

GIS Based Data Collection / Network Planning On a City Scale



Healthy Communities
Active Transportation Conference
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10:00 AM
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The Greenway Collaborative, Inc.
Ann Arbor, Michigan

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The Purpose of GIS Based Network Planning

- Determine what is possible
 - Focus on near-term projects
- Help establish what is appropriate
 - Addressing roadway conditions and context
- Identify where are improvements needed the most
 - Bang for the buck
- Communication
- Sharing information



GIS as a decision support tool not a decision making tool

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Public Input vs. Black Box

- The purpose of inventory and analysis is to help inform decisions – not make them
- Public input is just as important an input as any other analysis
- Should integrate public input into the GIS system



Too many variables to use GIS in a practical cost effective way to determine an "ideal" network

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ROW Database Conventions

- Use road centerline data for all improvements within a road ROW
- Ties to standard road referencing systems
- Use right side / left side based on line direction to record things like sidewalks
- This permits mapping sidewalks at a number of scales
- Typically use state base so we can look beyond municipal boundaries



For network planning what is important is that there is a path along side the road, the nature of the setback, the width of the path and how many driveways it crosses. The exact location of the centerline does not matter

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Independent Trail Database Conventions

- Housed in a separate layer from the roadways
- Depth of information collected depends on the budget
- Need to at least address function – is it a true shared-use path or just a local trail or walkway
- Status is important
 - Existing
 - Under development
 - Planned
 - Proposed



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Intersection Database Conventions

- Point based
- Different databases for signalized vs unsignalized intersections
- For detailed intersection analysis each point may relate to a spreadsheet that looks at every ramp, crossing, signal and controller



Setting up a database for an intersection can be rather complex

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Cost Benefit

- Always ask – did we really use the data
- The inventory should be proportional to the recommendations
- Focus on those things that can be changed

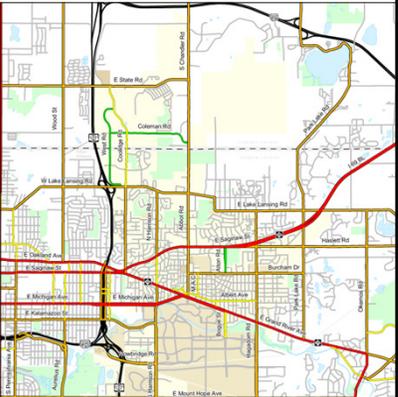


Some clients / projects want a high level of analysis to help prioritize projects, others are more focused on public input

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National Functional Classification

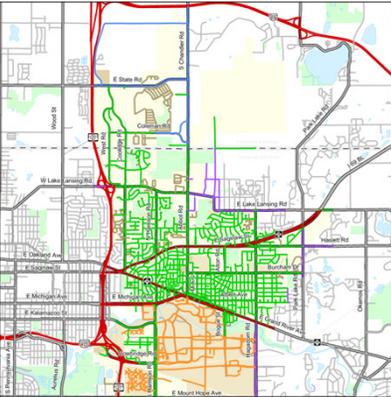
- Which roads may be more auto oriented vs .bike pedestrian oriented streets
- Typically part of state database



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Road Jurisdiction

- Who has the final say on the road
- Typically part of state database



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Average Daily Traffic

- Frequently regional governments are the best source



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Speed Limit

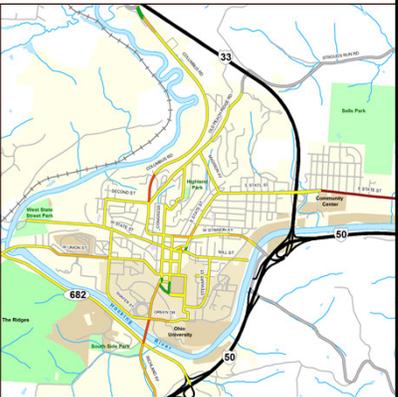
- Actual running speed would be ideal
- Typically use posted speed
- Sometimes use Google Streetview and crash reports to get data



