Stormwater Basin Retrofits West of SR21
D	Proj. Lead Org. & Partners	Copley Township
C	HUC-12 & Critical Area	Pigeon Creek (HUC 05040001 01 02) Critical Area 1 (Pigeon Creek north of SR83)
C	Location of Project	Pigeon Creek (41.11436, -81.67438)
n/a	Which strategy is being addressed by this project?	Nonpoint Source Reduction Strategy
F	Time Frame	Mid-term (3-7 Years)
G	Short Description	Retrofit four wet ponds with wetland shelves or into wetlands, which would increase flood storage and reduce pollutants from surrounding suburban development entering Pigeon Creek. Construct approximately 2 acres of water quality treatment wetland(s) or wetland shelves within wet ponds of Pigeon Creek north of SR21. Once constructed, the project will enhance the quality of in-stream and riparian habitat and reduce sediment loads into Critical Area 1.
G	Project Narrative	There are over 77 unique stormwater management basins in this Critical area within Copley Township, of which 38 (49%) are west of SR21. Each of these are for the residential subdivisions, are mainly wet ponds without riparian edges. With most basins constructed between 1990 and 2010 in this critical area, the basins are not providing today's standard of water quality or quantity to improve the watershed. Copley Township would work with HOAs and private homeowners to modify at least 5 basins into wetlands or include wetland shelves. Copley Township has a listing of these basins, their age and construction information. This area is upstream of the partially-attaining RM 4.7 sampling location on Pigeon Creek that has seen decline in IBI scores between 2004 and 2017. The project area consists of approximately 1.48 miles of channelized stream (down the center-line) flowing from the headwaters near Ridgecrest Drive southeast to SR21. The stream though this section is recovering from historical channelization and lacks good native riparian cover. The project proposes to create riparian habitat and improve water quality to this segment of Pigeon Creek and enhance the streamside habitat with stormwater basin conversion and planting native trees and shrubs. The property(s) will be under protection and be maintained by Copley Township through a future conservation easement or lease. This project will improve in-stream and riparian habitat along Pigeon Creek within Critical Area 1. This will be achieved by: restoring natural vegetated riparian buffer and reduce downstream sediment transport, erosion and under cutting of the bank of existing stormwater wet ponds and Pigeon Creek at their outfalls. Furthermore, the project will create 2-acres of water quality treatment wetland or wetland shelves which will reduce runoff and nutrients entering Pigeon Creek from surrounding existing suburban development. These upstream improvements

		will also improve downstream habitat and help move Pigeon Creek closer to attainment at the RM 4.7 monitoring location.
D	Estimated Total cost	$200,000
D	Possible Funding Source	Ohio EPA 319, H2Ohio, NFWF Five Star,
A	Identified Causes and Sources	Cause: Sedimentation/Siltation Sources: channelization, suburban runoff
B & H	Part 1: How much improvement is needed to remove the NPS impairment associated with this Critical Area?	With the goal being to raise the IBI score from threshold 24 to its 2003 score of 28 or better, and to raise the ICI narrative from "Low Fair" to "Fair" at the RM 4.7 Pigeon Creek monitoring point, reasonable objectives are: • Objective 2. Improve water quality within Pigeon Creek HUC-12 by reducing sediment entering from the critical area.
	Part 2: How much of the needed improvement for the whole Critical Area is estimated to be accomplished by this project?	• 2 acres of 40 acres (5%) of Objective 2 Goals: There is recognition that there is lag time associated with nonpoint source-related projects and measured stream response. With respect to the goals in Critical Area 1, the main drivers are IBI and ICI scores. Current data shows the RM 4.7 location has an IBI of 24, which is at the threshold for MWH use but is a decline from a 2003-2004 score of 28, and a macroinvertebrate narrative of Low Fair, which is below the Fair threshold for MWH use. It is expected that this project will cause an incremental increase in the IBI and macroinvertebrate scoring to 24.2 (2% of progress towards the goal) and similar incremental gains for the macroinvertebrate scoring.
	Part 3: Load reduced?	Estimated Reductions: Nitrogen: 15.3 lbs/year Phosphorous: 9.02 lbs/year Sediment: 12.4 tons/year
I	How will the effectiveness of this project in addressing the NPS impairment be measured?	Copley Township will continue to monitor this segment of Pigeon Creek for water quality. Staff from the OEPA-DSW Ecological Assessment Unit will perform both pre and post project monitoring. In addition, the RM 4.7 sampling site will also be monitored (as part of the State's ongoing surface water monitoring program cycle) to determine progress (through IBI, ICI/macroinvertebrate narratives, and QHEI) from partial attainment to full attainment.
E	Information and Education	This project will be promoted with HOA newsletter articles, Volunteer Planting Days, interview with the homeowners on local news/internet news and as an important demonstration project to Suburban land owners who own stormwater wet ponds along Pigeon Creek.

