

Greater Cleveland Trails and Greenways Conference June 6th, 2012

Data, GIS, and Maps: Tools for Driving Trail Progress

Presenters

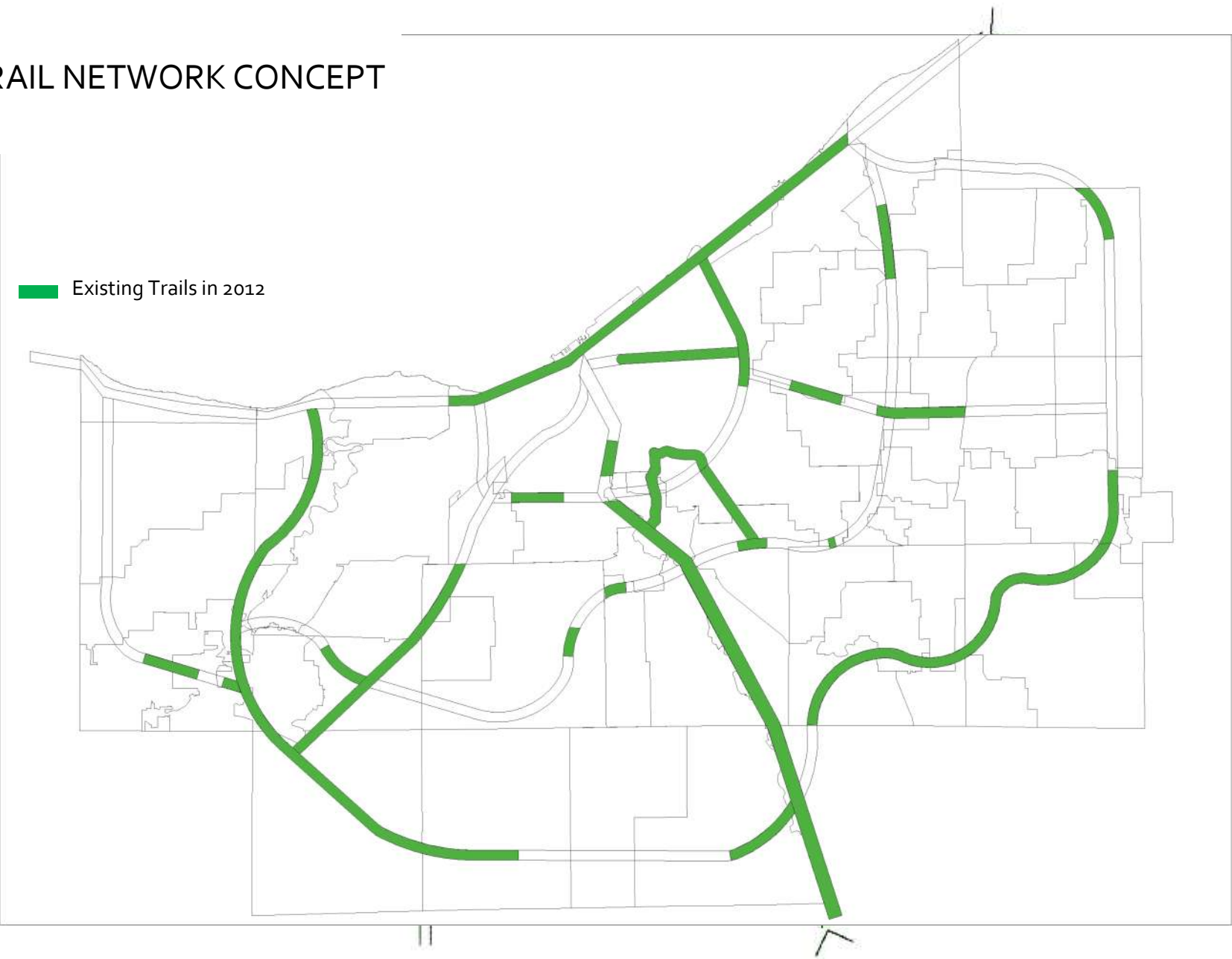
- Dan Meaney: Cuyahoga County Planning
- Marc Von Allmen: Northeast Ohio Areawide Coordinating Agency
- Steve Mather: Cleveland Metroparks

Presentation Overview

- Current state of Northeast Ohio bikeway network
- Regional bikeway inventory
- Inventory & data as an evaluation tool
- Inventory & data as an exploration tool
- Questions and comments

Current State of Northeast Ohio Bikeway Network

TRAIL NETWORK CONCEPT



- Multi
- On-Road
- Mixed

EXISTING BIKEWAYS



Existing Trails By Type, 2012

- Multi
- On-Road
- Mixed

EXISTING BIKEWAYS

186 Miles Total

35 Miles Constructed Since 2002

Constructed since 2002

Since 2010

Fulton Road

Shaker Median

Harvard Ave

Kerruish Park

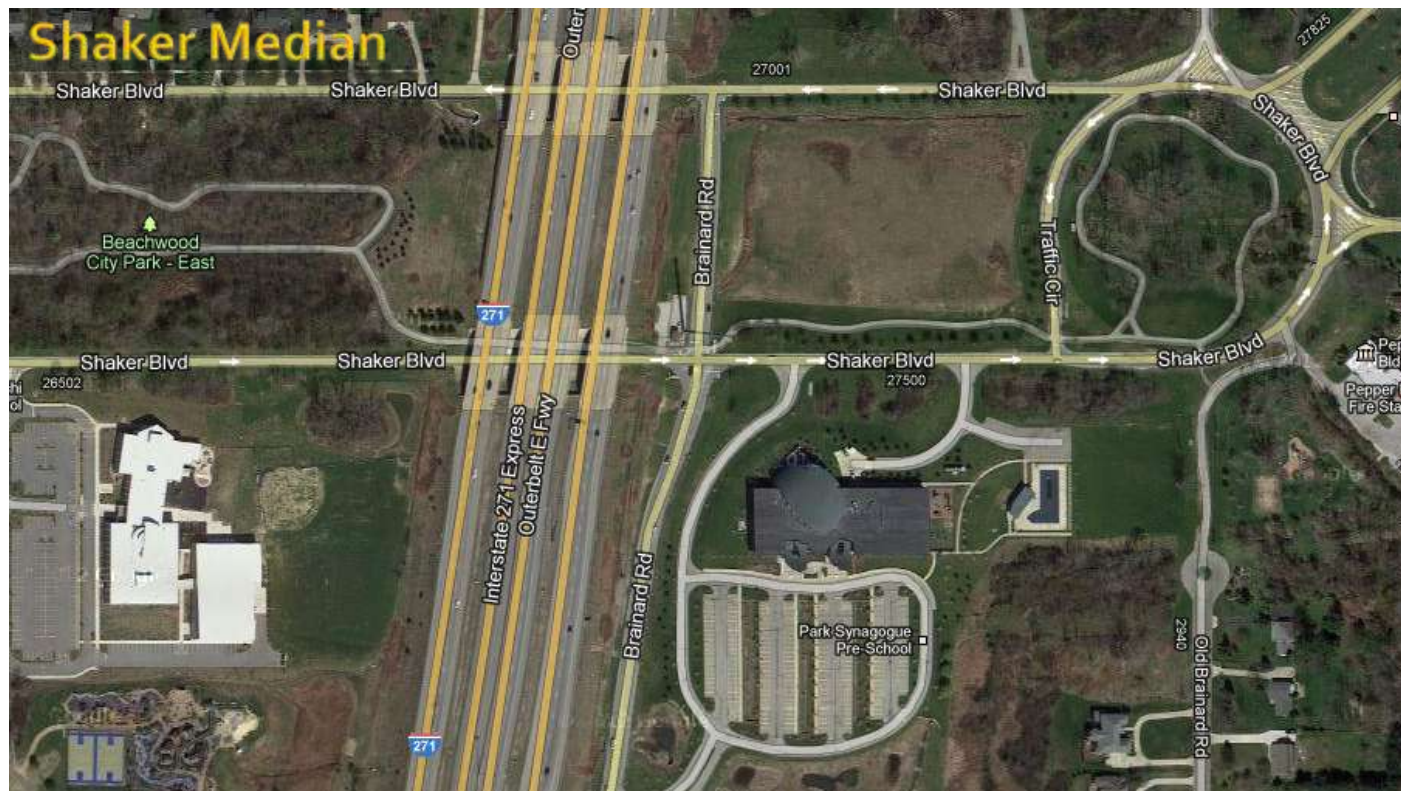
Recently Completed ...



Recently Completed ...



Recently Completed ...



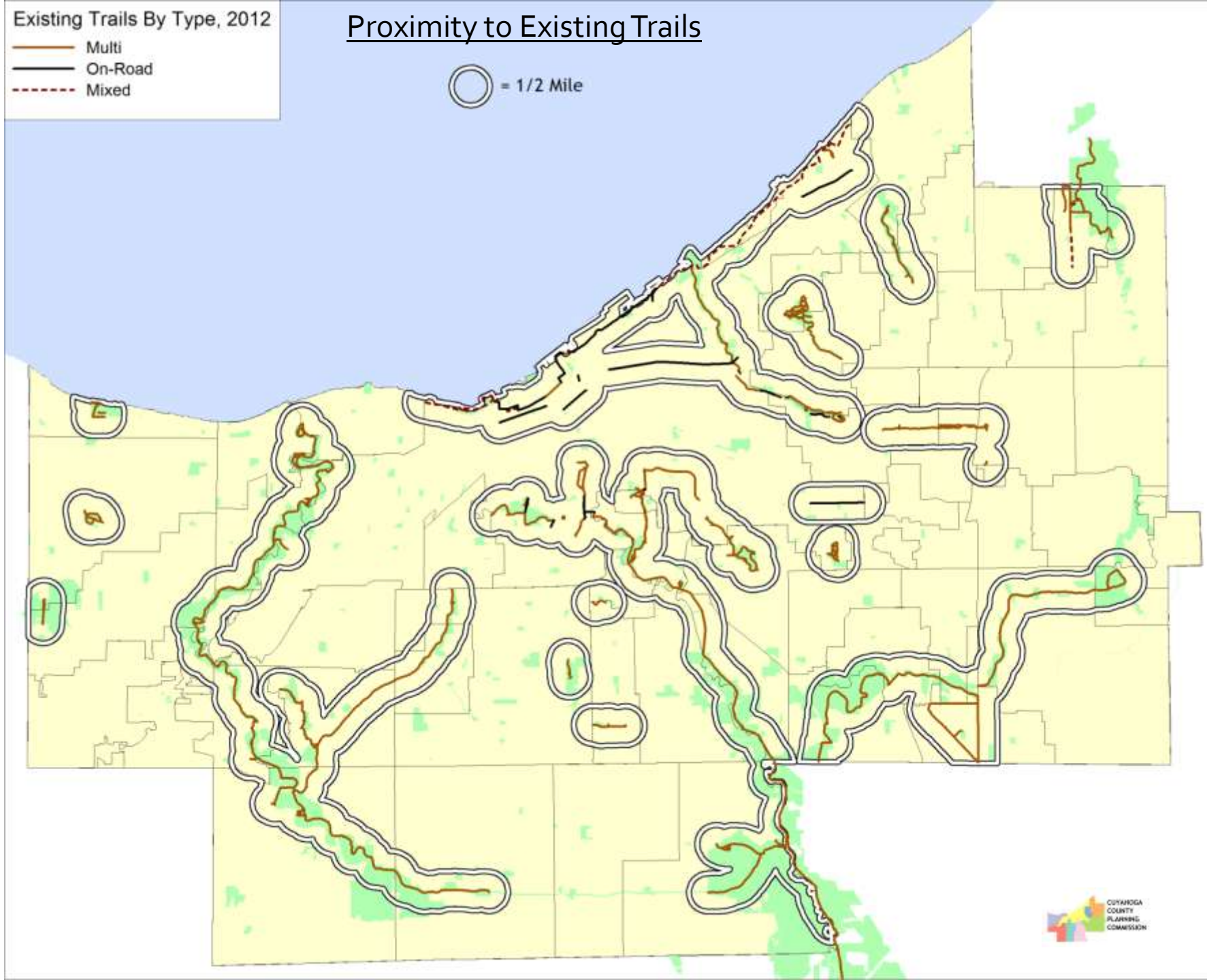
Recently Completed ...