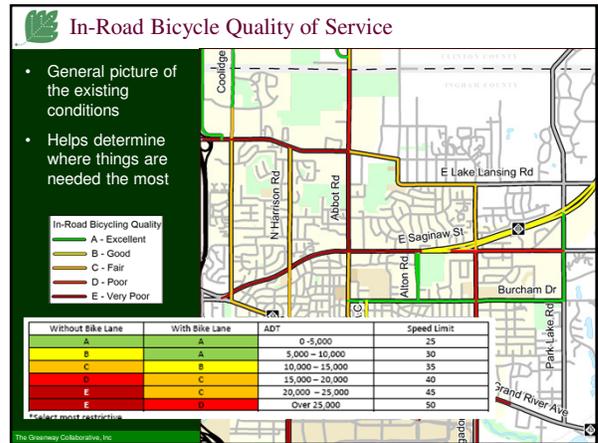
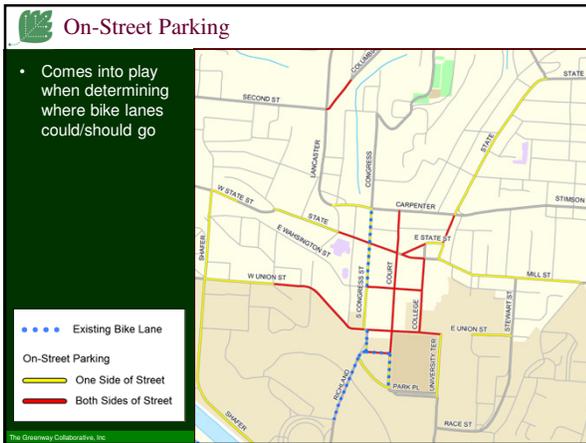
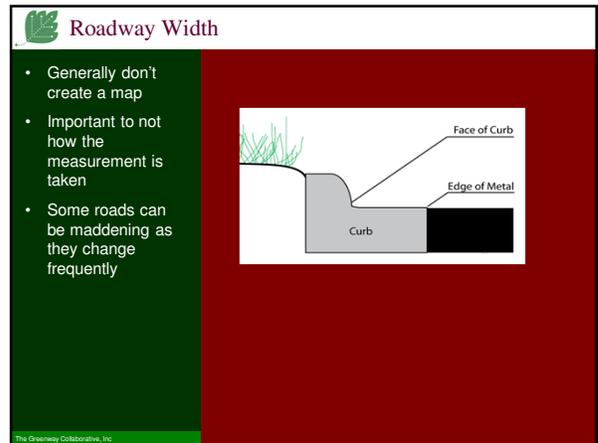
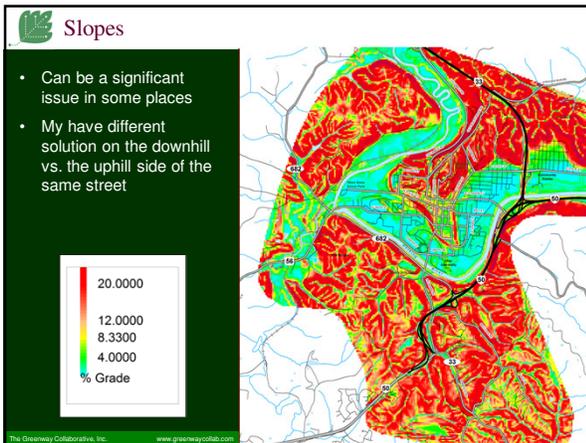
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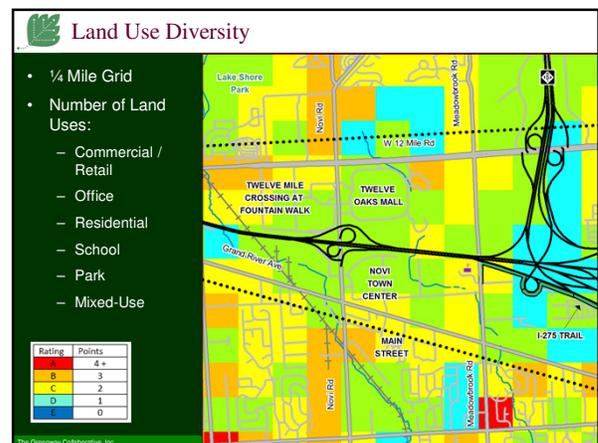
