Implementing Green Infrastructure in a Neighborhood Street Project

Bob Page – HNTB Corporation

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Agenda

- Introduction
- Indianapolis DPW GI Background
- Design Challenges
- Lessons Learned
- Closing Thoughts/Q&A

DPW GI Background

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

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Design Challenges

- What to use?
- Stormwater Manual:
  http://www.indy.gov/eGov/City/DPW/Business/Specs/Pages/UpdatedStormWaterManual.aspx
- GI Supplement:
  http://www.indy.gov/eGov/City/DPW/StormWaterProgram/Documents/GSD_FINAL_07.30.2015.pdf




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

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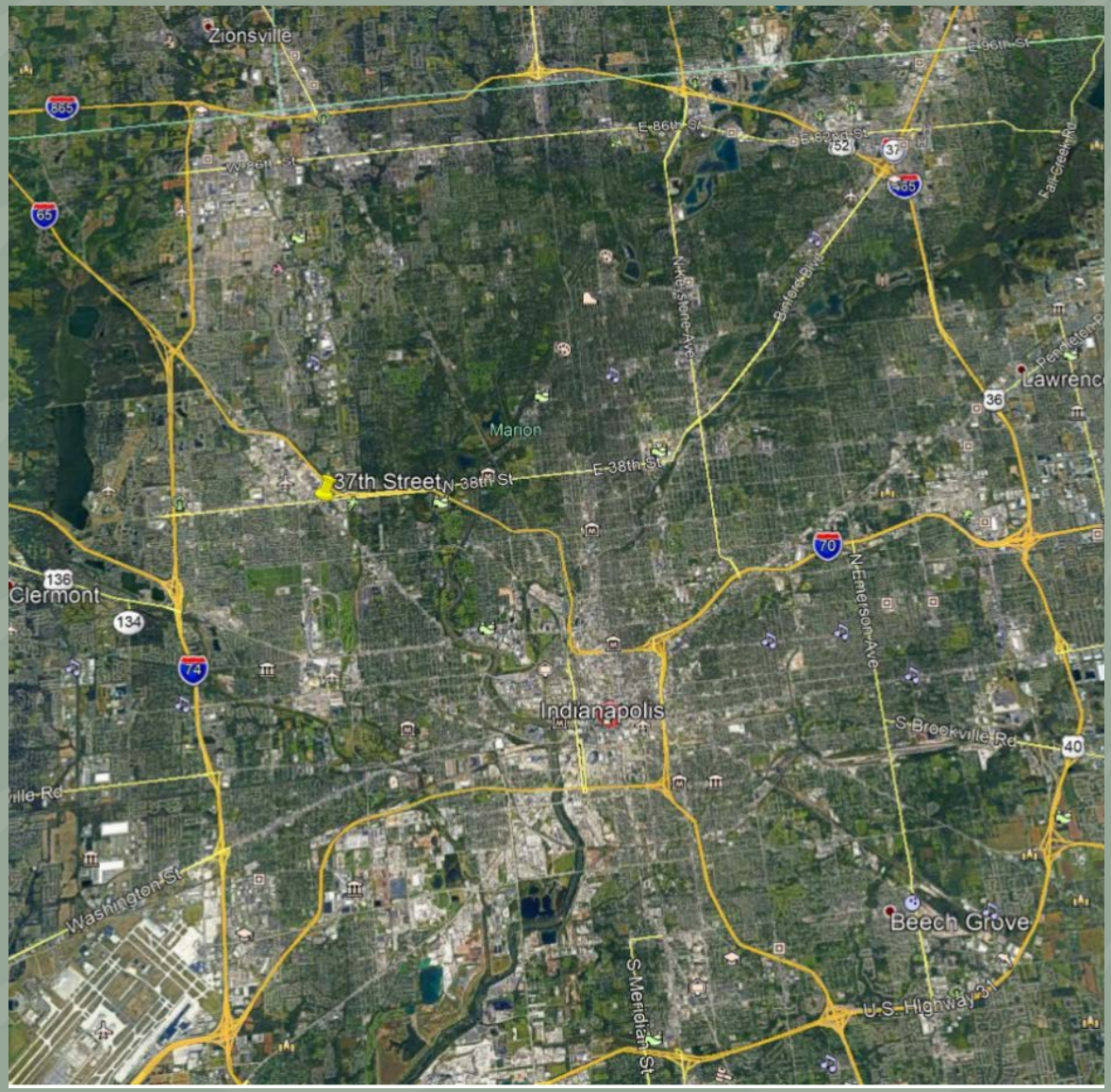
37th Street Project



37th Street Project

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37th Street Project

37th Street Project

37th Street Project

37th Street Project

Design Process

- Evaluate Scoping Report
  - 2 options for drainage
  - Carry flows to the north and tie into existing system
  - Carry flows to the south and tie into existing system

