Green Infrastructure
A Stormwater Management Tool

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Agenda

Introduction
Indianapolis DPW GI Background
Design Challenges
Lessons Learned
Closing Thoughts/Q&A
The vision of the Mayor was implemented by several entities:

- Office of Sustainability
- DMD
- DPW - Transportation
- DPW - Stormwater
Indianapolis DPW Background

First Project – Approximately 1998

Approximate Inventory

- Porous Pavers – 5,100 square yards
- Porous Concrete Curb – 1,000 linear feet
- Rain Gardens – 14,000 square feet
- Porous Concrete – 7,100 square feet
- Porous Asphalt – 31,000 square feet
- Wetland/Bioswale – 40 Acres
- Hybrid Ditches - Unquantified
Design Challenges

► What to use?

► Stormwater Manual:

► GI Supplement:
Design Challenges

► Applying appropriate GI type for the site
► Staying within Budget
► Safety and Functionality
► Public Perception
► Maintainability
  ► Adequate Access
  ► Available Equipment, Staff, Funding
GI Types Indy has Constructed

- Pervious Pavements
  - Stone Infiltration Trench
  - Permeable Pavers
  - Porous Asphalt
  - Porous Concrete
  - Geopave (Access Drives Only)

- Bioretention
  - Wetlands
  - Detention Basins
  - Rain Gardens
  - Hybrid Ditches
Pervious Pavements

- May be a good fit where...

  - Too flat for traditional storm sewer
  - Limited tree cover and minimal traffic
  - Limited capacity in combined sewer or MS4
  - Limited R/W
Pervious Pavements Cont’d
Lessons Learned

- Stone Infiltration Trench
- Early concept
- Limited functional lifespan
- O&M concerns
Pervious Pavement’s Cont’d
Lessons Learned

► Pervious Pavers
► Longer functional lifespan
► Manageable O&M
► Not ideal with heavy tree cover
Pervious Pavements Cont’d
Lessons Learned

- Pervious Asphalt and Concrete
- Not successful
- Crumbling concrete
- Clogged asphalt
Bioretention

► May be a good fit where...

► Too flat for traditional storm sewer

► Limited capacity in combined sewer or MS4

► Adequate R/W
Bioretention Lessons Learned

 ► Wetlands/Detention Basins
 ► Positive experience
 ► Don’t forget access drives!
Bioretention Lessons Learned

► Rain Gardens
► 2:1 is too steep
► Public perception challenge
► Costly O&M
Bioretention Lessons Learned

► Hybrid Ditches
► Successful in flat areas
► Minimal O&M
Closing Thoughts

- Requires buy-in from all
- Upfront planning
- Maintenance
Questions?

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