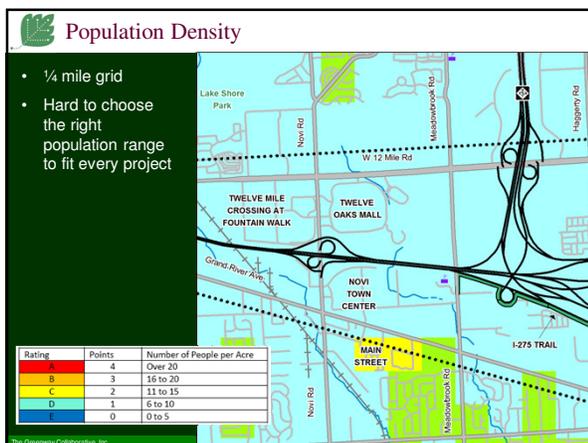
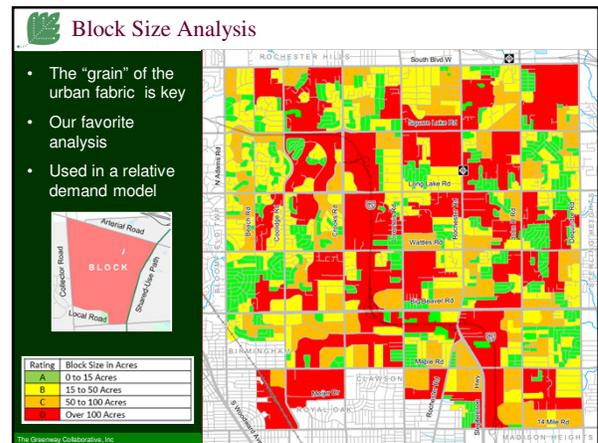
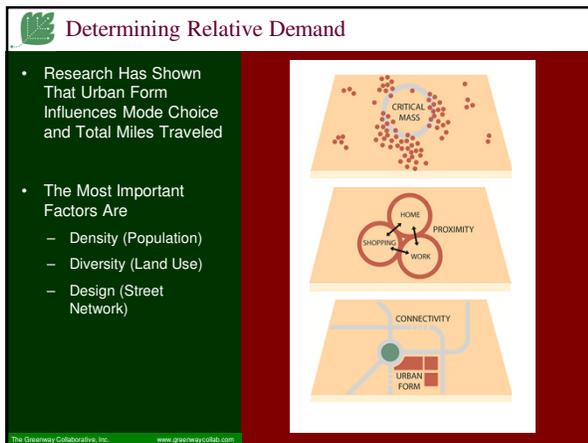
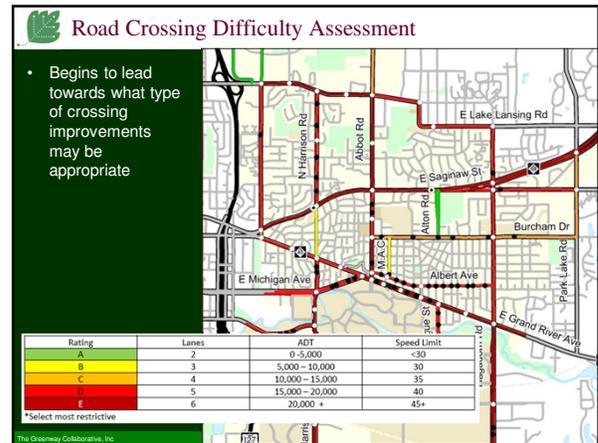
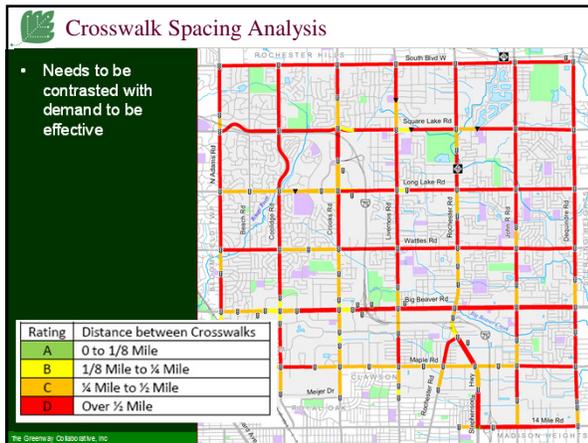
Existing Road Cross Section

