

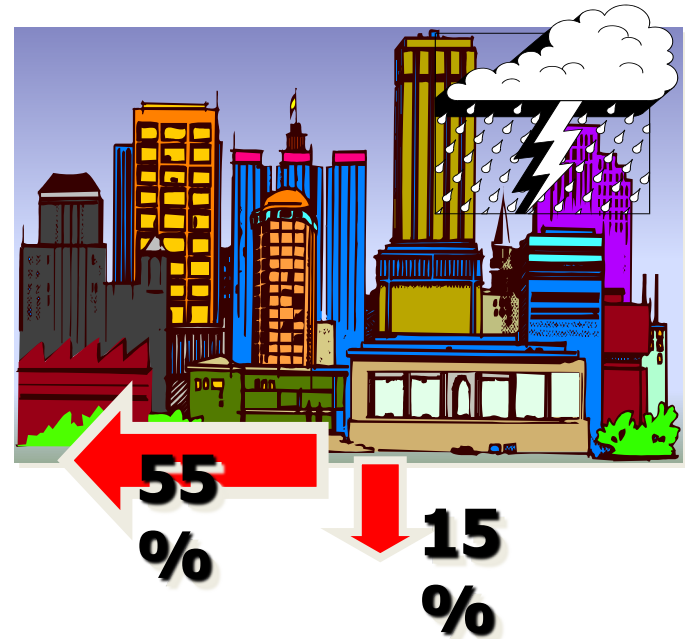
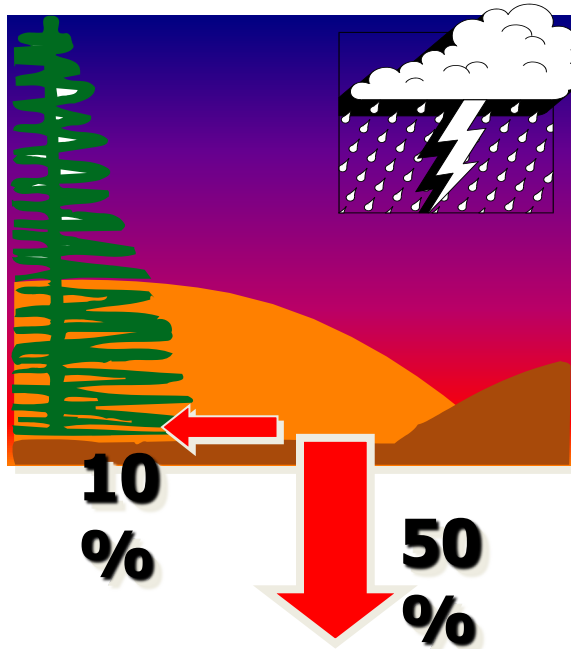


# **Elected Official Training – Why Manage Stormwater?**

Madison County, Mississippi  
Phase II Stormwater Program  
December 4, 2023



# As Development Intensity Increases, so does the Potential for Water Pollution



“An inch of rain falling on one acre of hardened surface, like a parking lot, produces 27,000 gallons of stormwater runoff.”



# Pelahatchie Bay (2020)





# Dredging the Bay - \$2.7 Million

**That's a lot of dirt! Dredging project to remove 90K cubic yards of sediment from Reservoir bottom**



Heavy equipment used to break up sediment as part of the dredging work being done at the Barnett Reservoir. (Mark Beyea, PRVWSD)

By [Anthony Warren](#)

Published: Jul. 12, 2022 at 4:16 PM CDT



RANKIN CO., Miss. (WLBT) - Over the next year, enough dirt will be removed from the bottom of the Barnett Reservoir to fill more than 27.5 Olympic-size swimming pools.



# Intense Storm Events





# Downstream Flooding...



“Damages from urban flooding cause \$9 billion in losses annually.” – American Society of Civil Engineers



# Regulatory History

- 1988 EPA Report to Congress
  - “Stormwater is the leading cause of water quality impairment in the U.S.”





