Southeast Michigan Council of Governments
Developing Regional Solutions

SEMCOG
Southeast Michigan Council of Governments
GREEN INFRASTRUCTURE AND TRANSPORTATION

Planning & Techniques for Implementation

Kelly Karll, PE
Today’s Discussion

- Green Infrastructure Vision for Southeast Michigan
- Green Infrastructure Techniques Along Roadways
- Planning for Green Infrastructure and Conservation along Roadways
- MDOT’s Watershed Planning in the Metro Region
- TAP Funding
Rain garden
Grow Zone
Community Garden
Native vegetation
Rain garden
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

Luna Pier, MI
<table>
<thead>
<tr>
<th>Land Cover Type</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Leaf On</td>
<td></td>
</tr>
<tr>
<td>Impervious</td>
<td>14%</td>
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<tr>
<td>Tree</td>
<td>33%</td>
</tr>
<tr>
<td>Open</td>
<td>49%</td>
</tr>
<tr>
<td>Bare</td>
<td>1%</td>
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<tr>
<td>Water</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</tbody>
</table>
Major Roadways
- Arterial; Collector
- Local, county, state

87 square miles impervious cover
Direct conveyance to storm sewer system and local waterways.
ALTERNATIVES TO DIRECTLY CONNECTED IMPERVIOUS AREA
PLAN FOR THE ALTERNATIVE – CURB CUTS, ROOTS AND AGGREGATE ARE YOUR FRIENDS

Root System Depths and Heights

Jeffery C. Domm

City of Ann Arbor
RESIDENTIAL EXAMPLES

- Curb cuts with curb bumpouts and bioretention
RESIDENTIAL EXAMPLES
Yes this can require more public involvement.
COMMERCIAL/DOWNTOWN

- Redirect runoff from roadway
- Construct vegetated areas
- Buffer between pedestrian areas and traffic
• Curb cut alternative
GREEN STREETS GRANT EPA GLRI FUNDING
County Campus Opportunity:
- 260 acres actively managed
- 100 acres irrigated
- 5 miles of road

County Campus Issues:
- Ponding Water - Soggy Turf-less Areas
- Road Runoff
- Large unused mowed areas
PROJECT DESIGN

**Identified:**

- 15 individual native plant grow zones areas...
- About 16 acres...
- Areas that receive a majority of the county campus adjacent roadway runoff...
OAKLAND COUNTY CAMPUS
Why Green Streets
Local & Regional Planning Considerations
Technical Challenges
Funding Challenges
Types of GI Techniques
26 Case Studies – Great Lakes Watershed

http://www.semcog.org/Stormwater.aspx
Reduce the Impacts of Roads

- Link the network through green streets and trails
- Align watershed and transportation planning
- Encourage infrastructure collaboration
- Use vacant property to connect, buffer, provide access, and solutions
TRANSPORTATION GI OPPORTUNITIES

- Determine community and watershed priorities
- Integrate with non-motorized priorities
- Redirect runoff to available right-of-way
- Construct curb bumpouts at intersections for traffic calming effect
- Develop linear streetscapes
- Use excess road ROW
- Utilize vacant property
MDOT WATERSHED AND TRANSPORTATION PLANNING

1. Stakeholders & Subwatershed selection

2. Integrated Plan Review
   - 2040 Regional Transportation Plan;
   - Transportation Improvement Program for SE Michigan;
   - Watershed Management Plans;
   - NPDES MS4 permit requirements;
   - MDOT early coordination & design/construction process;
   - TMDL information within the Watersheds;
   - Recommendations from the Green Infrastructure Vision;
   - Wetland mitigation requirements and approaches;
   - Stormwater banking opportunities; and
   - “excess capacity” model information.
4. What are the alternative approaches to wetland mitigation? Banking? Incorporating stormwater Mgt? partnerships?

5. Field Investigations – depending on road classification, what are types of feasible techniques?

6. Framework for Stormwater Management
   – Planning and Technical Considerations
Funding:
Transportation Alternatives Program (TAP)
TAP OVERVIEW

- SEMCOG $5 million (annually)
- Non-motorized pathways/trails
- Streetscape & community improvement projects
- Environmental Mitigation
  - Green infrastructure & stormwater management
- Pedestrian safety & accessibility projects
  - “Safe Routes for Non-Drivers”
- Safe Routes to School
MATCH REQUIREMENTS

- 20 percent minimum from non-federal sources
- Encourage partnerships with foundations, businesses, nonprofits
- Higher match and/or partnerships may be given more weight
ELIGIBLE ENTITIES

- Southeast Michigan Act 51 agencies are eligible to submit projects
  - Cities/villages
  - County road agencies
  - Transit agencies
  - Others through eligible entities (*need Sponsorship Agreement*)
FACTORS CONSIDERED

- Mix of project types
- Size/cost of project
- Geographic distribution
- Resources beyond minimum match
- Tie to other community projects
- Promotes local & regionally significant outcomes
TAP IN SOUTHEAST MICHIGAN
HOLISTIC OUTCOMES

• Connectivity
• Access
• Environmental Quality
• Desirable Communities
KEY POINTS FOR AWARDED PROJECTS

- 39 projects awarded funding
  - FYs 2013 – 2015
- Average project size/cost - $415,000
  - Range $88,000 to $1.14 million
- Average match amount = 35%
CONTACT INFORMATION

Kelly Karll, PE
karll@semcog.org
313-324-3375

TAP CONTACT
Kevin Vettraino, AICP
vettraino@semcog.org
313-324-3357