- Multi
- On-Road
- Mixed

Proximity to Existing Trails

○ = 1/2 Mile



Population Characteristics by Proximity to Trails

	Within Half Mile of Trail*		Outside Half Mile of Trail*		County Total	
	Number	Percent of County	Number	Percent of County	Number	Percent of County
Area (SqMi)	100	25%	301	75%	401	100%
Total Population	337,648	26%	942,474	74%	1,280,122	100%
Population Per Square Mile	3,381		3,130		3,193	
Households	147,264	27%	397,792	73%	545,056	100%
Population Below Poverty Level	68,666	34%	132,944	66%	201,609	100%
Percent Population Below Poverty	20%		14%		16%	
Households w/o Vehicle	24,396		44,864		69,260	
Percent Households w/o Vehicle	17%		11%		13%	
Avg Household Income	\$ 56,175		\$ 64,233		\$ 62,056	
Population Under Age 18	72,271	25%	217,991	75%	290,262	100%
Percent Population Under Age 18	21%		23%		23%	
# Primary / Secondary Schools	165	33%	336	67%	501	100%
# Students	68,065	12%	519,447	88%	587,512	100%

Sources: U.S. Census Bureau: Census 2010 and American Community Survey (2006-2009)

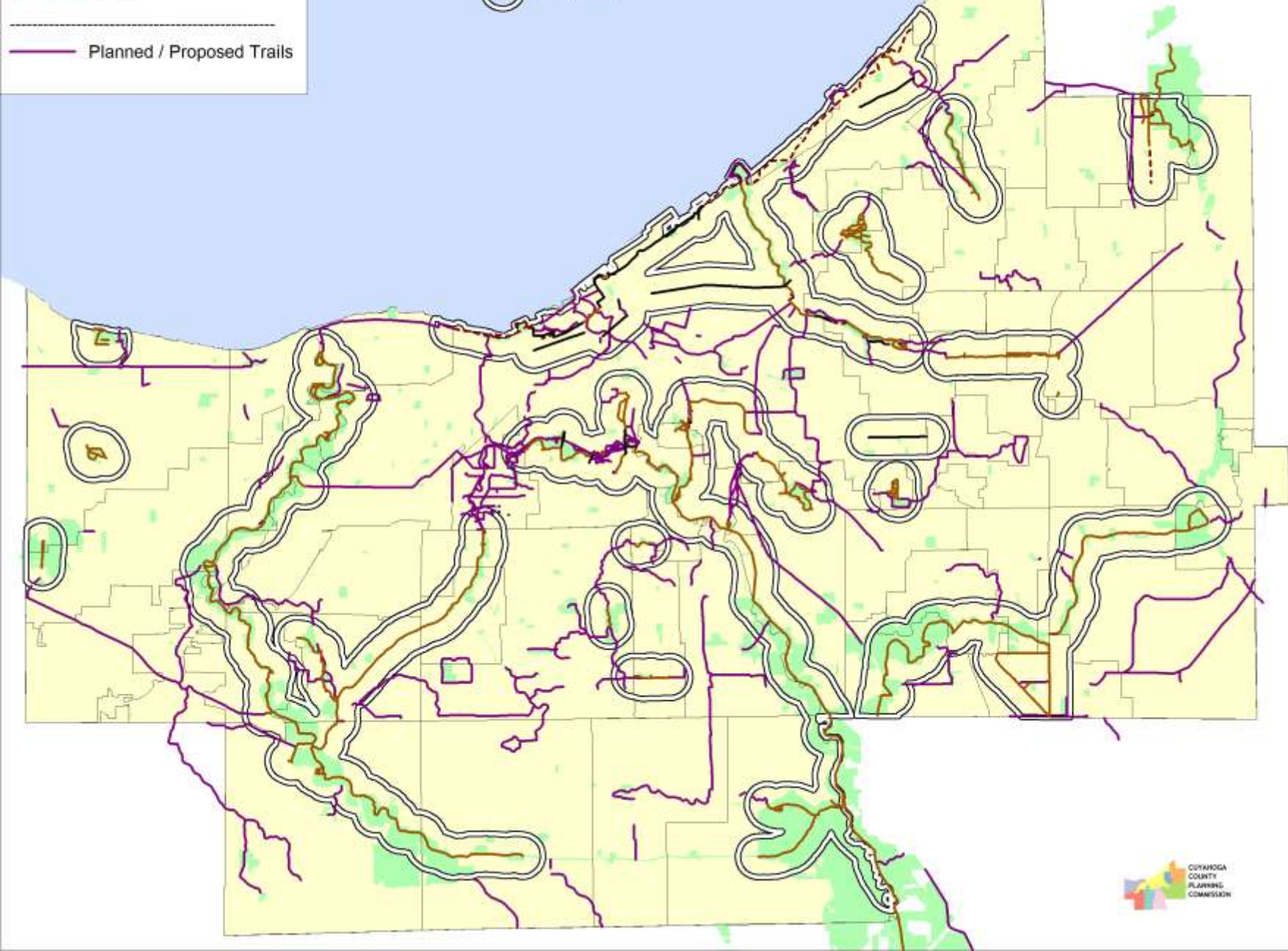


*Trails primarily include multi-purpose and separated on-road bike lanes.

Existing Trails By Type, 2012

- Multi
- On-Road
- Mixed
- Planned / Proposed Trails

○ = 1/2 Mile



Existing Trails By Type, 2012

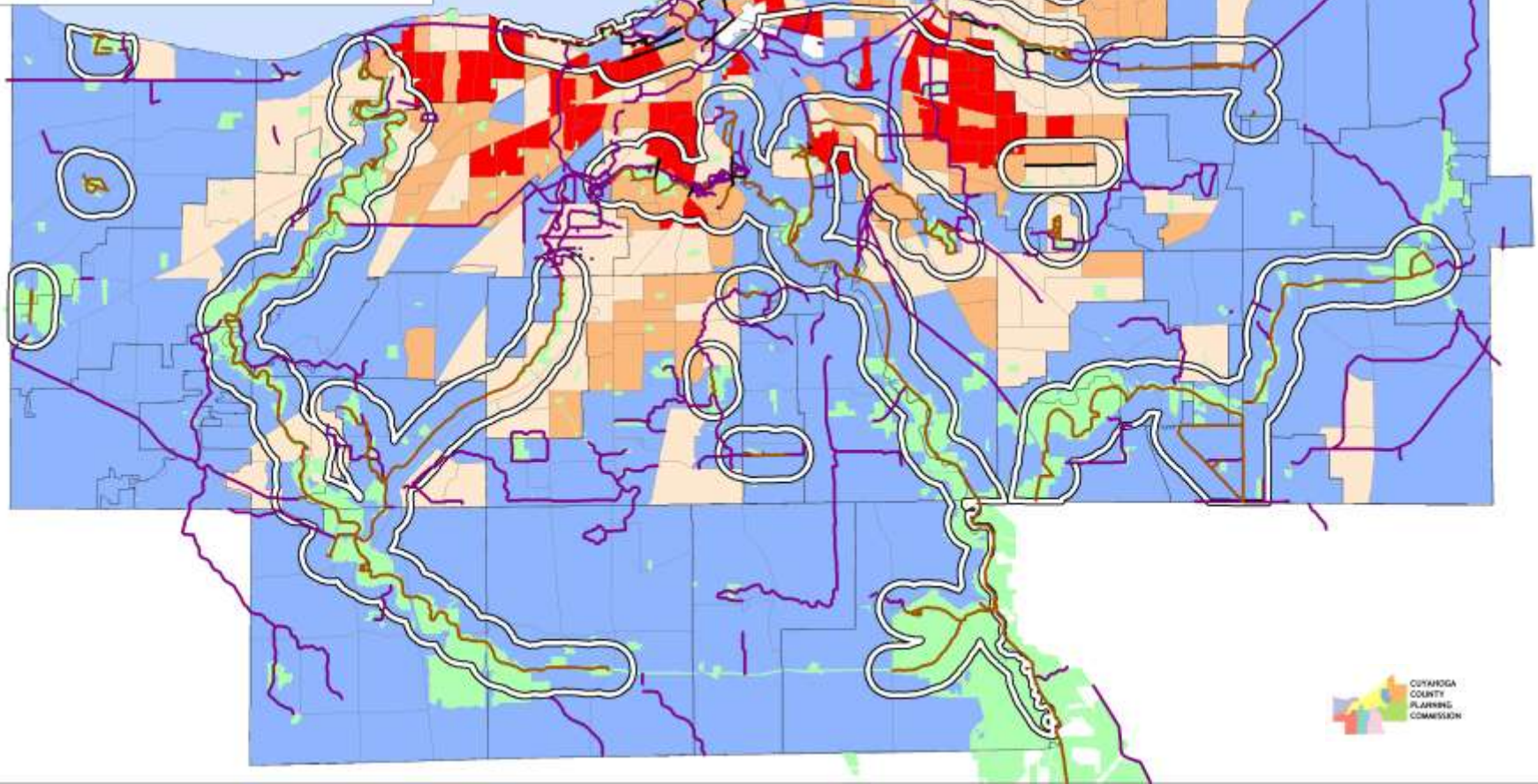
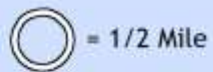
- Multi
- On-Road
- Mixed

Planned / Proposed Trails

Population Density Persons Per Square Mile

- Less than 3,192 (County Average)
- 3,192 to 6,000
- 6,000 to 9,000
- 9,000 or More

Population Density



Existing Trails By Type, 2012

- Multi
- On-Road
- Mixed

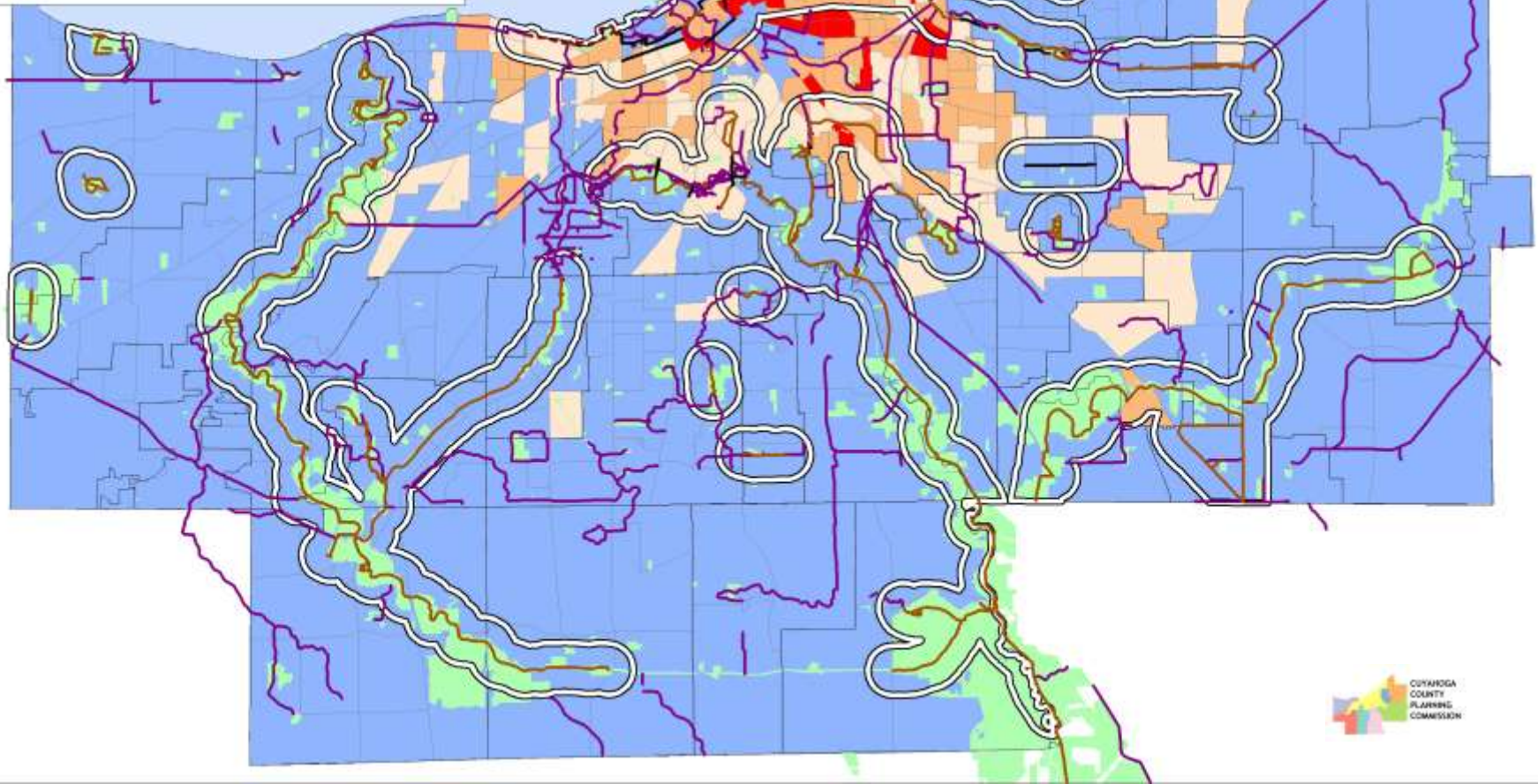
Planned / Proposed Trails

Percent of Households Without Vehicles (2005-2009)