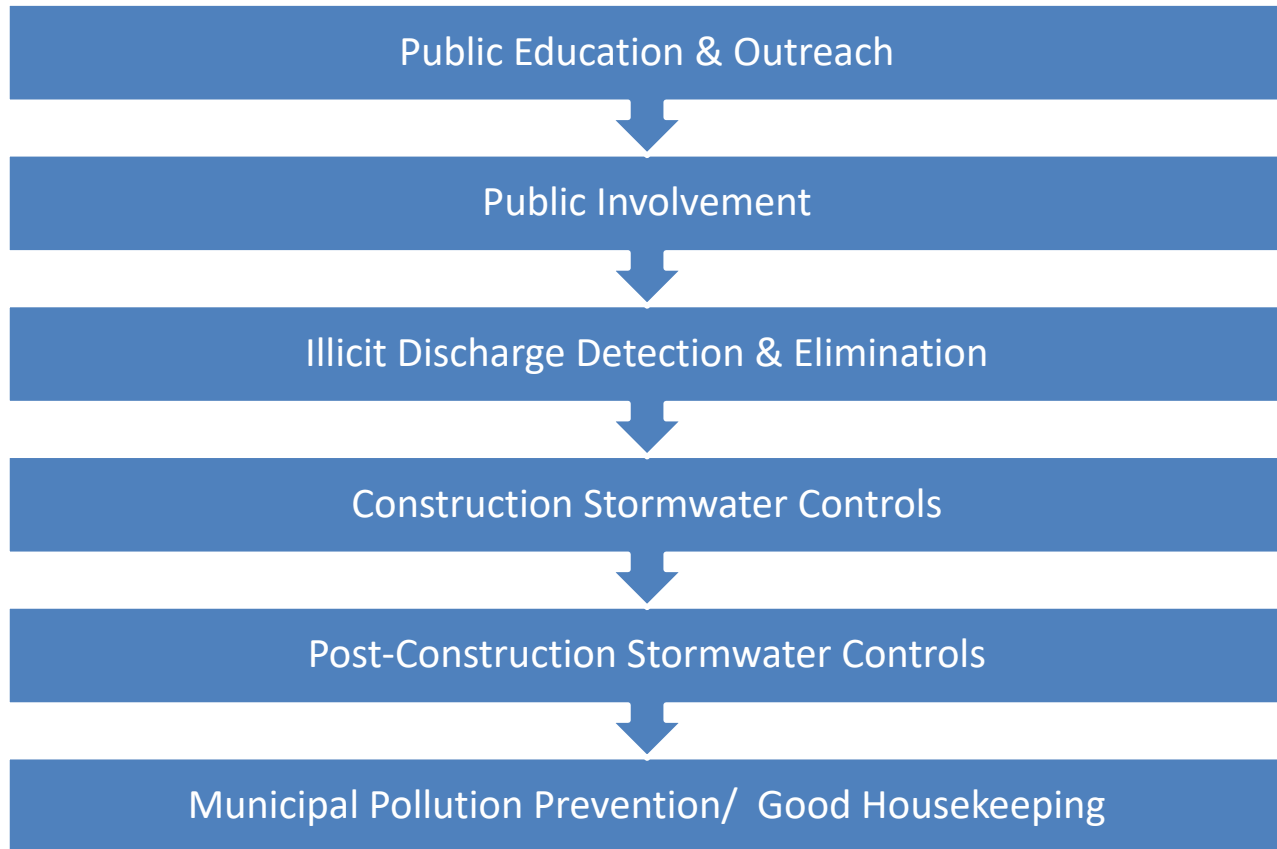
# Congressional Response

- 1987 amendment to the Clean Water Act
  - Phase I – November 16, 1990
  - Phase II – December 8, 1999
    - First Permitting Cycle – 2003 – 2008
    - Second Permitting Cycle – 2009 – 2014
    - Third Permitting Cycle – 2016 – 2021
    - Fourth Permitting Cycle – 202? – 202?
      - Plan to update SWMP and NOI once new Stormwater General Permit is issued.





# EPA Program Minimum Measures





# What AllenES does for the County

- Assist with MDEQ Audits of the MS4 Program
- Submit Revised Storm Water Management Plan
- Conduct semi-annual dry weather screenings
- Create educational flyers
- Provide multiple trainings (Employee, Staff, Elected Officials, Contractor and Developer)
- Keep County's stormwater website up-to-date



# Illicit Discharge Training

## Germantown tap water unsafe to drink after diesel fuel leak, city officials say



By Lydian Kennin and Bria Bolden

Published: Jul. 20, 2023 at 4:06 PM CDT | Updated: Jul. 20, 2023 at 10:26 PM CDT



GERMANTOWN, Tenn. (WMC) - Germantown water customers are advised not to consume tap to City of Germantown officials.

