Green Infrastructure Vision for Southeast Michigan

SEMCOG ... Shaping the future of Southeast Michigan

Southeast Michigan Council of Governments
What is Green Infrastructure?
Economic Benefits Residential

- 3-14% increase in residential property values when located near parks, wetlands, and trees
Economic Benefits

Commercial

- Consumer spending increased & returning more frequently to stores with tree canopy
- Increased rental rates (7% higher) with quality landscaping
Green Infrastructure Vision

Chapters

- Quantity
- Quality
- Accessibility
- Connectivity
- Air, Water, Transportation
- Vacant Land

- Public Interest
- Sustainability
- Visioning the Future
- Implementing the Vision
Green Infrastructure Vision for Southeast Michigan

- Benchmark what we have
- Vision where we want to go
- Regional policies how to get there
## Southeast Michigan Land Cover

<table>
<thead>
<tr>
<th>Leaf On</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impervious</td>
<td>14%</td>
</tr>
<tr>
<td>Tree</td>
<td>33%</td>
</tr>
<tr>
<td>Open</td>
<td>49%</td>
</tr>
<tr>
<td>Bare</td>
<td>1%</td>
</tr>
<tr>
<td>Water</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
Impervious Cover Benchmark

- 35% Roads
- 25% Buildings
- 40% Other
  » Parking Lots
  » Driveways

Chicago, IL
Transportation Network

- Major Roadways
  - Arterial; Collector
  - Local, county, state

- 87 square miles impervious cover
Benchmarking Roadway Land Cover

- Impervious: 70%
- Open Space: 30%
- Tree Canopy: 10%
- Urban Bare Land: 0%
- Water: 0%
Community Level Land Cover
City of Farmington Hills

<table>
<thead>
<tr>
<th>Type</th>
<th>Acres</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impervious</td>
<td>7,935</td>
<td>37.2%</td>
</tr>
<tr>
<td>Trees (woody vegetation, trees)</td>
<td>6,676</td>
<td>31.3%</td>
</tr>
<tr>
<td>Open Space (agricultural fields, grasslands, turfgrass)</td>
<td>6,427</td>
<td>30.2%</td>
</tr>
<tr>
<td>Bare (soil, aggregate piles, unplanted fields)</td>
<td>73</td>
<td>0.3%</td>
</tr>
<tr>
<td>Water (rivers, lakes, drains, ponds)</td>
<td>196</td>
<td>0.9%</td>
</tr>
<tr>
<td>Total Acres</td>
<td>21,308</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Benchmarking What We Have

- **Quantity**: Tree Canopy, Parks
- **Quality**: Wetlands
- **Accessibility**: parks, large parks, trails, water
- **Connectivity**
Green Infrastructure Accessibility

- Access to public parks,
- Access to public parks over 200 acres,
- Access as part of attracting and retaining young professionals,
- Using green infrastructure to provide access to waterways,
- Access to trails
- Universal design
- Subwatershed Planning Areas
- Level of Impervious Cover
  - 10% and higher
- Quantify areas of opportunity
  - Roadways
  - Institutional
  - Parking Lots
  - Riparian Corridors
Opportunities for Constructed Green Infrastructure

• Institutional Properties
  – Over 25,000 acres of lawn

• Parking Lots
  – Over 50,000 acres
Opportunities for Constructed Green Infrastructure

- **Roadways**
  - 55,000 acres of major roads
  - Almost 30,000 acres of open space in the right-of-way
  - Redirecting runoff to available right-of-way
Transportation GI Opportunities

- Redirecting runoff to available right-of-way
- Constructing curb bumpouts at intersections for traffic calming effect
- Developing linear streetscapes
- Utilize vacant property
- Road diets
Visioning Where We Want to Go

- Green Infrastructure Vision Task Force
- Nine Visioning Sessions
- Public Online Poll
Where Should Green Infrastructure be Located?

- **Visioning Session**
  1. Along rivers & lakes
  2. Major roadways
  3. Near parks
  4. Vacant Property

- **Public Online Poll**
  1. Major roadways
  2. Near parks
  3. Vacant property
  4. Along rivers & lakes
Green Infrastructure and Water Quality

• Protecting water quality number one benefit of green infrastructure

• Implement constructed green infrastructure
Visioning Where We Want to Go
Overall Regional Policies

• Manage the system as a network
• Focus additional public investment on connecting the system and meeting unmet recreation needs
• Protect, manage, restore high quality, unique natural areas
• Public accessibility to the green infrastructure network is paramount
Overall Regional Policies

• Use vacant property to connect, buffer, provide access, and solutions
• Educate and promote to elected officials and public
• Ensure sustainability through maintenance, fiscal sustainability, and partnerships
Overall Regional Policies

- Increasing tree canopy is a priority due to the numerous benefits
- Focus constructed green infrastructure on publicly-owned land and large impervious surfaces
- Roads can be used to link the network through green streets and trails
Implementing the Vision

Lansing, MI
Green Streets Grant
EPA GLRI Funding

Oakland County, MI
Grant Outcomes

- 4 counties
- 160 acres of runoff
- 30 acres of constructed GI
- Bioretention; Tree planter box
- Native plant grow zones
- 27,000 pounds sediment reduction
- 50 pounds phosphorus reduction
- 20 MG runoff reduction
- Great Lakes Green Streets Guidebook

Source: Robert W. Domm
A Compilation of Road Projects Using Green Infrastructure

Great Lakes Green Streets Guidebook

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Great Lakes Green Streets Guidebook

- Why Green Streets
- Local & Regional Planning Considerations
- Technical Challenges
- Funding Challenges
- Types of GI Techniques
- 26 Case Studies – Great Lakes Watershed

Village of Pinckney, MI
Collaborative Watershed & Transportation Planning

- EPA Technical Assistance
- Establish Runoff Reduction Targets
- Quantify roadway contribution
- Identify opportunities
- MDOT & Long Range Planning

Buffalo, NY
Bell Creek Subwatershed

- 26,651 Acres
- 41% Impervious
  - 2,936 Bldgs
  - 8,098 Pavement
- 7,270 Acres Open Space
- 2,638 Ac Parking Lots
- 2,113 Ac Inst Land
- 1,827 Ac Park/Rec
Tonquish Creek Subwatershed

- 15,959 Acres
- 42% Impervious
  - 1,793 Bldgs
  - 4,861 Pavement
- 4,519 Acres Open Space
- 1,554 Ac Parking Lots
- 1,049 Ac Inst Land
- 901 Ac Park/Rec
Transportation Need Vs. Revenue

- Competing Needs
  - Transit
  - Non-motorized
  - Bridges
  - Safety
  - Congestion
  - Pavement
  - Stormwater

- Revenue Sources
  - Federal Funding
  - Property Taxes
  - Gas Tax

Grand Rapids, MI
Transportation Revenue Shortfall

Total Transportation Need

Revenue Shortfall

Revenue Available

$30 billion annual shortfall
Collaborative Transportation Planning

- Prioritize roadway green infrastructure
- Collaborate with overlapping jurisdictions
- Create partnerships
- Identify where there is flexibility in requirements
- Consider alternative approaches & multiple outcomes
Next Steps

- General Assembly Approval 3/27
- Convene Parks and Recreation Providers
- SE MI Partners Meeting (3/18)
  - Target Setting
  - Priorities
- SEMCOG Universities
Thank You
Southeast Michigan Council of Governments