- 0 to 13 (County Average)
- 13 to 25
- 25 to 50
- 50 to 100

Access to Vehicles

○ = 1/2 Mile



Existing Trails By Type, 2012

- Multi
- On-Road
- Mixed

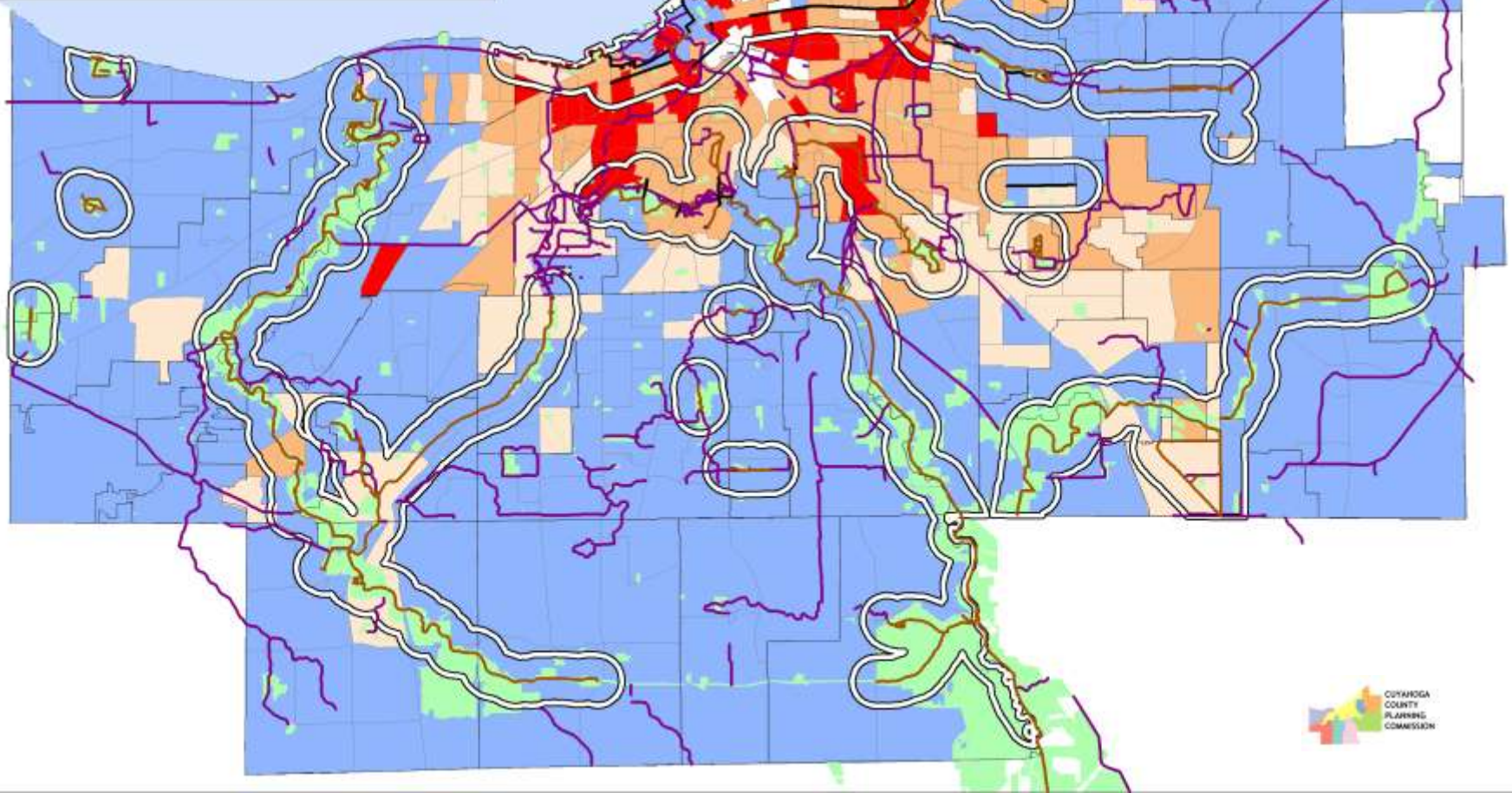
Planned / Proposed Trails

Percent of Households Below Poverty Level

- 0.8 to 16
- 16 to 25
- 25 to 50
- 50 to 100

Below Poverty Level

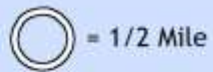
○ = 1/2 Mile



Existing Trails By Type, 2012

- Multi
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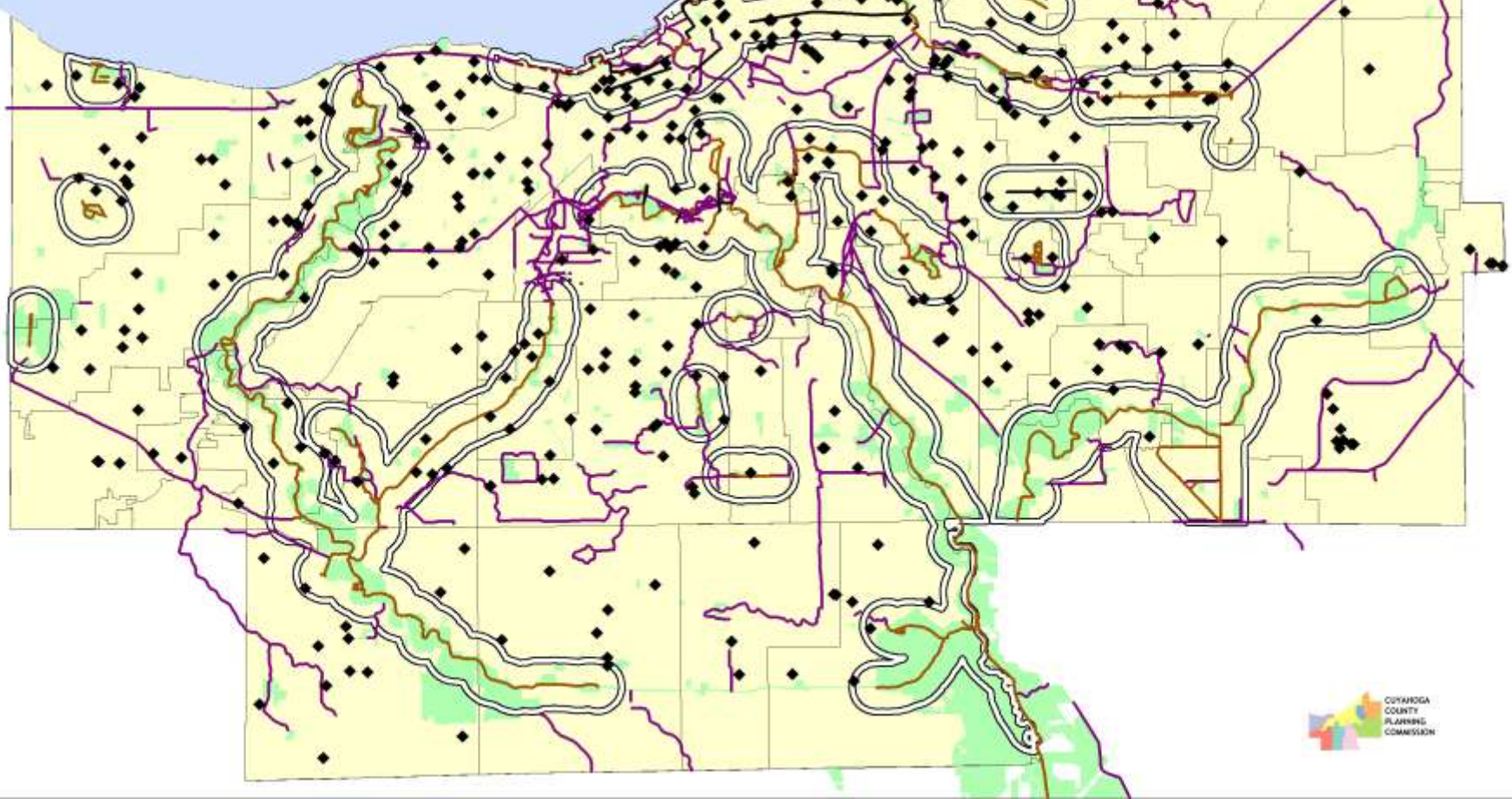
Proximity to Schools



Students Whose School is ...

Within 1/2 Mile = 68,065 (12%)

Outside 1/2 Mile = 519,447 (88%)



Available Resources

<http://planning.co.cuyahoga.oh.us/gis/>

CUYAHOGA COUNTY PLANNING COMMISSION

// Community Planning GIS

Locate Information

Layers & Locations

- ☒ Hydrography
- ☐ Soils
- ☐ Less than .2% Flood Zone
- ☐ High Risk Flood Zone A
- ☐ High Risk Flood Zone AE
- ☐ High Risk Flood Zone AH

Transportation

- ☐ Base Street Map

Political

- ☐ County Council Districts
- ☒ County Municipalities
- ☐ School Districts
- ☐ Other Political

Environmental

- ☐ Greenprint Activity Nodes
- ☐ Greenprint Trails
- ☐ Urban Setting Designation
- ☐ Watersheds
- ☒ Public Parks
- ☐ NOACA Bike Trails By Type
- ☒ NOACA Bike Trails By Status

Property

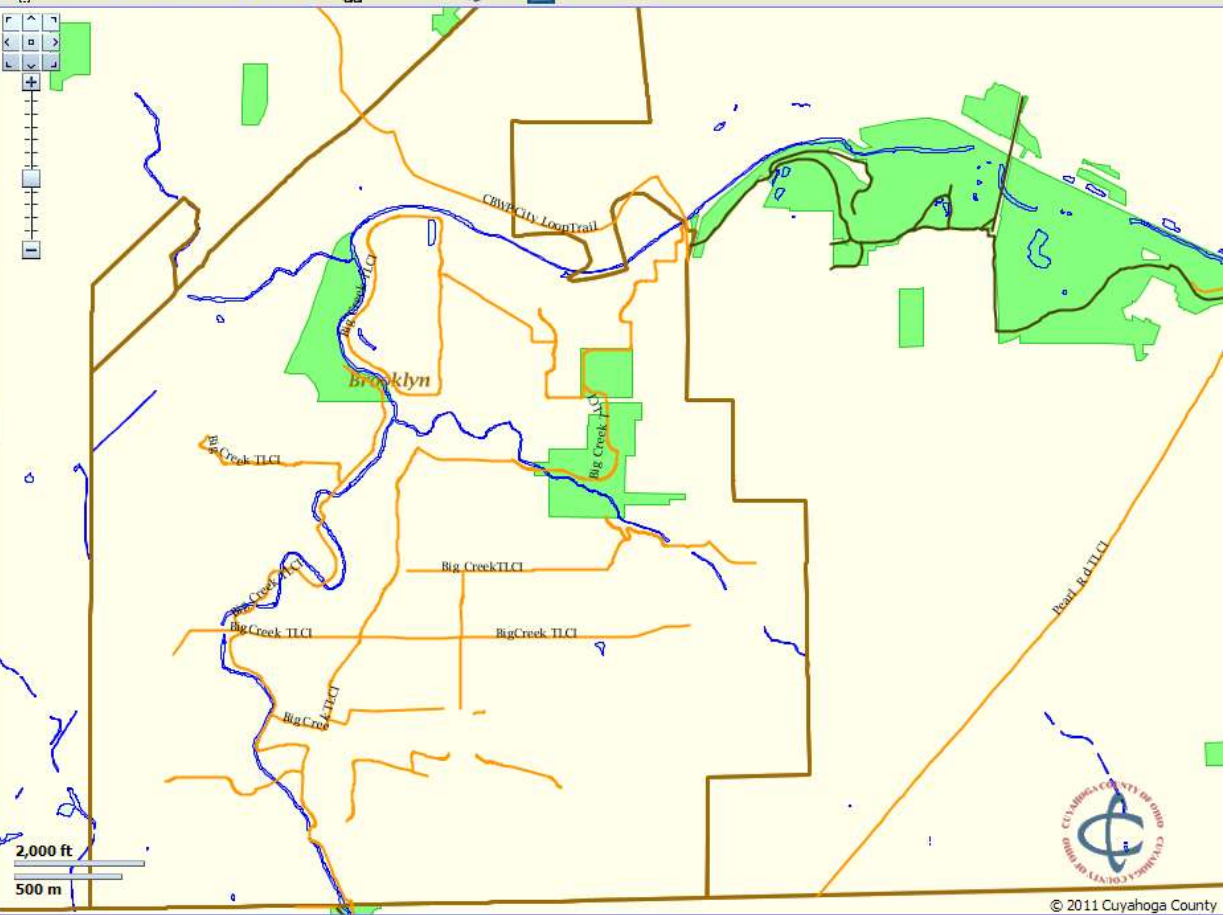
- ☒ Cadastre (2 mi.)
- ☐ Addresses (2 mi.)
- ☐ Parcels (1 mi.)
- ☐ PPN (1 mi.)
- ☐ Parcel Dimensions (1/2 mi.)
- ☐ Point Parcels (Condos) (1 mi.)
- ☐ Foreclosures 2006
- ☐ Foreclosures 2007
- ☐ Foreclosures 2008
- ☐ Foreclosures 2009
- ☐ Foreclosures 2010
- ☐ Major Buildings
- ☐ Land Use
- ☐ Zoning