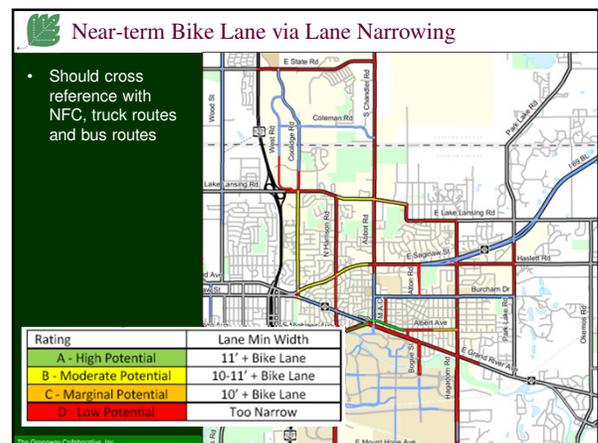
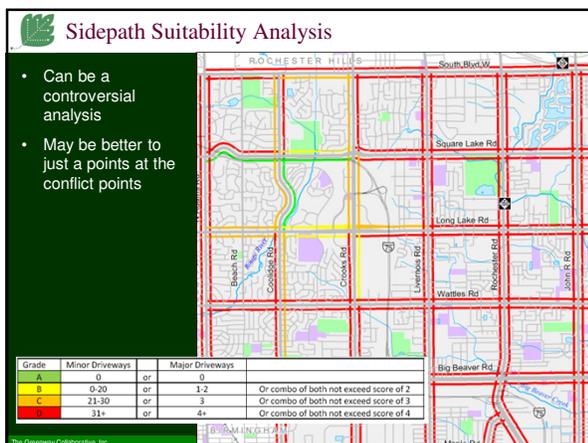
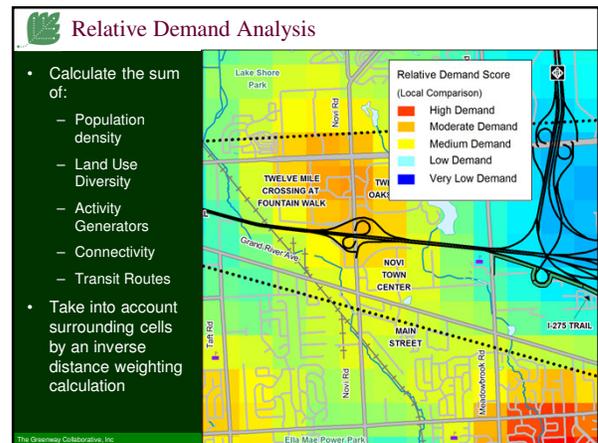
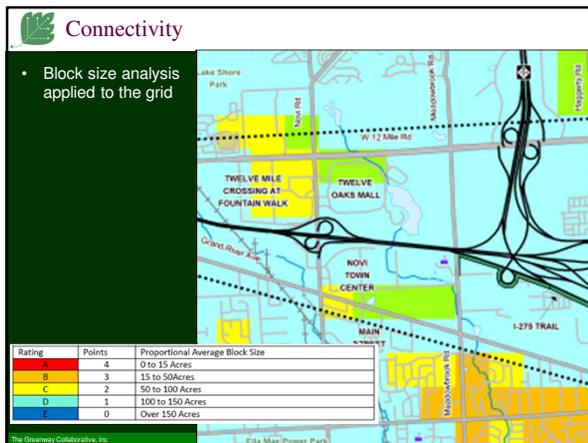
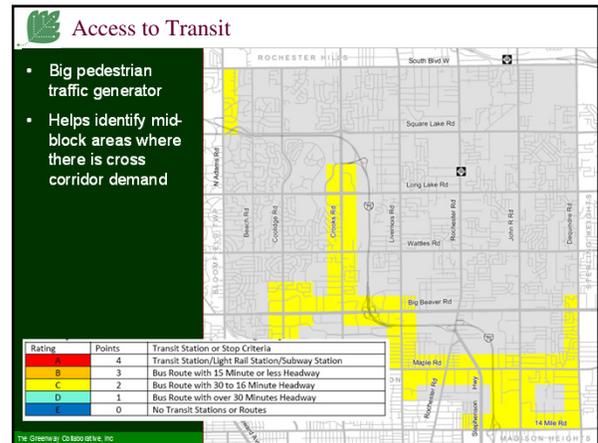
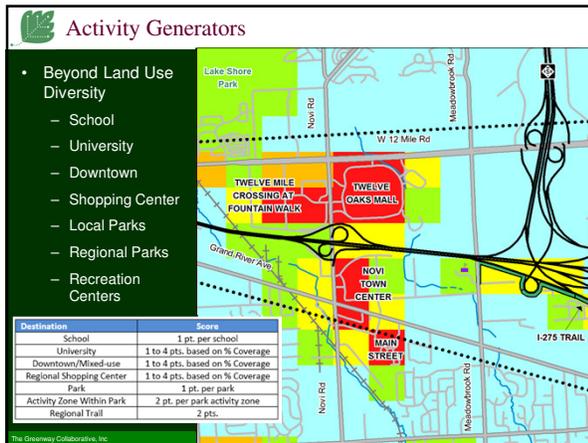
- Typically use air photo to get this data
- Ignore turn lanes at intersections and by-pass lanes

