

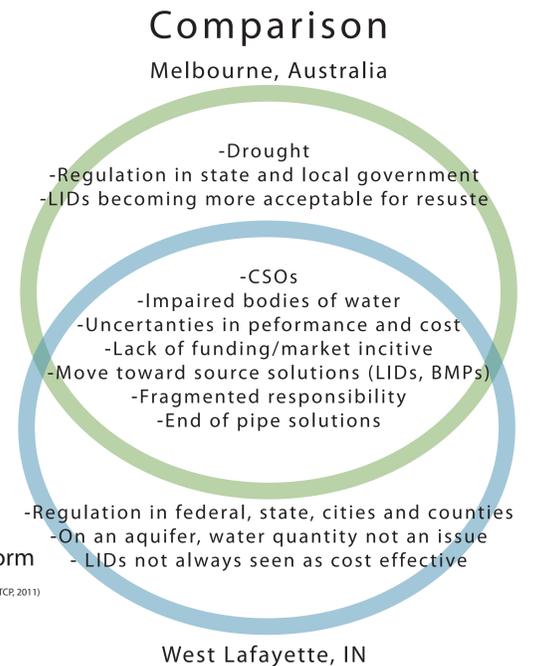
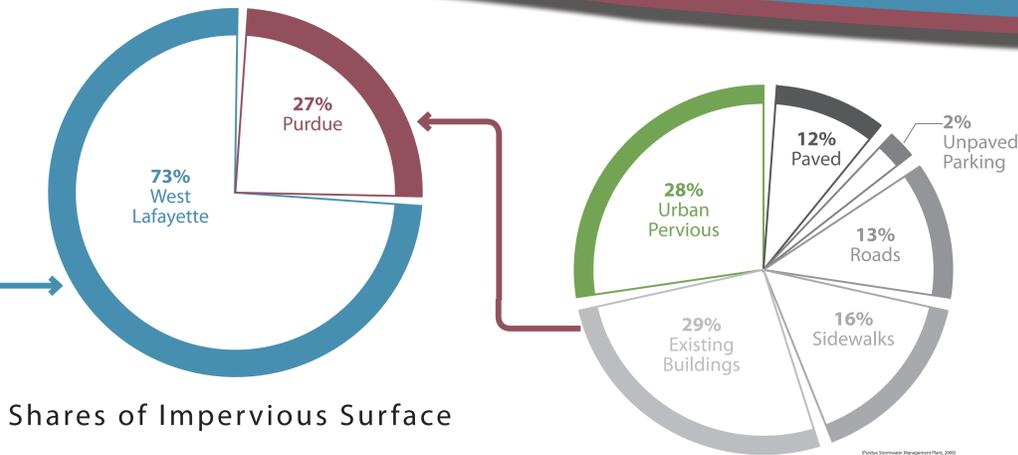
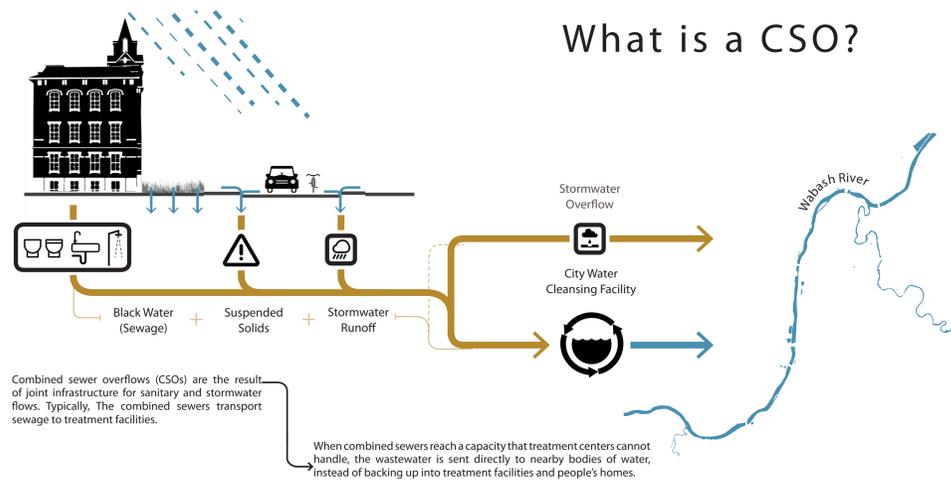
# Cooperative Sustainable Opportunities

## Ecological Solutions for Built Environment Complexities at Purdue University and the City of West Lafayette

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### Stakeholders Goals

- Purdue:**
- Recognize the link between rain and groundwater replenishment
  - Prevent ground and surface water pollution
  - Raise awareness of water in built environments
  - Be a role model in managing water as a valuable resource

(Purdue Stormwater Management Plan, 2009)

### West Lafayette:

- Allow for recreation on the Wabash River
- Create a well balanced aquatic community
- Prevent social and economic hardship
- Meet federal and state regulations.