Demographics

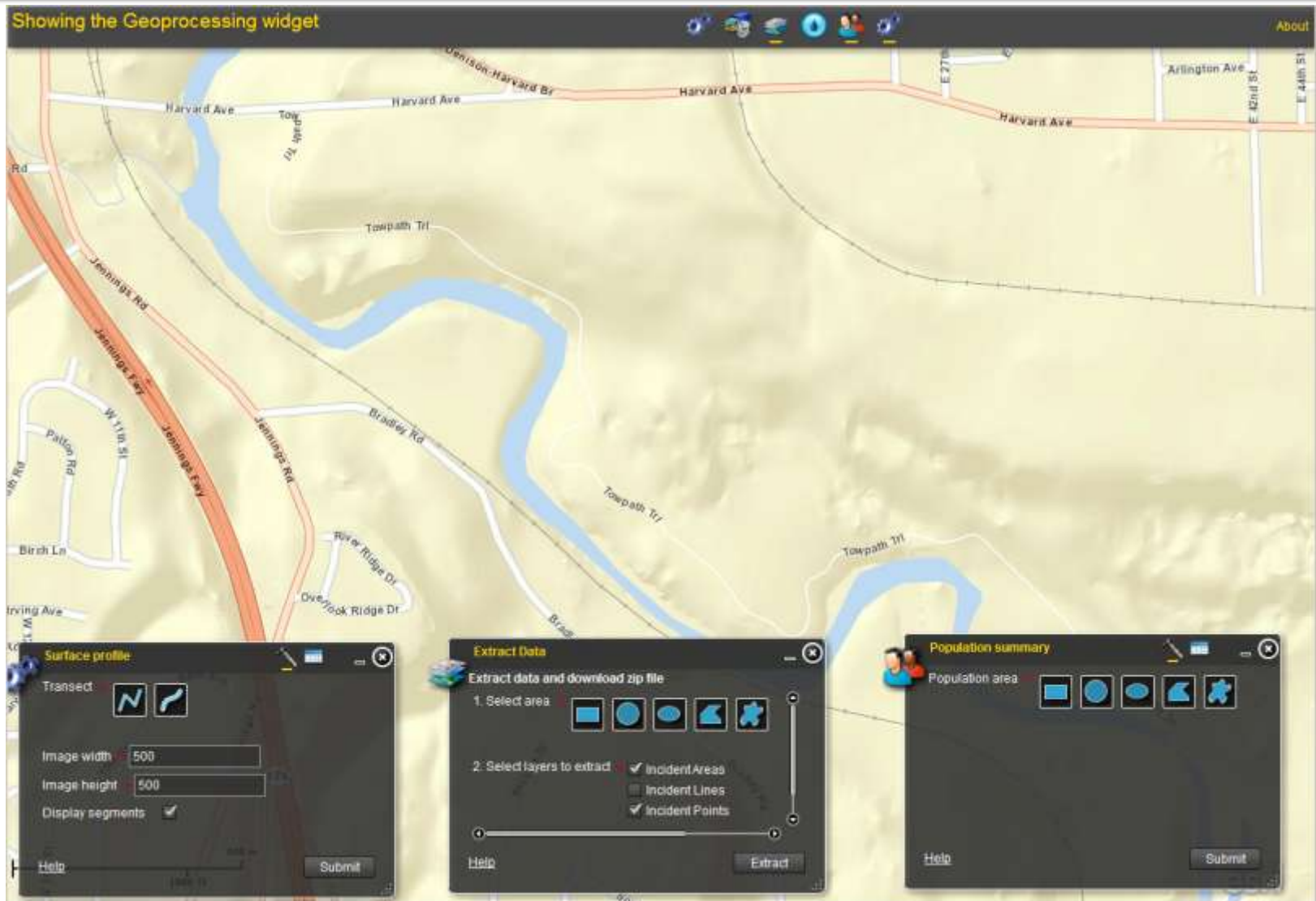
- ☐ Census Block Group 2000

Map Viewer

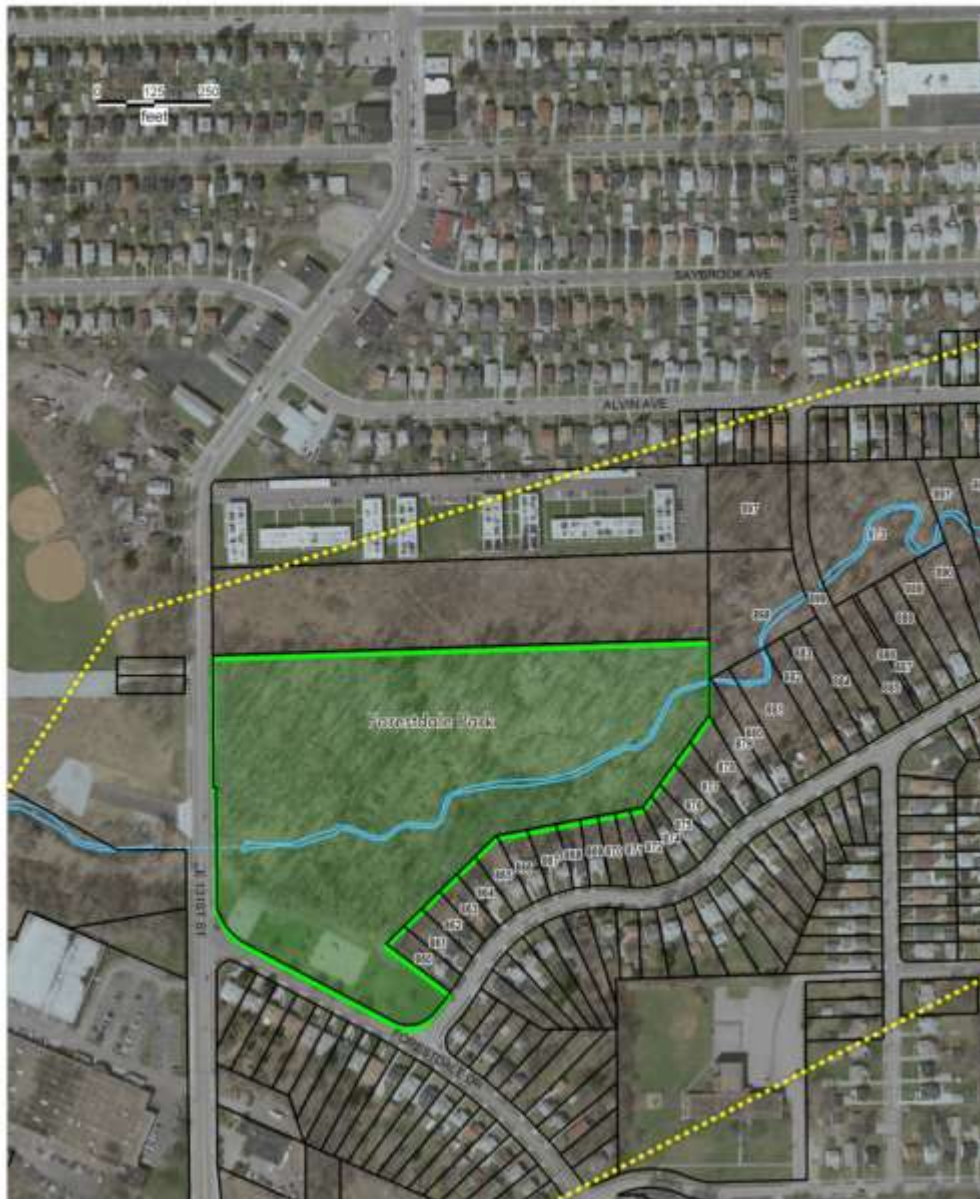
Display Street Map Measure Quick Picks Print