Copley Ditch Restoration

12/16/2020, 5:29:17 PM

- Spot elevations
- Contours
  - Index
  - Index, Depression
  - Index, Depression, Hidden
  - Index, Hidden
  - Intermediate

1:2,257

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.09 km

GeoEye, Maxar, Microsoft, Esri, HERE, Garmin, iPC

COPLEY'S PIGEON CREEK
DITCH FLOODPLAIN RESTORATION
PROPOSED PROJECT(S)

CRITICAL AREA 2: PROJECT 5 – COPLEY DITCH FLOODPLAIN RESTORATION		
9- ELEMENT CRITERIA	**INFORMATION NEEDED**	**EXPLANATION**
n/a	Title	Copley Ditch Floodplain Restoration
D	Proj. Lead Org. & Partners	Copley Township
C	HUC-12 & Critical Area	Pigeon Creek (HUC 05040001 01 02) Critical Area 2 (Copley Ditch upstream of Panzner Wetland Wildlife Reserve)
C	Location of Project	Copley Ditch (41. 08356, -81.60846)
n/a	Which strategy is being addressed by this project?	Altered Stream and Habitat Restoration Strategy Nonpoint Source Reduction Strategy
F	Time Frame	Mid-term (3-7 Years)
G	Short Description	Construct approximately 2-acre-feet (2 acres) of water quality treatment wetland(s) with in-stream features to create a 2-stage channel in 500 linear feet of Copley Ditch to improve water quality before entering the Panzner Wetland Wildlife Reserve through groundwater. Once constructed, the project will enhance the quality of in-stream and riparian habitat and improve groundwater into Critical Area 2.
G	Project Narrative	There are three potential parcels for this project, which contains Copley Ditch upstream of Panzner Wetland. The project could be constructed at one of the three sites with the similar result. Option A is the Ohio Sportsman Club gun range (Copley Ditch at approximately RM 3) on underutilized property owned by OHIO SPORTSMAN FARMERS LEAGUE INC (PPN 1507041). Option B is a vacant forested property owned by Jacoby Company (PPN 1501735). Option C is the vacant portions of a parcel with a sanitary pump station owned by the City of Akron (PPN 1500170). It is upstream of the partially-attaining RM 0 sampling location on Wolf Creek where Pigeon Creek converges that has seen decline in IBI scores between 2004 and 2017. The project area consists of approximately 500 LF of channelized stream (down the center-line) flowing from west to east, between Jacoby Road and Orchardview Drive. The stream though this section is recovering from historical channelization and lacks good native riparian cover. The project proposes to create floodplain and restore in-stream habitat and sinuosity to this segment of Copley Ditch and enhance the streamside habitat with invasive species removal and planting native trees and shrubs. The properties, including the project site, will remain under protection and be maintained by Copley Township through a future conservation easement or lease or for Option C, Copley Township would work with the City of Akron on an easement. This project will improve in-stream and riparian habitat along Copley Ditch within Critical Area 2. This will be achieved by: restoring natural vegetated riparian buffer and restoring sinuosity and reconnecting the floodplain of 500 LF of channelized stream using natural channel design techniques to improve in-stream habitat and reduce downstream sediment transport, erosion and under cutting of the bank. Furthermore, the project will create a 2.0-acre water quality treatment wetland