Design Process

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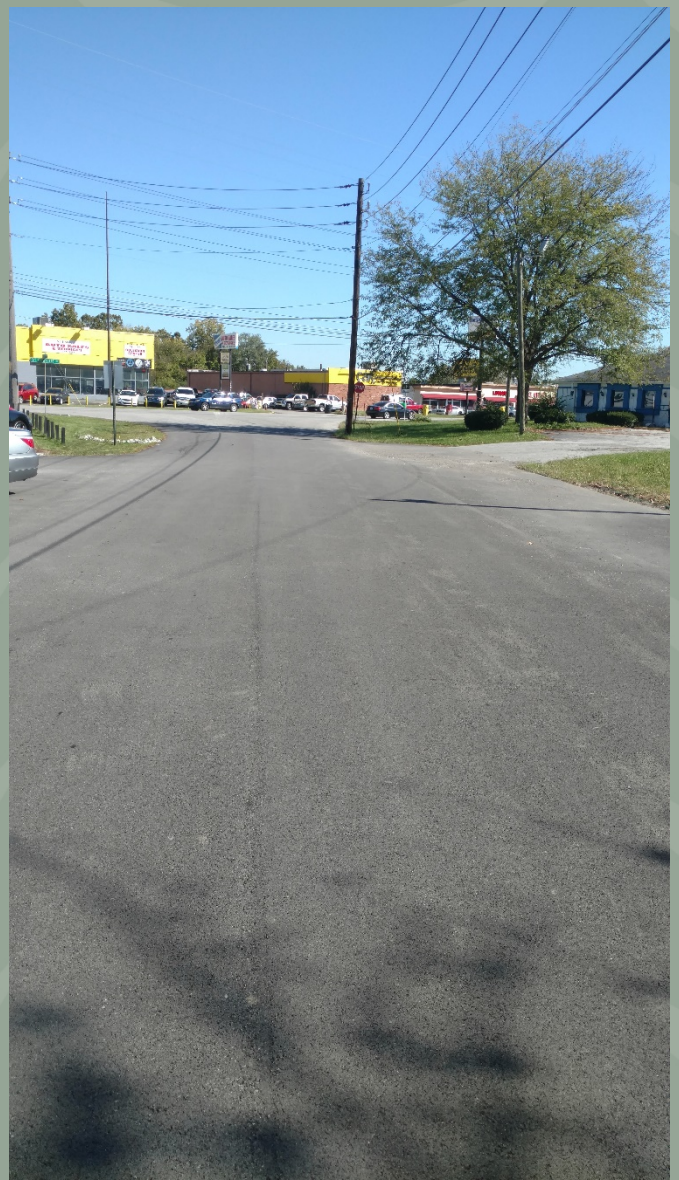
Design Process

- 30% Design – Gravity Options not feasible
- Alternative 1 – Carry flows to west
- Alternative 2 – Carry flows farther south

Design Process

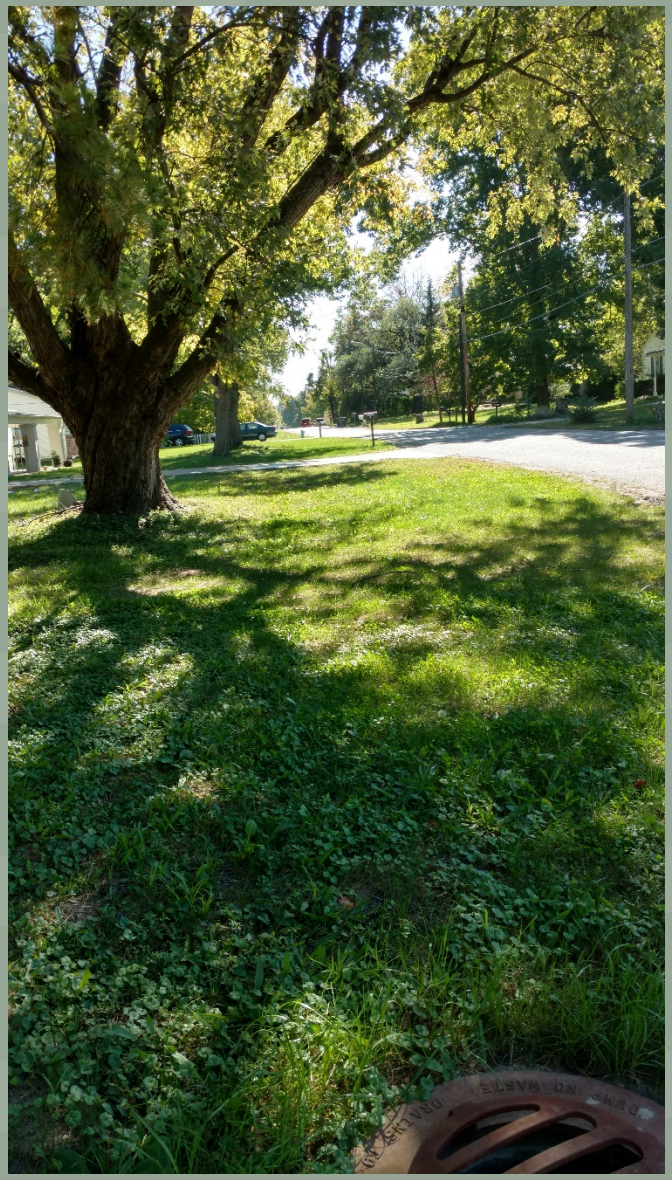
- Evaluate possible solutions
- Determine flow rates
- Look at soils/drainage patterns

Construction



Construction

Construction



Construction

Lessons Learned

- Communicate with other utilities
- Combinations of green/gray infrastructure work
- Coordination is key

Questions?

Robert Page
rtpage@hntb.com
317-917-5307