Available Resources



Johnston Run



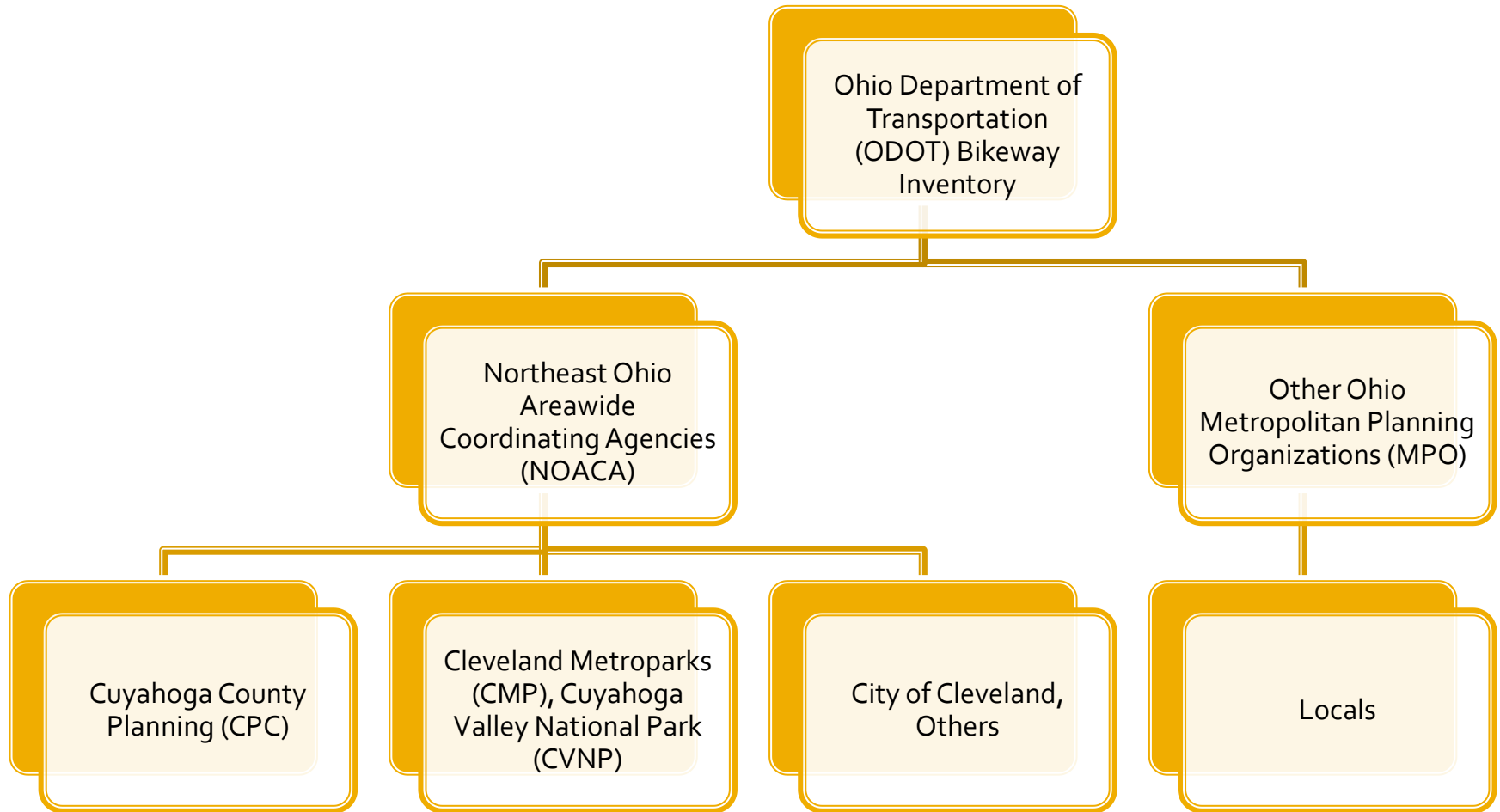
Trail ID	PPN	OWNER	PUBLIC_OWNER	ADDRESS	CITY
6	13824026	GRAHAM, ANNA		14212 SAYBROOK AVE	CLEVELAND
7	13824027	CLEVELAND CITY OF LB96	CLEVELAND CITY	E 143 ST	CLEVELAND
8	13824028	CLEVELAND CITY OF LB95	CLEVELAND CITY	E 143 ST	CLEVELAND
9	13824029	CLEVELAND LAND BANK 2004	CLEVELAND CITY	E 143 ST	CLEVELAND
10	13824030	CLEVELAND CITY OF LB 99	CLEVELAND CITY	E 143 ST	CLEVELAND
11	13824031	CLEVELAND CITY OF LB94	CLEVELAND CITY	00000 E 143 ST	CLEVELAND
12	13824032	CLEVELAND CITY OF LB94	CLEVELAND CITY	00000 E 143 ST	CLEVELAND
13	13824033	RUBIN JOSEPH L		E 143 ST	CLEVELAND
14	13824034	CLEVELAND CITY OF LB95	CLEVELAND CITY	04528 E 143 ST	CLEVELAND
15	13824035	CLEVELAND CITY OF LB92	CLEVELAND CITY	SAYBROOK AVE	CLEVELAND
16	13824036	CITY OF CLEVELAND LAND REUTIL	CLEVELAND CITY	SAYBROOK AVE	CLEVELAND
17	13824037	PETERS MELVIN C		SAYBROOK AVE	CLEVELAND
18	13824038	PETERS MELVIN C		14120 SAYBROOK AVE	CLEVELAND
19	13824039	CLEVELAND CITY OF LB92	CLEVELAND CITY	SAYBROOK AVE	CLEVELAND
20	13824040	TOODLE NINA		14112 SAYBROOK AVE	CLEVELAND
21	13824041	WALTON, HOWARD JR		14108 SAYBROOK AVE	CLEVELAND
22	13824042	MCKNIGHT, EVERET L		14104 SAYBROOK AVE	CLEVELAND
23	13824043	GRIFFIN, AARON		14100 SAYBROOK AVE	CLEVELAND
24	13824044	SAVAGE, ROTAYA V.		14020 SAYBROOK AVE	CLEVELAND
25	13824045	KNIGHT CLARENCE B		14016 SAYBROOK AVE	CLEVELAND
26	13824046	HOPES GLORIA E		14012 SAYBROOK AVE	CLEVELAND
27	13824047	CARMICHAEL, DONNITA		14008 SAYBROOK AVE	CLEVELAND
28	13824048	BENNETT, DEBORAH A		14004 SAYBROOK AVE	CLEVELAND
29	13824049	JACKSON CORA L		14000 SAYBROOK AVE	CLEVELAND
860	54608004	PATTERSON, GREGORY A		13107 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
861	54608005	RICE, ROBERT		13109 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
862	54608006	DJM HOLDINGS LTD		13111 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
863	54608007	HARPER INDUSTRIES INC		13113 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
864	54608008	BARBOUR, DEBORAH		13201 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
865	54608009	SIMMONS, REGINA & BRIAN		13205 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
866	54608010	KOMPERDA, KRISTI		13209 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
867	54608011	TODD, ZEMIRAH		13215 EAST CRANWOOD PARK BLVD	GARFIELD HEIGHTS
868	54608012	ROBINSON, VERNALL F, III & F		13303 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
869	54608013	GILBERT, JEWELL		13305 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
870	54608014	GARFIELD HTS CITY OF	GARFIELD HEIGHTS CITY	CRANWOOD PARK BLVD	GARFIELD HEIGHTS
871	54608015	GARFIELD HTS CITY OF	GARFIELD HEIGHTS CITY	CRANWOOD PARK BLVD	GARFIELD HEIGHTS
872	54608016	GARFIELD HTS CITY OF	GARFIELD HEIGHTS CITY	CRANWOOD PARK BLVD	GARFIELD HEIGHTS
873	54609001	BELL, WARREN		CRANWOOD PARK BLVD	GARFIELD HEIGHTS
874	54609002	CLARK MARY L		13501 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
875	54609003	KARKA INC		13505 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
876	54609004	HUNT BARBARA J		13509 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
877	54609005	BELL, VONNIE L.		13513 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
878	54609006	GARR, TERENCE C		13517 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
879	54609007	ALLMOND, MONTANA S & J D		13517 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
880	54609008	HENDRIX RUSSELL & B		13525 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
881	54609009	HEWITT, DAISY B		13531 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
882	54609011	WOLF, VIRGINIA SUC-TRS		13611 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
883	54609012	MCNEAR, BETTY		13615 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
884	54609013	LYONS MAE TOMMIE		13619 CRANWOOD PARK AVE	GARFIELD HEIGHTS
885	54609014	SULLIVAN, MYA J		13629 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
886	54609015	COLEMAN, DAVID		CRANWOOD PARK AVE	GARFIELD HEIGHTS
887	54609016	COLEMAN, DAVID		13705 CRANWOOD PARK AVE	GARFIELD HEIGHTS
888	54609017	DEMETRIUS BOWLING		13709 CRANWOOD PARK AVE	GARFIELD HEIGHTS
889	54609018	JAYERLINE AMOS		13713 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
890	54609019	LEWIS, MATTIE B		13715 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
891	54609020	DASHIELD NATHANIEL & MYRTIES		13719 CRANWOOD PARK AVE	GARFIELD HEIGHTS
892	54609021	EDMISTON LORETTA		13723 CRANWOOD PARK AVE	GARFIELD HEIGHTS
893	54609022	WILLIS, ROSIE M		13803 CRANWOOD PARK AVE	GARFIELD HEIGHTS
894	54609023	DANIEL, HOSIE & PATRICIA		13807 CRANWOOD PARK AVE	GARFIELD HEIGHTS
895	54609024	FUTURE, PATRICE		13811 CRANWOOD PARK AVE	GARFIELD HEIGHTS
896	54609025	HODGE, MELVIN E SR		13815 CRANWOOD PARK AVE	GARFIELD HEIGHTS
897	54609026	GARFIELD GARDENS, LLC		CRANWOOD PARK AVE	GARFIELD HEIGHTS
898	54609027	BELL, WARREN		CRANWOOD PARK AVE	GARFIELD HEIGHTS
899	54609888		GARFIELD HEIGHTS CITY		GARFIELD HEIGHTS
1047	54621015	JKN INVESTMENTS, INC.		13911 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
1048	54621016	HARRIS, ROOSEVELT		13907 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
1049	54621017	HARRIS PHILLIP M & J		13905 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
1050	54621018	FRUITS, CHERYL A		13901 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
1051	54621019	JORDAN, DORIS		13823 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
1052	54621020	WALKER, MYRON L		13819 CRANWOOD PARK BLVD	GARFIELD HEIGHTS
1053	54621021	Barkley, Shernise L		04586 E 143 ST	GARFIELD HEIGHTS
1084	54621067	Chambers, Marjorie		E 143 ST	GARFIELD HEIGHTS
1089	54621072	MCGARY, WILLIAM E		04636 E 143 ST	GARFIELD HEIGHTS
1090	54621074	MCGARY, WILLIAM E		04616 OSBORN RD	GARFIELD HEIGHTS
1091	54621075	Chambers, Marjorie		E 143 ST	GARFIELD HEIGHTS

Regional Bikeway Inventory

Defining Bikeway

- Bikeway: A generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Bikeway Inventory Coordination Efforts



New Statewide Database

- Twenty-six documented fields for each bikeway
- Multi-use paths will be assigned a unique network linear feature identifier (NLFID)
- All other bikeways will be linked to corresponding road NLFID
- Status of Facilities
 - Existing
 - Committed
 - Planned
- Type of Facilities
 - Multi-use path
 - Bike Lane
 - Shared Roadway
 - Wide Shoulder
 - Wide Curb Lane
 - Designated Route

Regional Maintenance Procedures

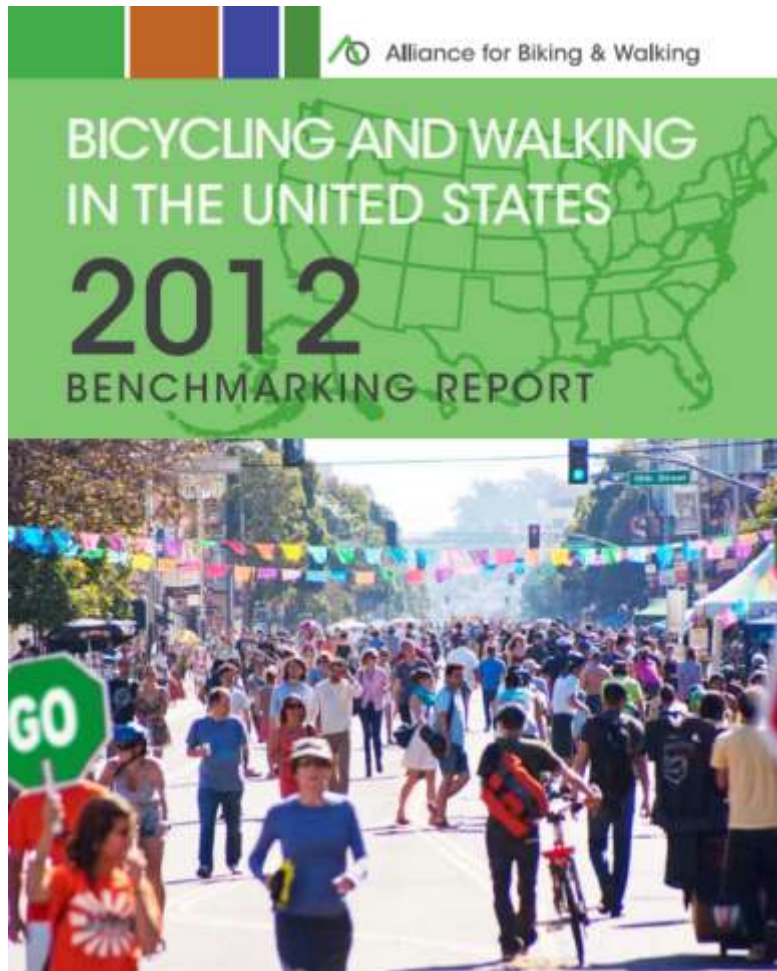
- One time dump of CPC and CMP into NOACA database
- Existing bikeways 100% reconciled
- Committed and planned in the process
- NOACA will maintain the database
 - Submission to ODOT for statewide inventory
 - Annual updates from CPC and CMP
 - As needed updates from others

Inventory and Data as an Evaluation Tool

Different Types of Evaluation

- Evaluation by comparison
 - Comparing Northeast Ohio to peer regions
- Evaluation by progress
 - Measuring 2002 Northeast Ohio against 2012 Northeast Ohio

Evaluation by Comparison



- Biannual report
- Rankings for various topics for 50 states and 51 cities

Swanson, K. (2012). *Bicycling and walking in the United States; 2012 benchmarking report* Washington, D.C.: The Library of Congress.

Evaluation by Comparison: American League Central Standings (Wins-Losses)



■ Chicago: 31-23



■ Cleveland: 28-25



■ Detroit: 25-29



■ Kansas City: 23-30



■ Minneapolis: 21-33

Evaluation by Comparison: Miles of Bikeways



■ Chicago: 406.0



■ Kansas City: 302.4



■ Minneapolis: 168.0



■ Cleveland: 62.6



■ Detroit: 38.8

Evaluation by Comparison: Bike and Pedestrian Mode Share (% biking, % walking, % combined)



■ Minneapolis: 1.4% (6.4%, 10.5%)



■ Chicago: 1.1% (5.8%, 6.9%)



■ Cleveland: 0.5% (4.4%, 4.9%)



■ Detroit: 0.4% (3.3%, 3.7%)



■ Kansas City: 0.3% (2.1%, 2.4%)

Evaluation by Comparison: Bicycle and Pedestrian Fatality Rates (Deaths per 10,000 mode users(bike, walk, combined))



■ Minneapolis: 1.0 (1.6, 2.6)



■ Chicago: 1.5 (2.8, 4.3)



■ Detroit: 4.8 (9.8, 14.6)



■ Kansas City: 5.5 (10.6, 16.1)



■ Cleveland: 5.7 (2.3, 8.0)

Evaluation by Comparison



- League of American Bicyclists: Bicycle Friendly Communities
- Designations based on a wide variety of factors
- 207 Designations
 - Minneapolis: Gold
 - Chicago: Silver
 - Kansas City: Bronze
 - Detroit: Honorable Mention
 - Cleveland: No Designation