City officials say the leak was caused by Tuesday's severe thunderstorm, which knocked out power to thousands around Shelby County, including the water treatment facility on Southern Avenue.

At 2:45 p.m., it was determined that a generator being used to power the water treatment facility during the power outage was leaking diesel fuel into an underground reservoir.

The Germantown Fire Department and other regional emergency management agencies promptly rushed to the scene.

Assistant City Administrator Andy Sanders says approximately 100 gallons of diesel fuel leaked into the groundwater in total.

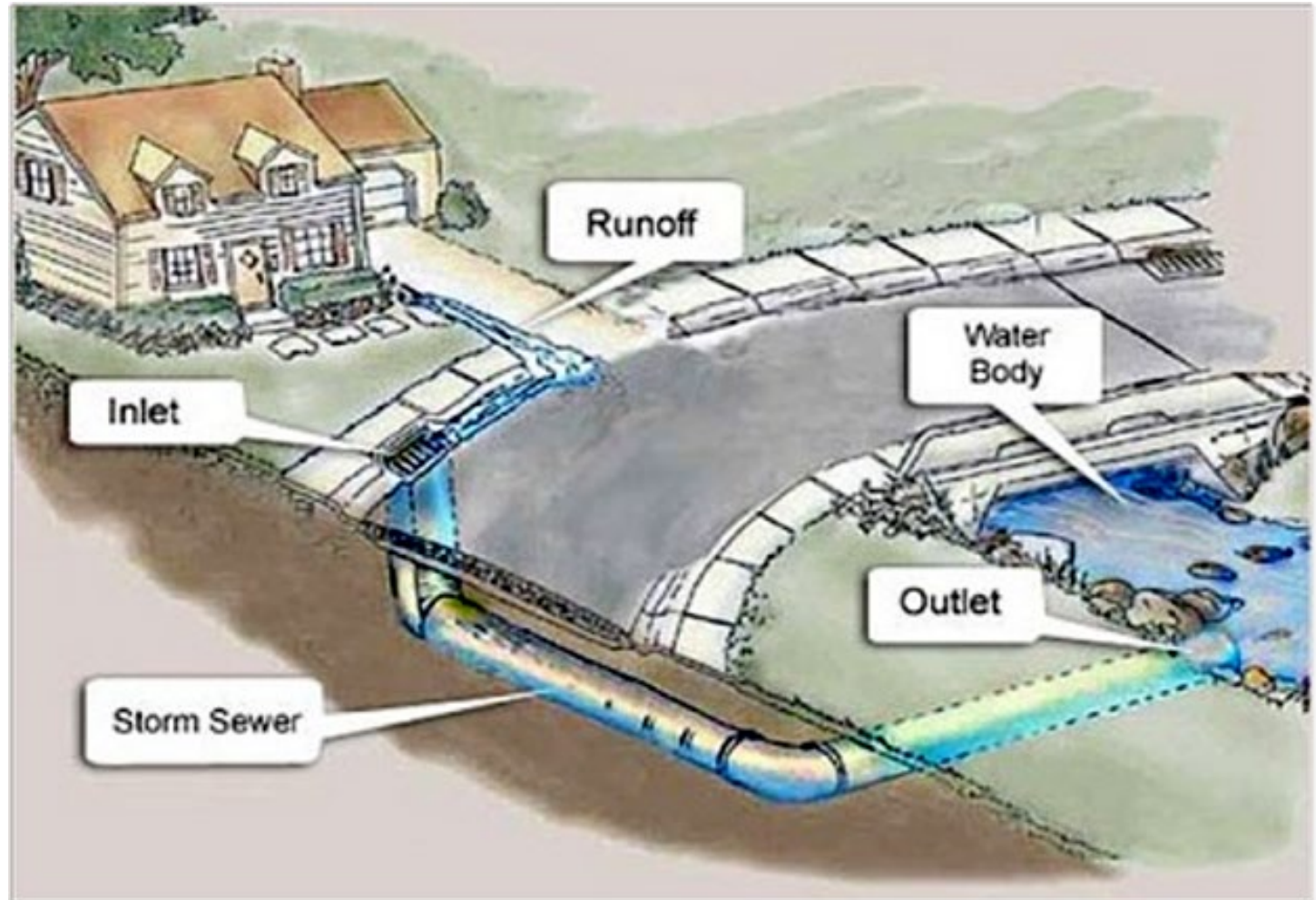
"We've been using fire hydrants in order to expel that water that had the diesel fuel leach into it out of the system," said Sanders.