		which will reduce runoff and nutrients entering Copley Ditch from surrounding existing suburban development. These upstream improvements will also improve downstream habitat and help move Wolf Creek/Pigeon Creek closer to attainment at the RM 0 monitoring location.
D	Estimated Total cost	$180,000
D	Possible Funding Source	Ohio EPA 319, H2Ohio, Clean Ohio
A	Identified Causes and Sources	Cause: Sedimentation/Siltation Sources: channelization, suburban runoff
B & H	Part 1: How much improvement is needed to remove the NPS impairment associated with this Critical Area?	With the goal being to raise the IBI score from threshold 24 to its 2003 score of 30 or better, and to raise the ICI narrative from "Low Fair" to "Fair" at the RM 0 Wolf Creek/Pigeon Creek monitoring point, reasonable objectives are: • Objective 1. Improve instream habitat by restoring stream using natural channel design features and principles including new technologies. • Objective 2. Improve water quality within Pigeon Creek HUC-12 by reducing sediment entering from the critical area.
	Part 2: How much of the needed improvement for the whole Critical Area is estimated to be accomplished by this project?	• 500 LF of 1,500 LF (33%) of riparian buffer of Objective 1 • 500 LF of 1,500 LF (33%) of petition ditch restoration of Objective 1 • 500 LF of 1,500 LF (33%) of streambank stabilization of Objective 2 • 2.0 acres of 40 acres (6%) of Objective 2 Goals: There is recognition that there is lag time associated with nonpoint source-related projects and measured stream response. With respect to the goals in Critical Area 2, the main drivers are IBI and ICI scores. Current data shows the RM 0 location has an IBI of 24, which is at the threshold for MWH use but is a decline from a 2003-2004 score of 30, and a macroinvertebrate narrative of Low Fair, which is below the Fair threshold for MWH use. It is expected that this project will cause an incremental increase in the IBI and macroinvertebrate scoring to 24.5 (25% of progress towards the goal) and similar incremental gains for the macroinvertebrate scoring.
	Part 3: Load reduced?	Estimated Reductions: Nitrogen: 12.5 lbs/year, Phosphorous: 4.45 lbs/year, Sediment: 1.16 tons/year
I	How will the effectiveness of this project in addressing the NPS impairment be measured?	Copley Township will continue to monitor this segment of Copley Ditch, Wolf Creek/Pigeon Creek for water quality. Staff from the OEPA-DSW Ecological Assessment Unit will perform both pre and post project monitoring. In addition, the RM 4.7 sampling site will also be monitored (as part of the State's ongoing surface water monitoring program cycle) to determine progress (through IBI, ICI/macroinvertebrate narratives, and QHEI) from partial attainment to full
E	Information and Education	This project will be promoted with project signage, press releases, newsletter articles, and as an important demonstration project to Suburban land owners who own property along Pigeon Creek & Copley Ditch.

Pigeon Creek: Stormwater Retrofits

A typical wet pond (left) can be transformed into a beautiful water quality wetland or pond with wetland shelf (below photos).

STORMWATER APPENDIX B:

WOLF CREEK NPS-IS DOCUMENTATION

Wolf Creek NPS-IS Critical Areas: Project and Implementation Strategy Overview Table

Figure 24: Wolf Creek Huc 12 (05040001-01-04) – Critical Area #1							
Goal	**Objective**	**Proj. #**	**Project Title (EPA Criteria g)**	**Lead Organization (criteria d)**	**Time Frame (EPA Criteria f)**	**Estimated Cost (EPA Criteria d)**	**Potential/Actual Funding Source (EPA Criteria d)**
Urban Sediment and Nutrient Reduction Strategies*							
Altered Stream and Habitat Restoration Strategies*							
6,7	2,3	3	Barberton Reservoir - North: Riparian Enhancement	Copley Township	1-3 YEARS	$350,000	319, H2Ohio
6,7	2,3	4	Barberton Reservoir - South: Floodplain Wetland	Copley Township	1-3 YEARS	$500,000	319, H2Ohio
Agricultural Nonpoint Source Reduction Strategies*							
High Quality Waters Protection Strategies*							
Other NPS Causes and Associated Sources of Impairment							

COPLEY'S WOLF CREEK

BARBERTON RESERVOIR – NORTH RIPARIAN ENHANCEMENT

PROPOSED PROJECT(S)

CRITICAL AREA 1: PROJECT 3 – Barberton Reservoir -North: Riparian Enhancement		
9- ELEMENT CRITERIA	**INFORMATION NEEDED**	**EXPLANATION**
n/a	Title	Barberton Reservoir -North: Riparian Enhancement
D	Proj. Lead Org. & Partners	Copley Township
C	HUC-12 & Critical Area	Wolf Creek (HUC 12) Critical Area 1
C	Location of Project	Wolf Creek north of the Barberton Reservoir (41.08757, -81.67545)
n/a	Which strategy is being addressed by this project?	Altered Stream and Habitat Restoration Strategy
F	Time Frame	Short (1-3 Years)
G	Short Description	Construct a 7.8 -acre water quality treatment wetland north of the Stinson Ditch tributary to the Barberton Reservoir. Once constructed, the project will enhance the quality of in-reservoir and riparian habitat and reduce sediment and reduce erosion within Critical Area 1.
G	Project Narrative	The project area is directly adjoining Barberton Reservoir and a small drainage tributary east of the project (Wolf Creek at approximately RM 9.2) on farmland. It is upstream of the Barberton Reservoir, a drinking source for the City of Barberton. In 1998, this area was identified as Critical Disturbed Habitat of the Wolf Creek watershed in the Watershed Action Plan. The stream though this section is recovering from historical channelization and lacks good native riparian cover. The project proposes to create floodplain flood storage, reducing sediment from entering Barberton Reservoir, and planting native trees and shrubs. The property, including the project site, will remain under protection and be maintained by Copley Township through a future conservation easement or lease. This project will improve riparian habitat along Wolf Creek within Critical Area 1. This will be achieved by: restoring natural vegetated riparian buffer and reconnecting the floodplain using natural floodplain wetland design techniques to reduce downstream sediment transport, erosion and under cutting of the banks. Furthermore, the project will create a 7.8-acre water quality treatment wetland which will reduce runoff and nutrients entering Barberton Reservoir from surrounding existing suburban development. These upstream improvements will also improve downstream habitat and help move Wolf Creek closer to attainment at the RM 0 monitoring location.
D	Estimated Total cost	$350,000