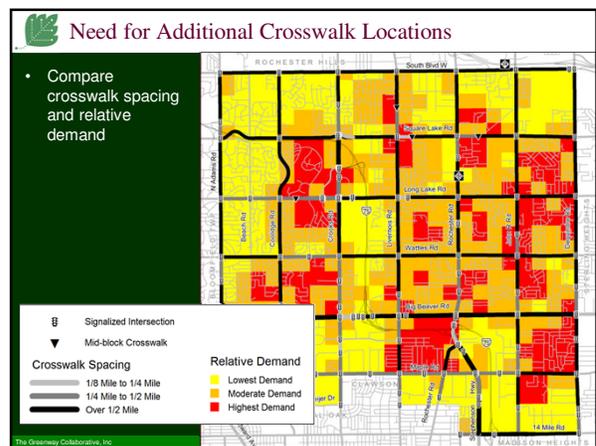
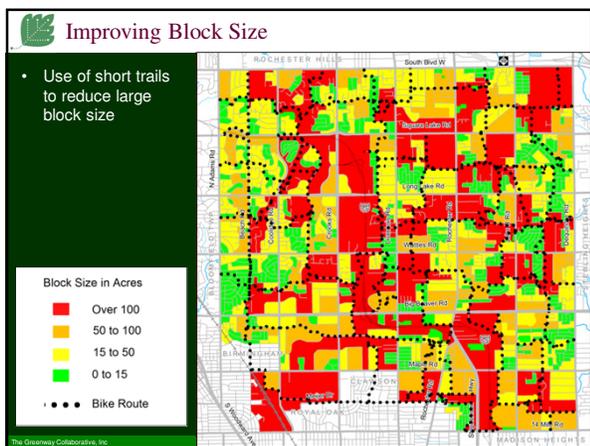
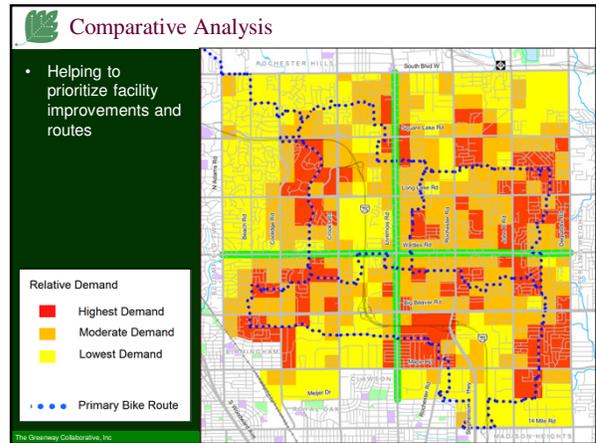
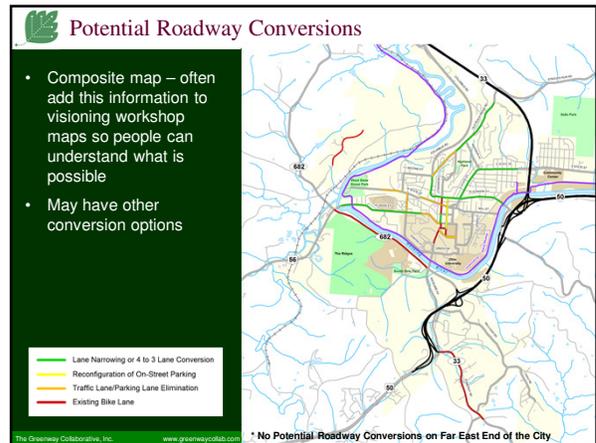
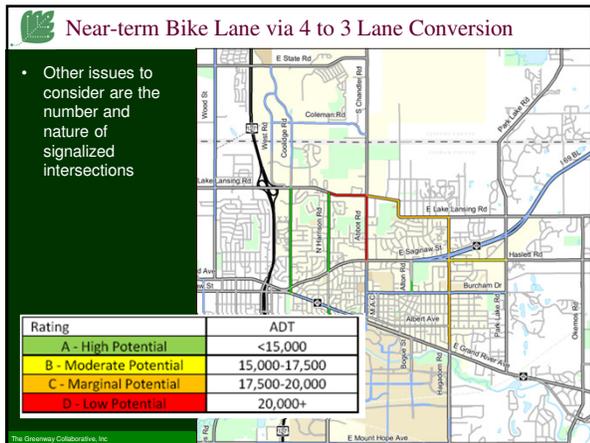