Sanders says the city's two water plants can produce up to 12 million gallons daily.

Until further notice, Germantown water customers are advised that the only suitable use for tap water is for flushing toilets.

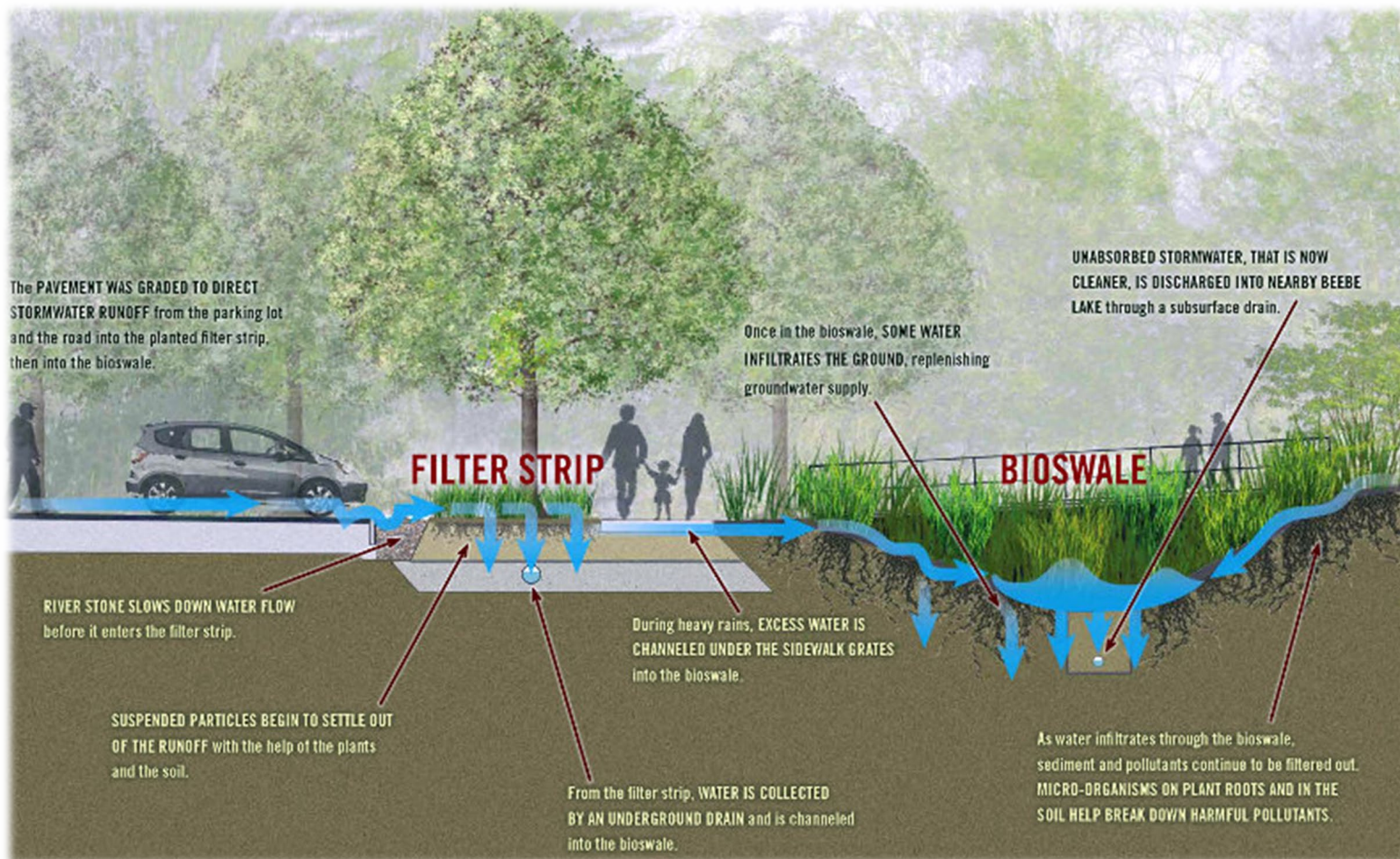


# What is Gray Infrastructure?





# What is Green Infrastructure?





# What is Green Infrastructure?

*Green Infrastructure uses natural processes to improve water quality and manage water quantity by restoring the drainage patterns of the urban landscape, managing stormwater at its source, and reducing the need for conventional piped drainage systems*