Evaluation by Progress

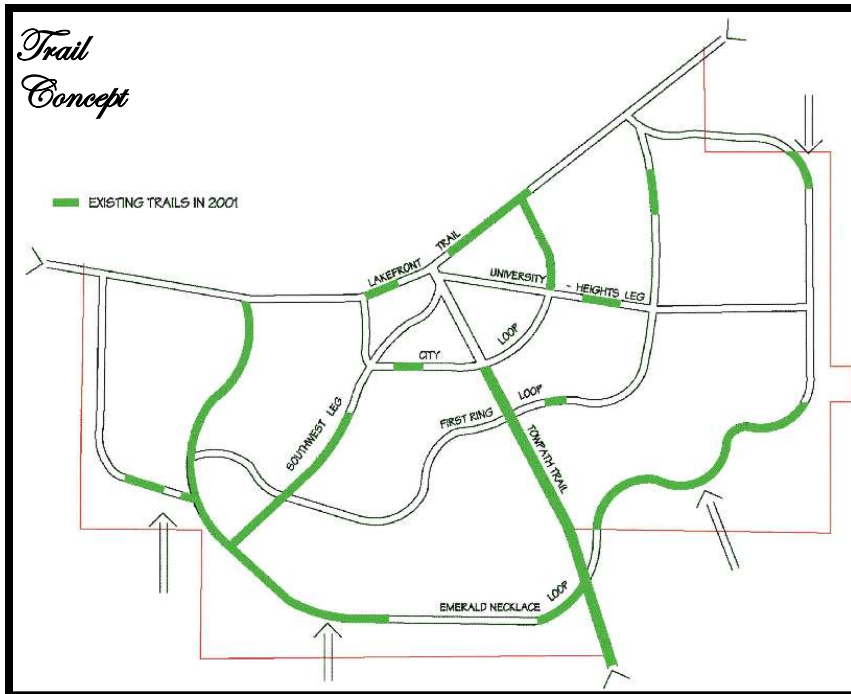
- Self evaluation within current planning efforts
- Creation of an annual “Report Card”
 - San Francisco, CA
 - Seattle, WA
 - Cincinnati, OH
- Importance of regularity, frequency, and consistency

Evaluation by Progress: Bikeways Constructed (Seattle, WA)



Evaluation by Progress: Bikeways Constructed (Northeast Ohio)

- Cuyahoga County Greenprint



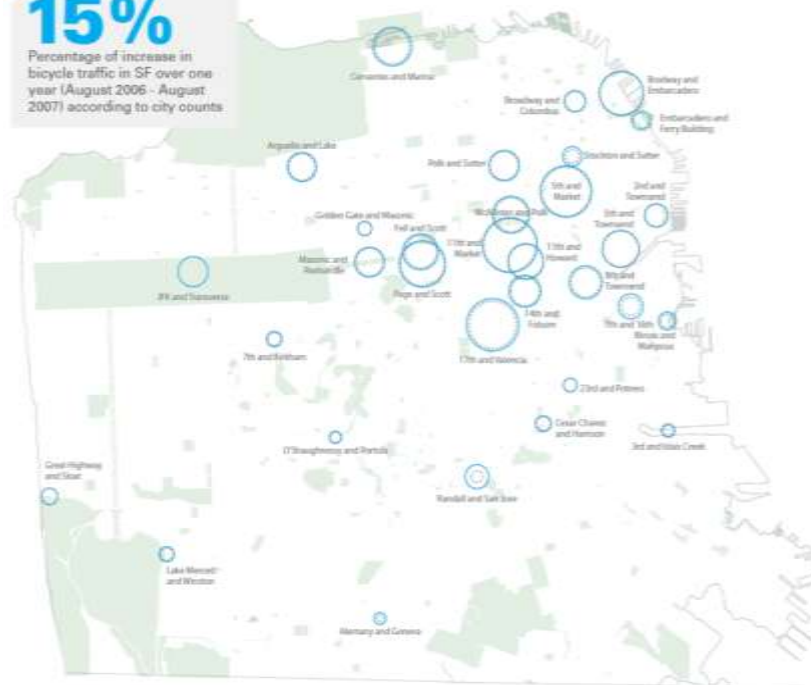
Evaluation by Progress: Bicycle Counts (San Francisco, CA)

BICYCLING IN SAN FRANCISCO WHO AND WHY

Bicycle Counts By Intersection:
From the MTA Citywide Bicycle Count

15%

Percentage of increase in
bicycle traffic in SF over one
year (August 2006 - August
2007) according to city counts

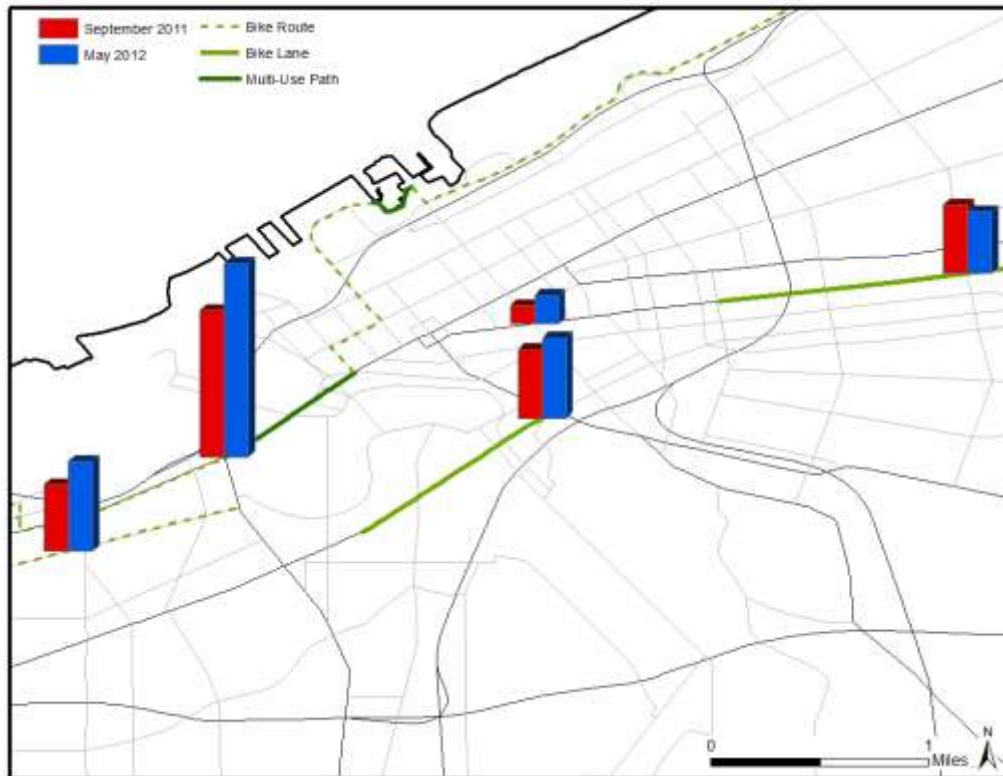


2007 Count
2006 Count



Evaluation by Progress: Bicycle Counts (Northeast Ohio)

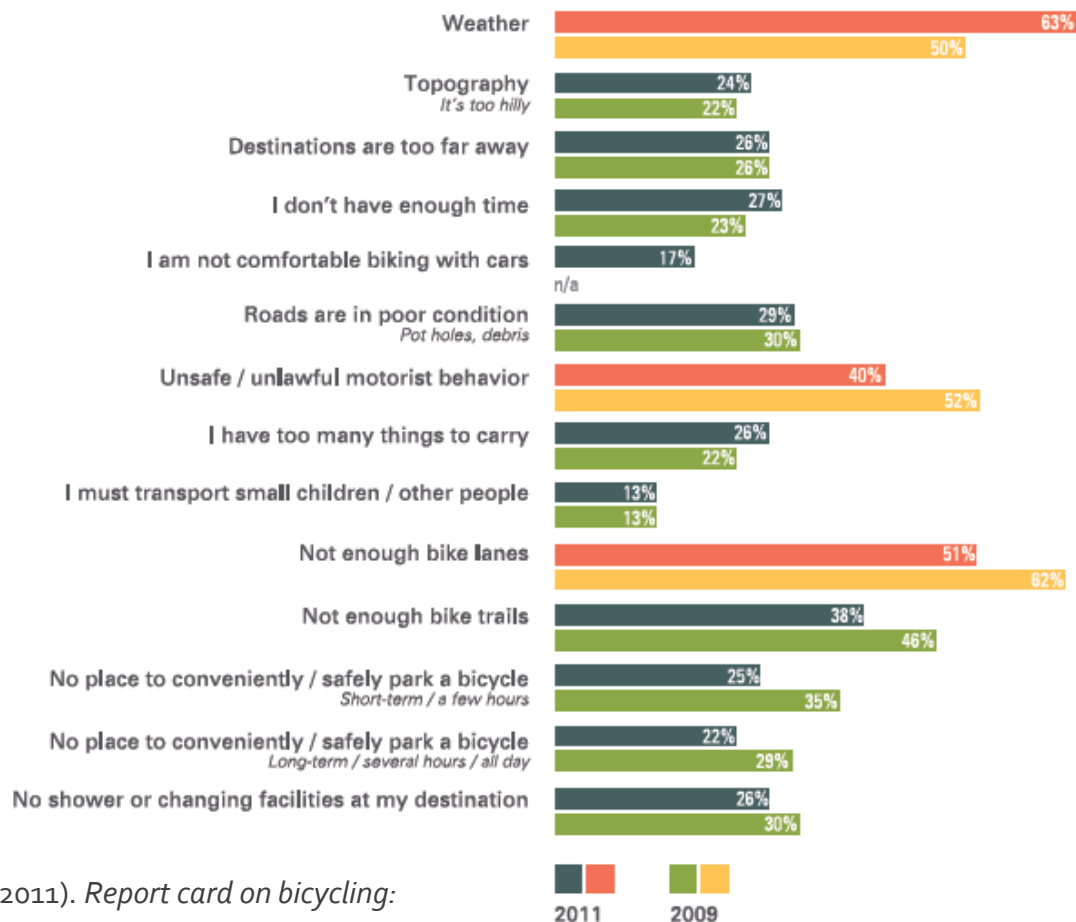
- NOACA Bike Count Program
 - Conducted in September 2011 and May 2012 at over 30 locations in five counties



Evaluation by Progress: User Feedback (Cincinnati, OH)

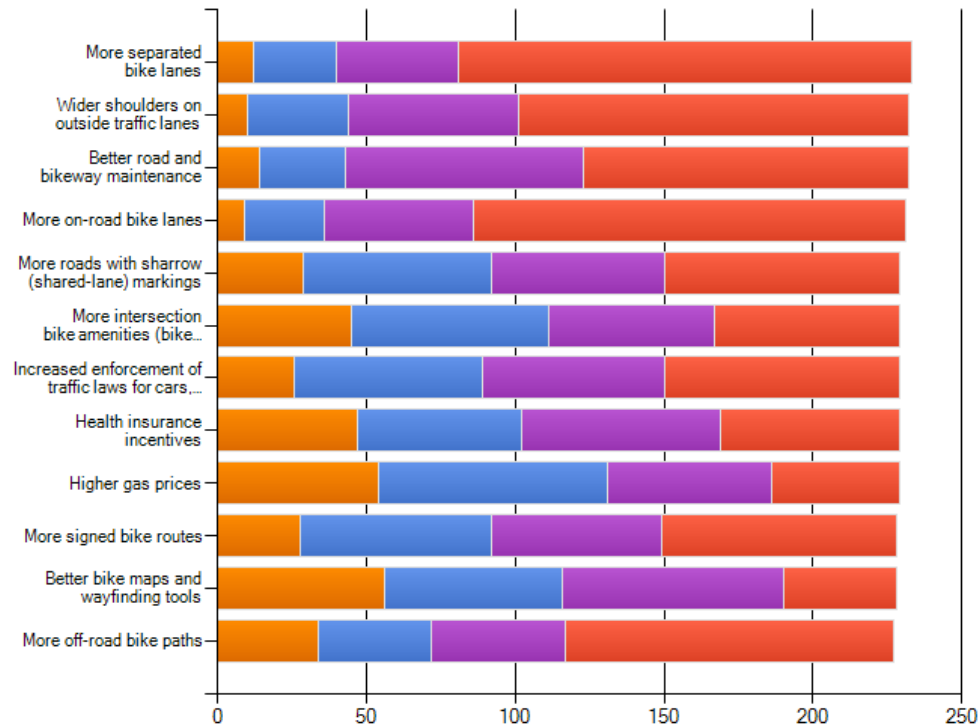


REASONS PREVENTING CYCLISTS FROM RIDING MORE THAN THEY ALREADY DO



Evaluation by Progress: User Feedback (Northeast OH)

- Which of the choices below would have the biggest impact in encouraging you to bike more often?
 - Rank each choice: 1 = no impact, 2 = minor impact, 3 = medium impact, 4 = major impact.