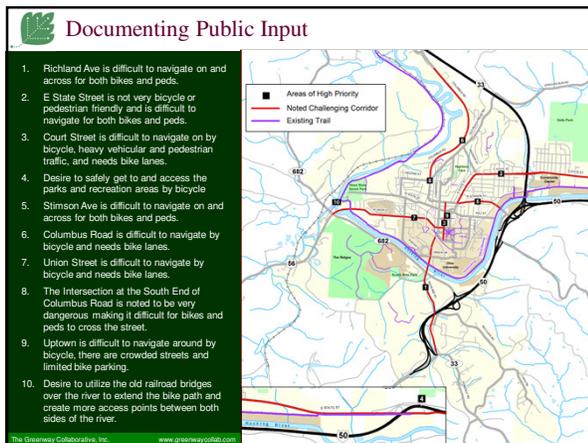
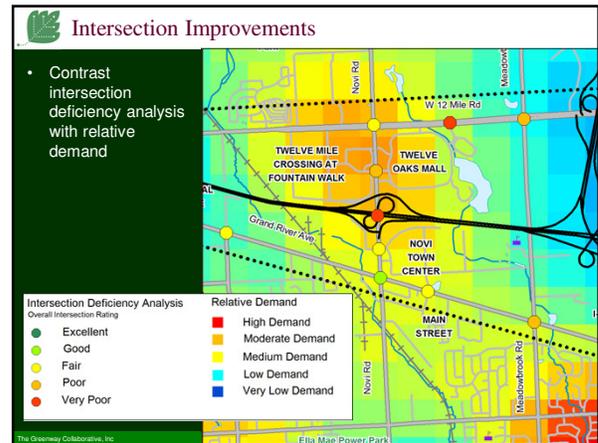
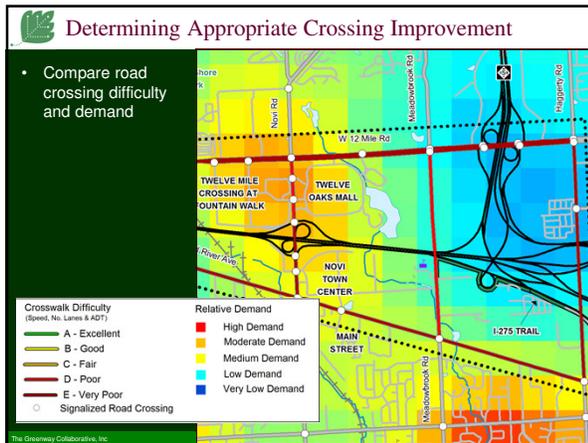
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Questions or Comments

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