(West Lafayette CSO LTCP, 2011)

### Conditions

- 3 Outfalls**
- 1 at Dehart St.
  - 2 at Quincy St.

### West Lafayette CSO Zone

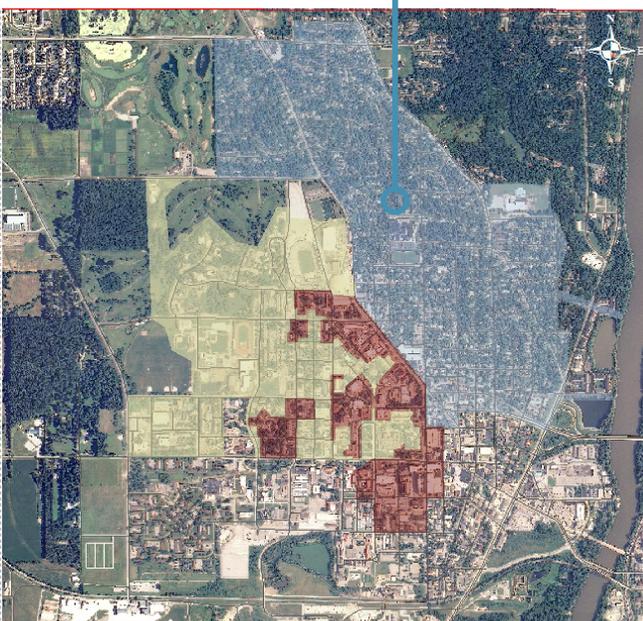
- 677 acres
- 84.5% of Area

### Purdue CSO Zone

- 124 acres
- 15.5% of Area

(Purdue Stormwater Management Plan, 2009)

Data Files for GIS:  
Indiana Digital Elevation Model (DEM) dataset:  
Originator: U.S. Geological Survey (USGS)  
Publication Date: 2009  
Title: The National Elevation Dataset (NED)  
Edition: 2  
Online Linkage: <http://nationalmap.gov> and <http://seamless.usgs.gov>  
Landscape Topography Polygon dataset:  
Originator: Indiana Department of Transportation  
Publication Date: 2006/09/13  
Title: ROAD\_2005\_INDOT\_IN Indiana Roads from INDOT and TIGER files  
Edition: 2005  
Online Linkage: <http://gis.indiana.edu>  
Digital Orthophoto Imagery Dataset:  
Originator: U.S. Geological Survey (USGS)  
Publication Date: 2009  
Title: National Elevation Dataset (NED)  
Edition: 2  
Online Linkage: <http://nationalmap.gov> and <http://seamless.usgs.gov>  
West Lafayette Digital Aerial Graphic:  
Originator: U.S. Geological Survey (USGS)  
Publication Date: 1999/10/02  
Title: Lafayette West (30000046) Enhanced Digital Raster Graphic  
Online Linkage: <http://www.beatfootprints.com>  
Roads and Surfaces Dataset:  
Originator: United States Department of Commerce  
Publication Date: 2006/09/13  
Title: ROAD\_2005\_INDOT\_IN Indiana Roads from INDOT and TIGER files  
Edition: 2005  
Online Linkage: <http://gis.indiana.edu>  
Remotely Sensed Land Cover Classification to 2006 by using Landsat imagery change detection methods. Remote Sensing of Environment, Vol. 113, No. 6, pp. 1133-1147.

