Green Infrastructure
A Stormwater Management Tool

Rachel Wilson – Indianapolis DPW
Bob Page – HNTB Corporation
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:
http://www.indy.gov/eGov/City/DPW/Business/S specs/Pages/UpdatedSt o mWaterManual.aspx

► 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?

Contact Information:

Robert Page
rtpage@hntb.com

Rachel Wilson
Rachel.wilson@indy.gov