D	Possible Funding Source	Ohio EPA 319, H2Ohio, WRRSP
A	Identified Causes and Sources	Cause: Sedimentation/Siltation Sources: channelization, suburban runoff
B & H	Part 1: How much improvement is needed to remove the NPS impairment associated with this Critical Area?	With the goal being to maintain the IBI score at the RM 0 Wolf Creek monitoring point, reasonable objectives are: • Objective 3. Improve water quality within Wolf Creek HUC-12 by reducing sediment entering from the critical area.
	Part 2: How much of the needed improvement for the whole Critical Area is estimated to be accomplished by this	Objective #3: This project will restore 7.8 acres of floodplain wetland storage (6% of goal). The project is estimated to raise the QHEI by at least 0.5 points from a 44.8 to a 45.3.
	Part 3: Load reduced?	Nitrogen: 79.5 lbs/year; Phosphorous: 30.4 lbs/year , Sediment: 40.4 tons/year
I	How will the effectiveness of this project in addressing the NPS impairment be measured?	Copley Township will monitor this segment of Wolf Creek for water quality. Staff from the OEPA-DSW Ecological Assessment Unit will perform both pre and post project monitoring. In addition, the Barberton supplemental groundwater well sampling sites will also be monitored (as part of the State's ongoing surface water monitoring program cycle) to determine progress (through IBI, ICI, and QHEI) from partial attainment to full attainment.
E	Information and Education	This project will be promoted with HOA newsletter articles, Volunteer Planting Day, interview with the homeowners on local news/internet news and as an important demonstration project to Suburban/rural land owners along Wolf Creek.

Wolf Creek: North Opt. A

12/17/2020, 4:56:10 PM

1:4,514

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC

Spot elevations

Contours

Index

Index, Depression

Index, Depression, Hidden

Index, Hidden

Intermediate

Intermediate, Depression

Intermediate, Depression, Hidden

Intermediate, Hidden

Parcels

RoadCenterlines2019

103 County Road

Summit County Municipal Outlines

Wolf Creek: North Opt. B

12/17/2020, 5:13:20 PM

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

- Spot elevations

Contours

- Index
- Index, Depression
- Index, Depression, Hidden
- Index, Hidden
- Intermediate
- Intermediate, Depression
- Intermediate, Depression, Hidden
- Intermediate, Hidden
- Parcels

RoadCenterlines2019

- County Road
- Summit County Municipal Outlines

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC

Wolf Creek: North Opt. C

12/17/2020, 5:16:48 PM

1:4,514

0 0.04 0.09 0.17 mi

0 0.05 0.1 0.2 km

Spot elevations

Contours

Index

Index, Depression

Index, Depression, Hidden

Index, Hidden

Intermediate

Intermediate, Depression

Intermediate, Depression, Hidden

Intermediate, Hidden

Parcels

RoadCenterlines2019

Township Road

County Road

Summit County Municipal Outlines

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC

COPLEY'S PIGEON CREEK

BARBERTON RESERVOIR – SOUTH RIPARIAN ENHANCEMENT

PROPOSED PROJECT(S)