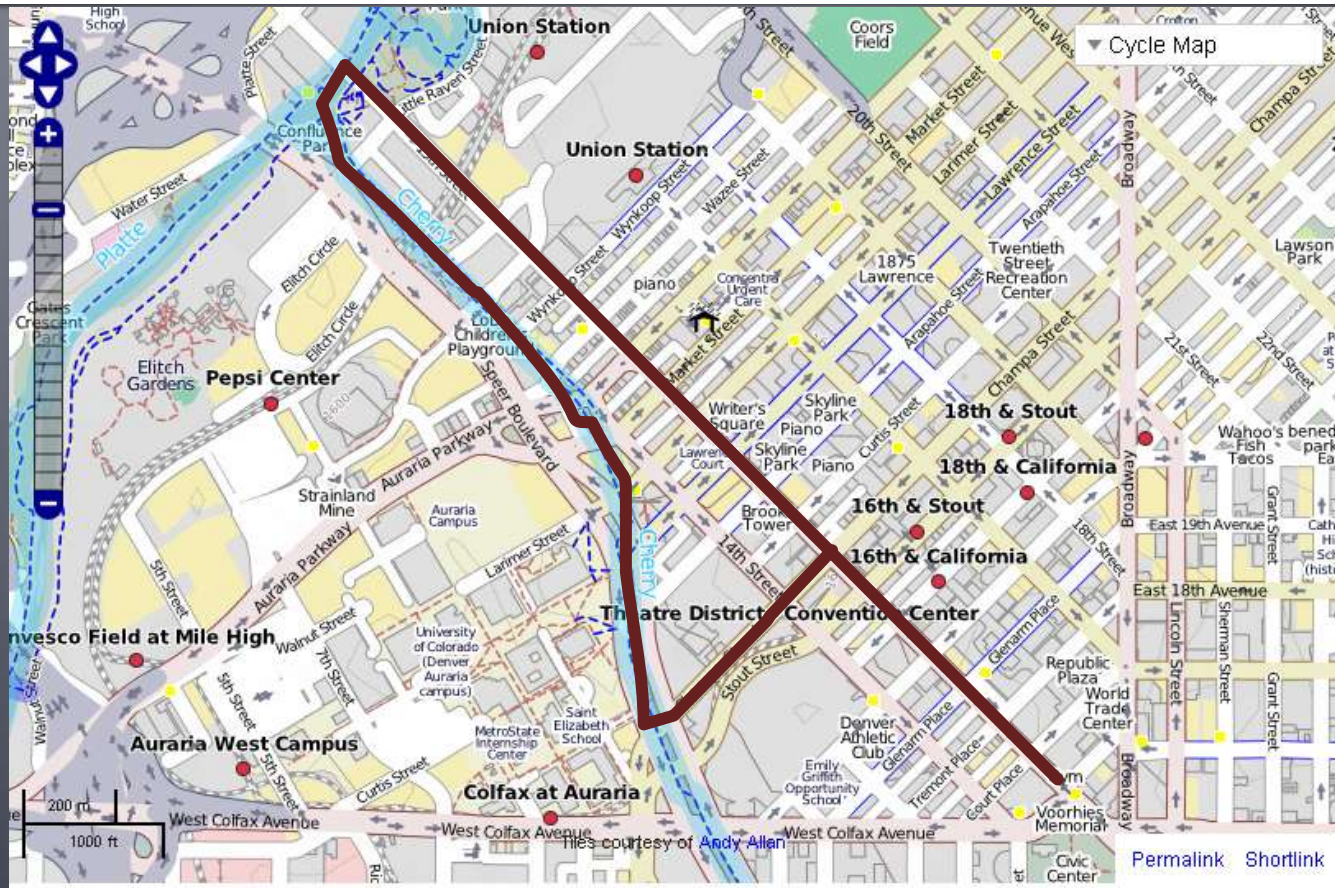
Moving Forward

- Potential indicators
 - Percentage of population/jobs/destinations within $\frac{1}{2}$ mile of a bikeway
 - Percentage of population commuting to work by bike
 - Number of accidents and/or deaths
 - Miles of bikeways
 - Bike count volumes
 - User feedback
- Ownership of responsibility

Inventory as Exploration Tool

Denver Colorado

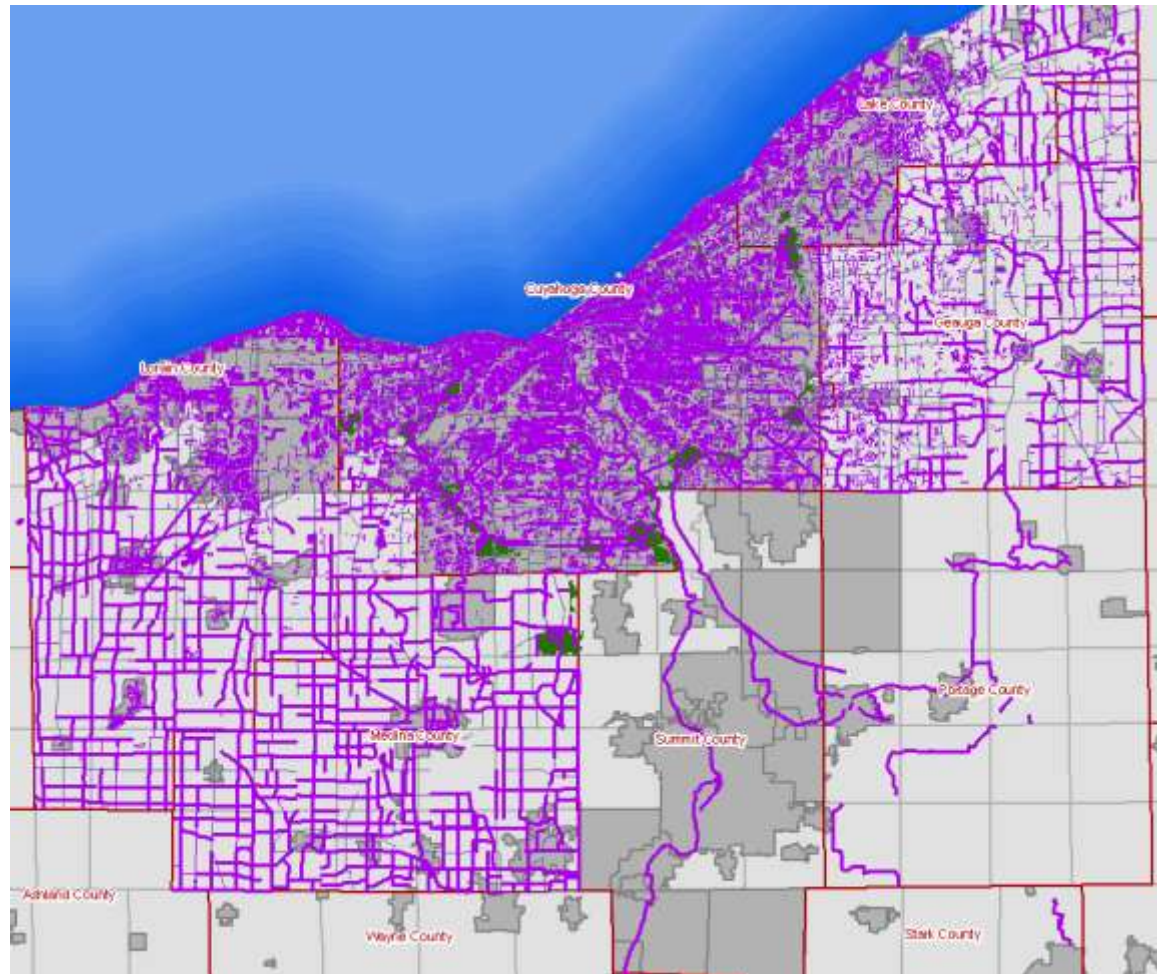
OpenCycleMap

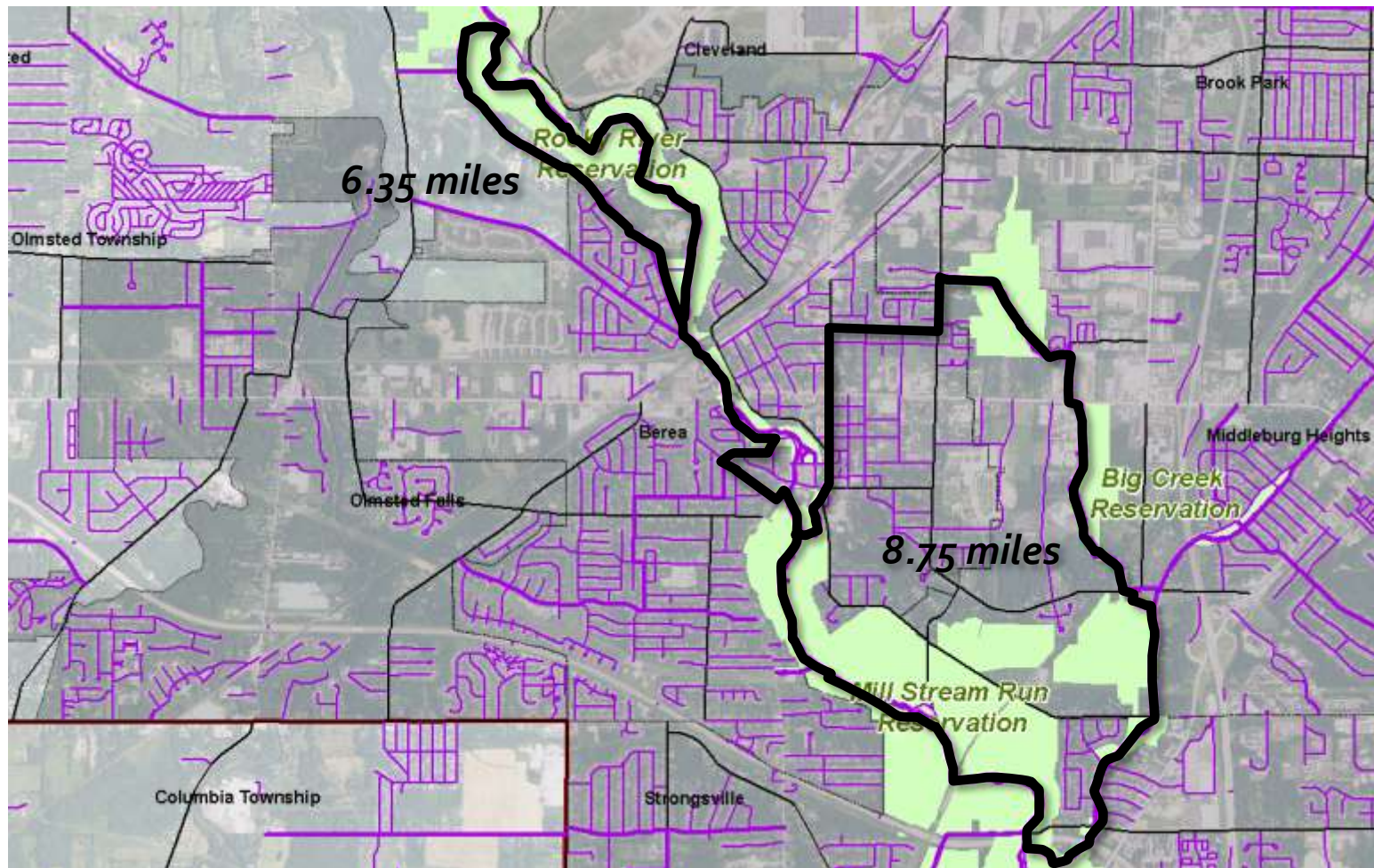


Trail Finder

Concept and Objectives

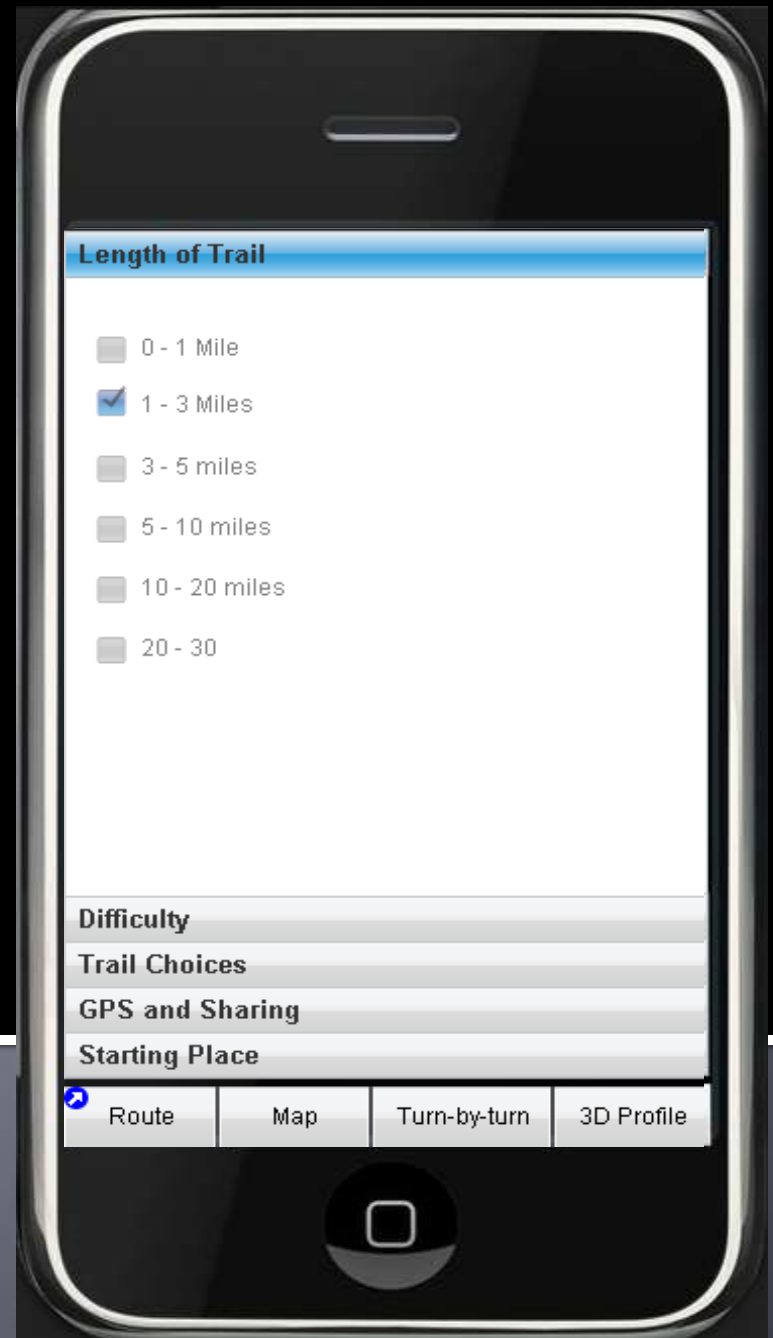
- Provide access to our trail inventory to our users
- Encourage recreational trail use to foster healthy lifestyles in the greater Cleveland community.
- Do it in a way that applies to utilitarian and *recreational* use