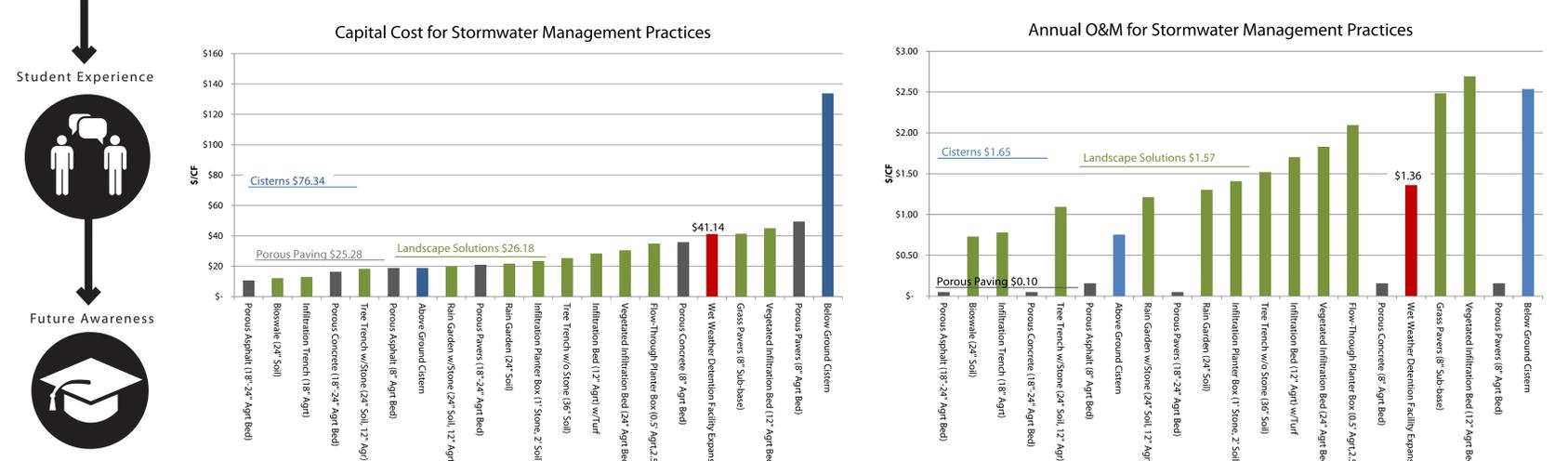
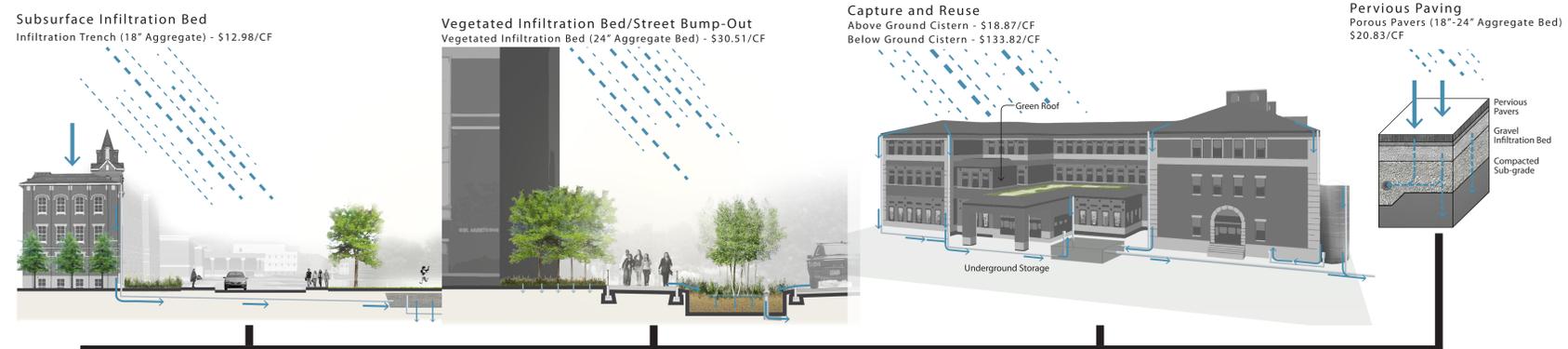


**Purdue CSO Zone**  
**Purdue Sewage Contribution Zone**  
**West Lafayette CSO Zone**

### Projections

- Wet Weather Facility; Expand by 2 million gallons at price of \$11 million.
- Western Interceptor Upgrades; \$13.5 million.
- Enable storage of the 1 year 1 hour storm, and transportation and treatment up to the 10 year 1 hour storm

### Alternatives - BMPs & LIDs



Sources: (Purdue Stormwater Management Plan - Figure 3.28), (Hicks, 2008), (Solloway, 2013), (Woodward and DeBuask), (Texas WDB, 2005)

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