CRITICAL AREA 1: PROJECT 4 – Barberton Reservoir -South: Floodplain Wetland		
9- ELEMENT CRITERIA	**INFORMATION NEEDED**	**EXPLANATION**
n/a	Title	Barberton Reservoir -South: Floodplain Wetland
D	Proj. Lead Org. & Partners	Copley Township
C	HUC-12 & Critical Area	Wolf Creek (HUC 12) Critical Area 1
C	Location of Project	Wolf Creek South/Middle of the Barberton Reservoir (41.07390, -81.64372)
n/a	Which strategy is being addressed by this project?	Altered Stream and Habitat Restoration Strategy
F	Time Frame	Short (1-3 Years)
G	Short Description	Construct a 4-acre water quality treatment wetland north of the Barberton Reservoir near Cleveland Massillon Road. Once constructed, the project will enhance the quality of in-reservoir and riparian habitat and reduce sediment and reduce erosion within Critical Area 1.
G	Project Narrative	The project area is directly adjoining Barberton Reservoir, north near Summit Road and Cleveland Massillon Road (Wolf Creek at approximately RM 6.6) on farmland. It is upstream of the Barberton Reservoir, a drinking source for the City of Barberton. The project proposes to create floodplain flood storage, reducing sediment from entering Barberton Reservoir, and planting native trees and shrubs. The property, including the project site, will remain under protection and be maintained by Copley Township through a future conservation easement or lease. This project will improve riparian habitat along Wolf Creek within Critical Area 1. This will be achieved by: restoring natural vegetated riparian buffer and reconnecting the floodplain using natural floodplain wetland design techniques to reduce downstream sediment transport, erosion and under cutting of the banks. Furthermore, the project will create a 4-acre water quality treatment wetland which will reduce runoff and nutrients entering Barberton Reservoir from surrounding existing suburban development. These upstream improvements will also improve downstream habitat and help move Wolf Creek closer to attainment at the RM 0 monitoring location.
D	Estimated Total cost	$500,000
D	Possible Funding Source	Ohio EPA 319, H2Ohio, WRRSP

A	Identified Causes and Sources	Cause: Sedimentation/Siltation Sources: channelization, suburban runoff
B & H	Part 1: How much improvement is needed to remove the NPS impairment associated with this Critical Area?	With the goal being to maintain the IBI score at the RM 0 Wolf Creek monitoring point, reasonable objectives are: • Objective 3. Improve water quality within Wolf Creek HUC-12 by reducing sediment entering from the critical area.
	Part 2: How much of the needed improvement for the whole Critical Area is estimated to be accomplished by this project?	Objective #3: This project will restore 7.8 acres of floodplain wetland storage (6% of goal). The project is estimated to raise the QHEI by at least 0.5 points from a 44.8 to a 45.3.
	Part 3: Load reduced?	Nitrogen: 79.5 lbs/year; Phosphorous: 30.4 lbs/year , Sediment: 40.4 tons/year
I	How will the effectiveness of this project in addressing the NPS impairment be measured?	Copley Township will monitor this segment of Wolf Creek for water quality. Staff from the OEPA-DSW Ecological Assessment Unit will perform both pre and post project monitoring. In addition, the Barberton supplemental groundwater well sampling sites will also be monitored (as part of the State's ongoing surface water monitoring program cycle) to determine progress (through IBI, ICI, and QHEI) from partial attainment to full attainment.
E	Information and Education	This project will be promoted with HOA newsletter articles, Volunteer Planting Day, interview with the homeowners on local news/internet news and as an important demonstration project to Suburban/rural land owners along Wolf Creek.

Wolf Creek: South Opt. A

12/17/2020, 4:59:51 PM

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

Spot elevations

Contours

Index

Index, Depression

Index, Depression, Hidden

Index, Hidden

Intermediate

Intermediate, Depression

Intermediate, Depression, Hidden

Intermediate, Hidden

Parcels

RoadCenterlines2019

Township Road

County Road

Summit County Municipal Outlines

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC

Wolf Creek: South Opt.B

12/17/2020, 5:01:12 PM

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

Spot elevations

Contours

- Index
- Index, Depression
- Index, Depression, Hidden
- Index, Hidden
- Intermediate
- Intermediate, Depression
- Intermediate, Depression, Hidden
- Intermediate, Hidden

Parcels

RoadCenterlines2019

- Township Road
- County Road

Summit County Municipal Outlines

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC

Wolf Creek: South Opt. C

12/17/2020, 5:08:02 PM

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

Spot elevations

Contours

Index

Index, Depression

Index, Depression, Hidden

Index, Hidden

Intermediate

Intermediate, Depression

Intermediate, Depression, Hidden

Intermediate, Hidden

Parcels

RoadCenterlines2019

Township Road

County Road

Summit County Municipal Outlines

USDA FSA, GeoEye, Maxar, Esri, HERE, Garmin, iPC