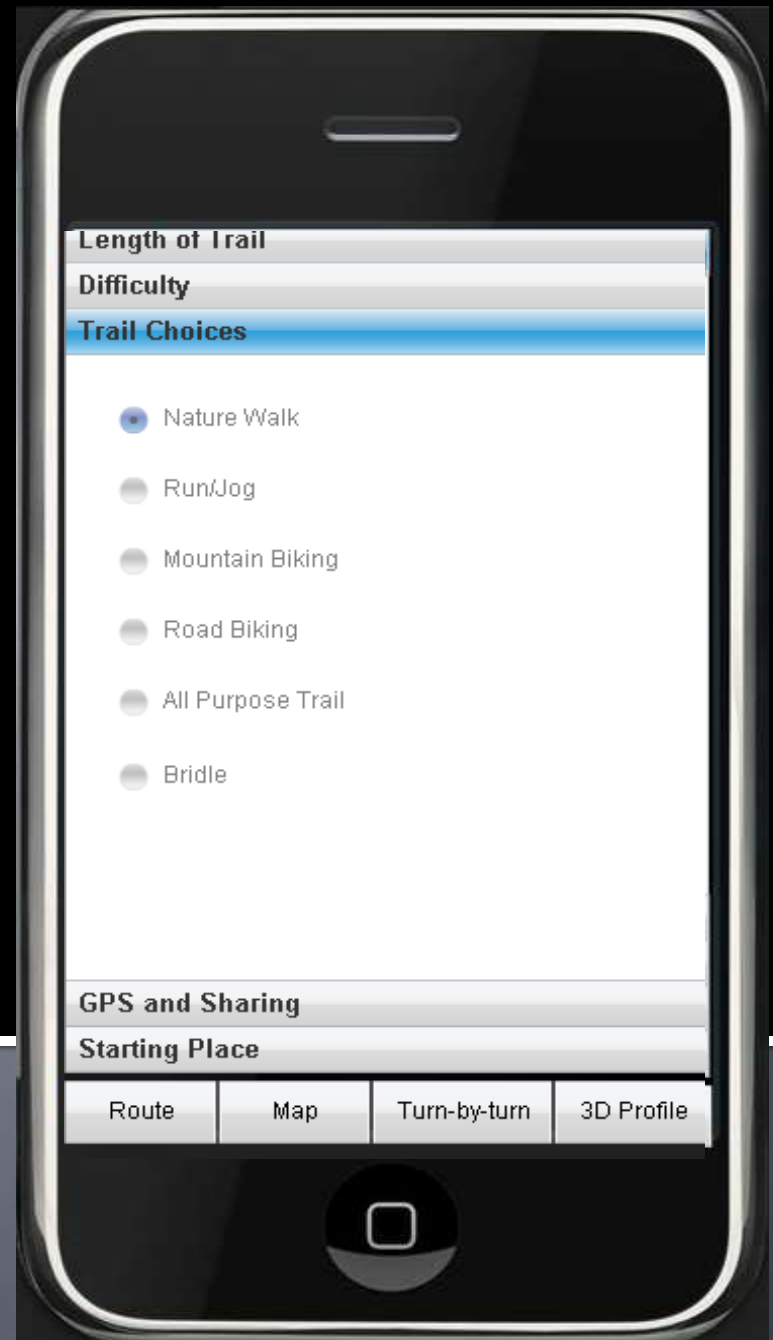


Here is an example:

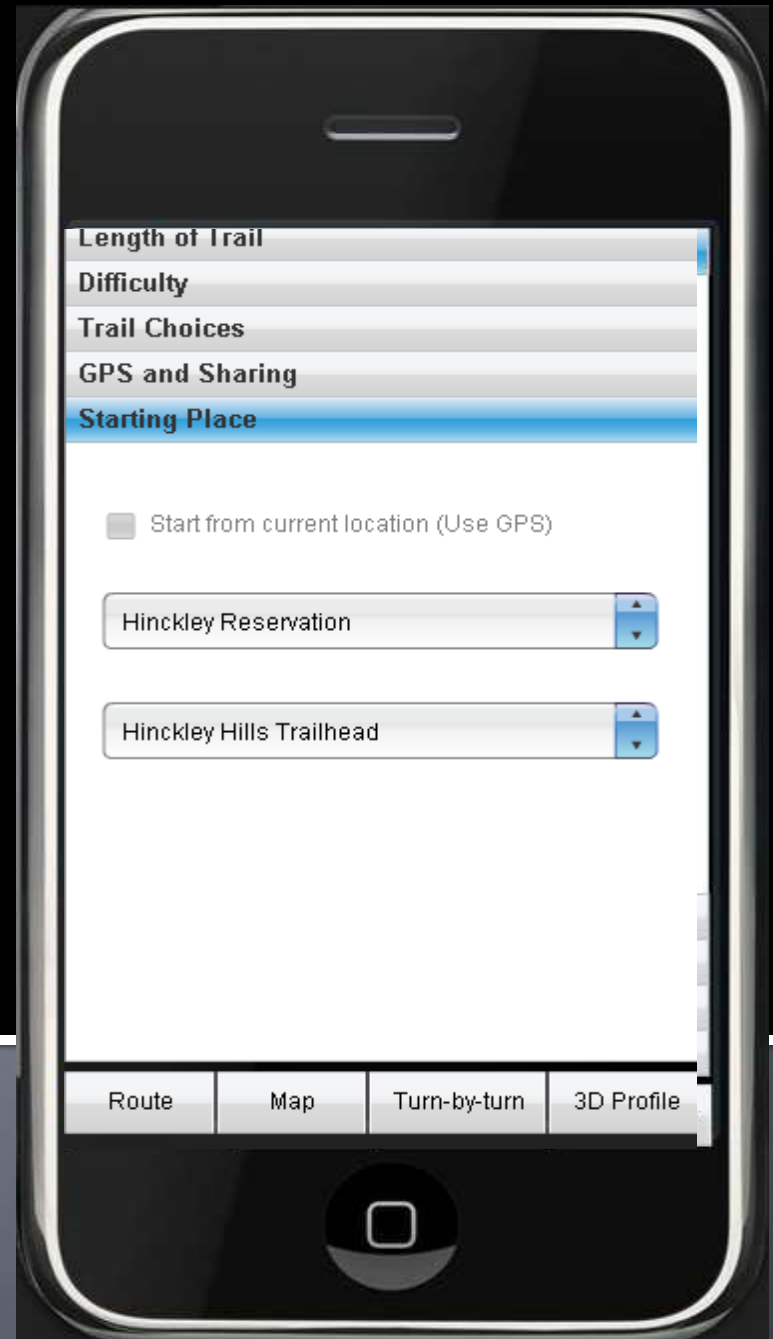
I want to take a walk of about 1 hour.



I want to see lots of plants ,
wildlife and water .



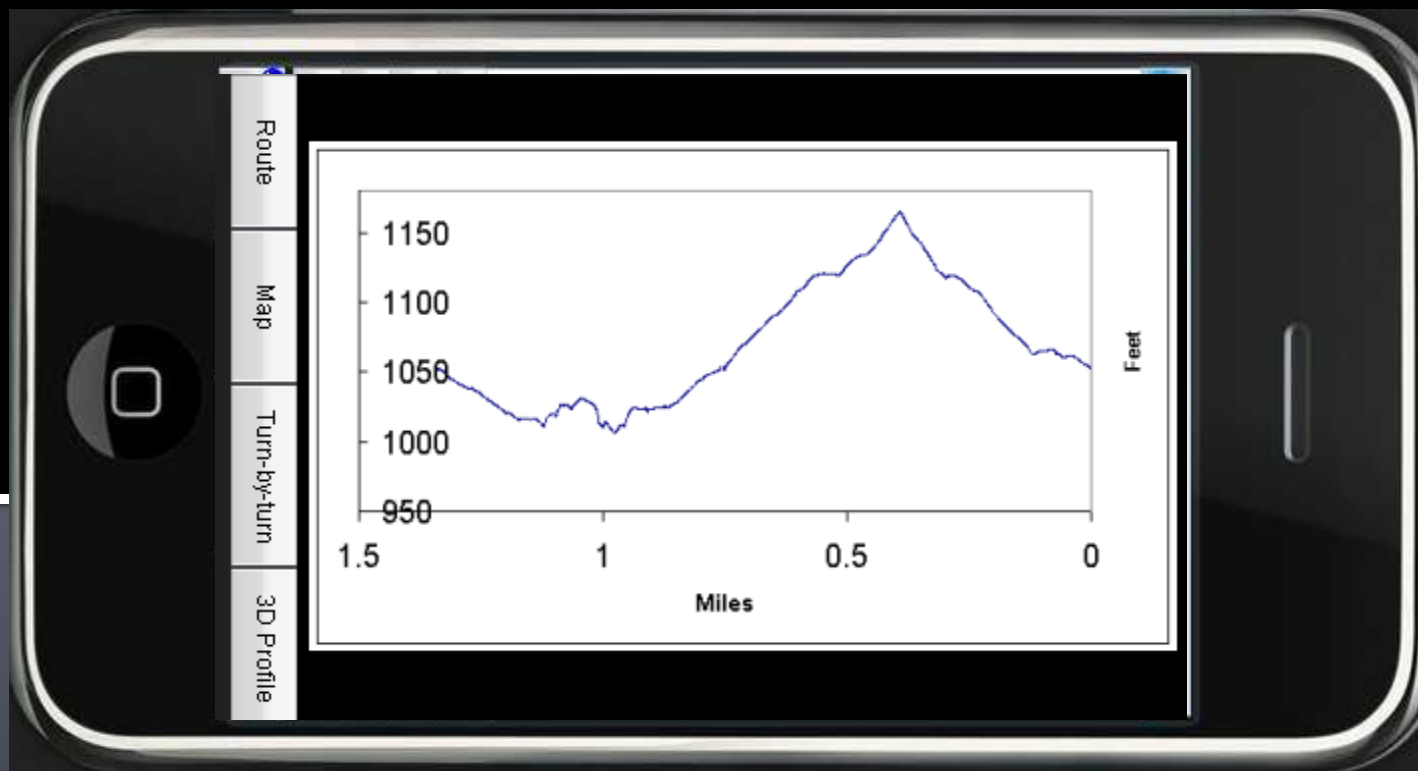
I know I want to go to
Hinckley Reservation because
it is close to my house.



Here is a great route, a loop trail, with lots of hills that crosses streams and goes deep into woodland areas.



I can even check how the elevation will change as I proceed on my walk.



Additional Features:

- Points of interest
- Seasonal Points of Interest
- Nearby Events



Broader applications

- Will provide context for trail design “what if” scenarios
- Open Source, and thus shareable over across organizations with no licensing restrictions
- Applicable to larger regional trail network

Data, GIS, and Maps: Tools for Driving Trail Progress

Conclusions:

- We're in the Big League Now.
 - Trail Network is a Quality of Life Indicator for successful regions
 - Beyond Recreation - Add real alternative transportation and real health/fitness.
 - Score Cards Matter! Let us measure ourselves the way the nation will measure us
- Inventory + Data + Maps provide professional level tools for
 - Decision Making
 - Prioritization
 - Planning
 - Engagement