*Source - EPA*



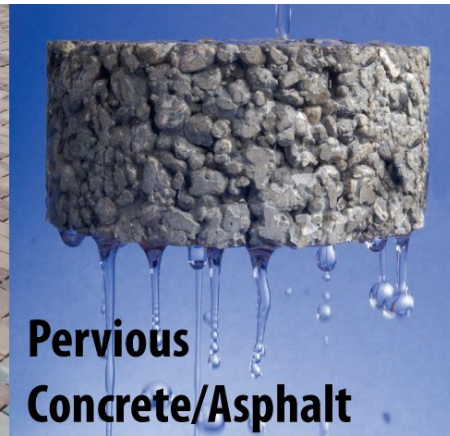
# Types of Green Infrastructure

- Downspout Disconnection
- Rainwater Harvesting
- Rain Gardens
- Infiltration Trench/Basin
- Planter Boxes
- Bioswales
- Permeable Pavement
- Green Parking, Alleys and Streets
- Green Roofs
- Urban Tree Canopy
- Land Conservation



# Examples of Green Infrastructure

## Porous Pavement/ Pervious Concrete





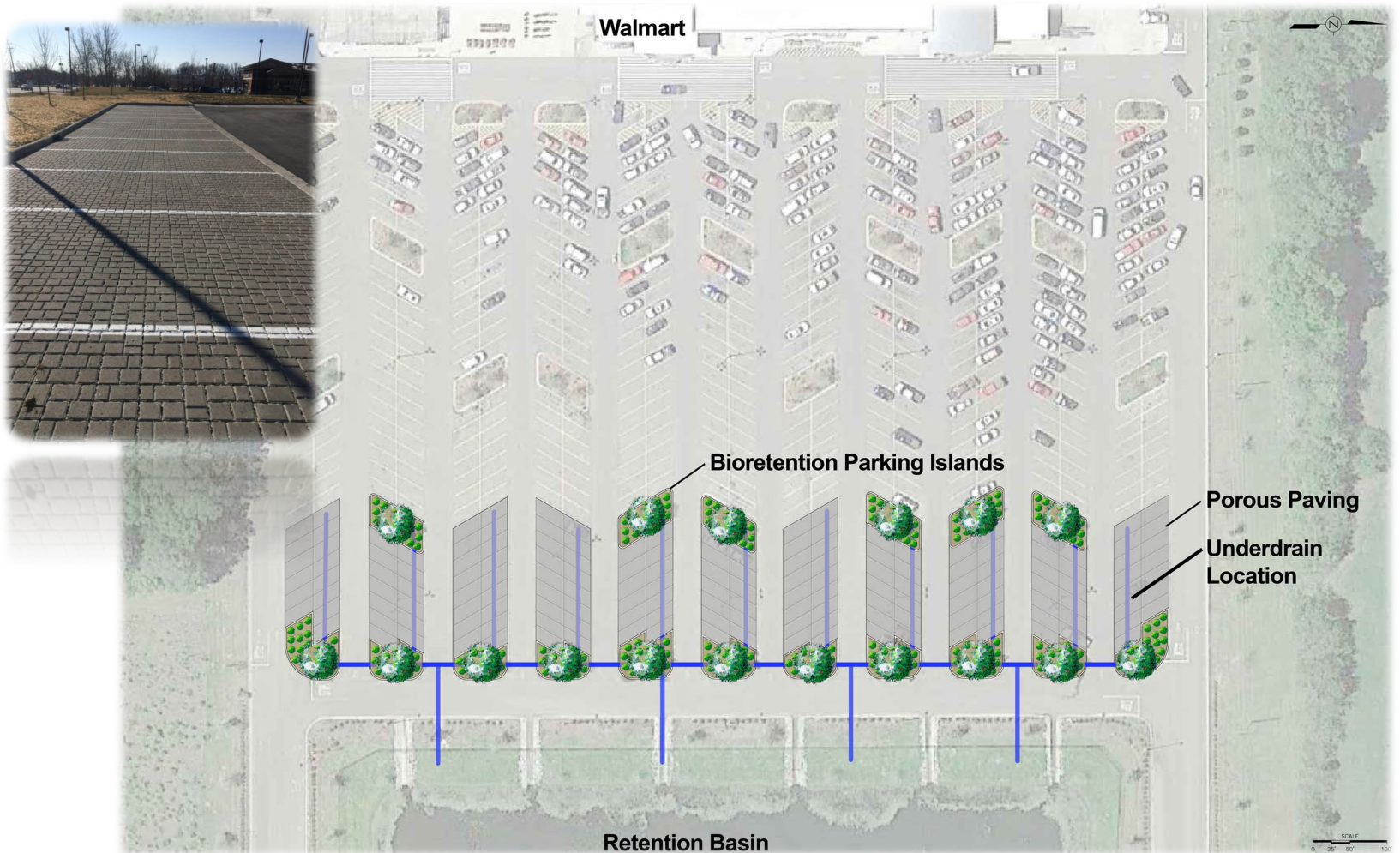


# Examples of Green Infrastructure - Parking Lot Island -



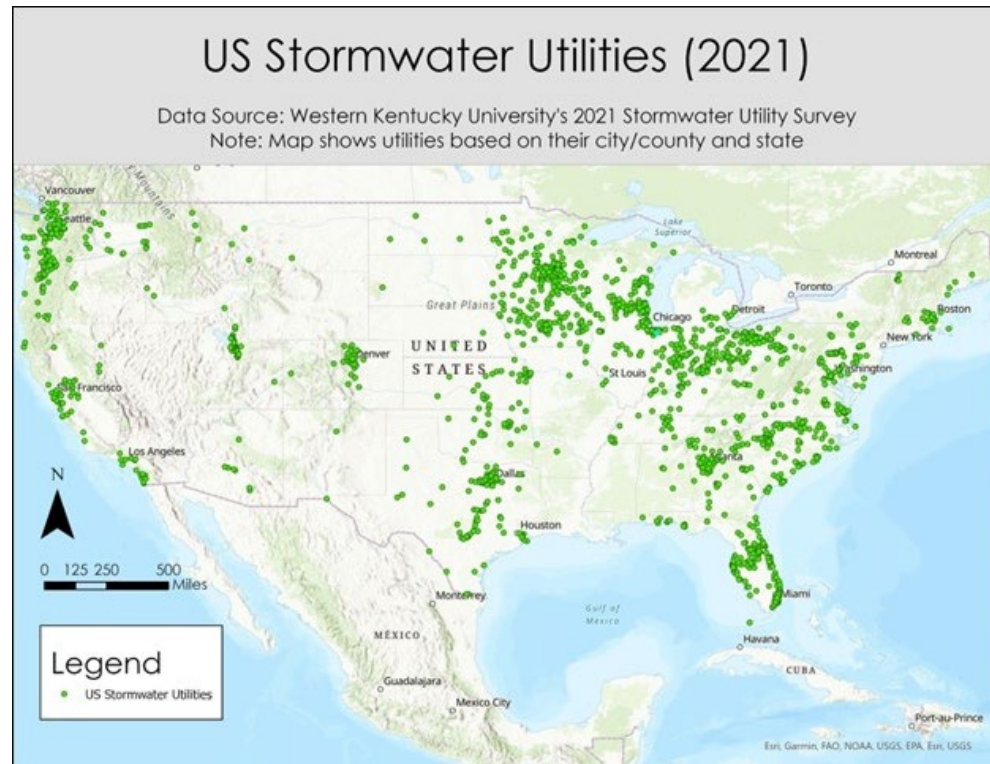


# Commercial Site Conceptual Design





# Stormwater Utilities



- U.S. EPA estimates \$67.2 billion is needed for stormwater infrastructure for MS4's over the next 20 years.
- Stormwater utility funds can cover stormwater planning, installation and maintenance



# In Conclusion

- MDEQ expects a higher standard with this 5-year plan
  - Better record-keeping
  - More inspections
  - Update local ordinances
  - Better management of stormwater on-site
  - Increased use of Green Infrastructure/Low Impact Development



# Any Questions?

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