



*Introduction to Stormwater*  
*Management:*  
*Impacts to Our Lakes and Updates on*  
*EOH Projects*

**East of Hudson Watershed Corporation**

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# Presentation Overview



- East of Hudson Watershed Corporation
  - Who are we?
- Stormwater Basics
  - Hydrologic cycle
  - What is in our stormwater runoff?
- Stormwater Solutions and Current Projects
- Future Funding and Opportunities
- Questions

# EOHWC – Who and Why?



- Formed to address heightened P-Reduction
  - Regional Stormwater Entity (RSE).
  - 920 kg over a 10-year period.
  - Bubble compliance for the members
- Carmel (T)
- Putnam Valley (T)
- Kent (T)
- Southeast (T)
- Patterson (T)
- Bedford (T)
- Cortlandt (T)
- Lewisboro (T)
- Mt. Kisco (T/V)
- New Castle (T)
- North Castle (T)
- North Salem (T)
- Pound Ridge (T)
- Somers (T)
- Yorktown (T)
- Brewster (T)
- Pawling (T/V)
- Putnam County





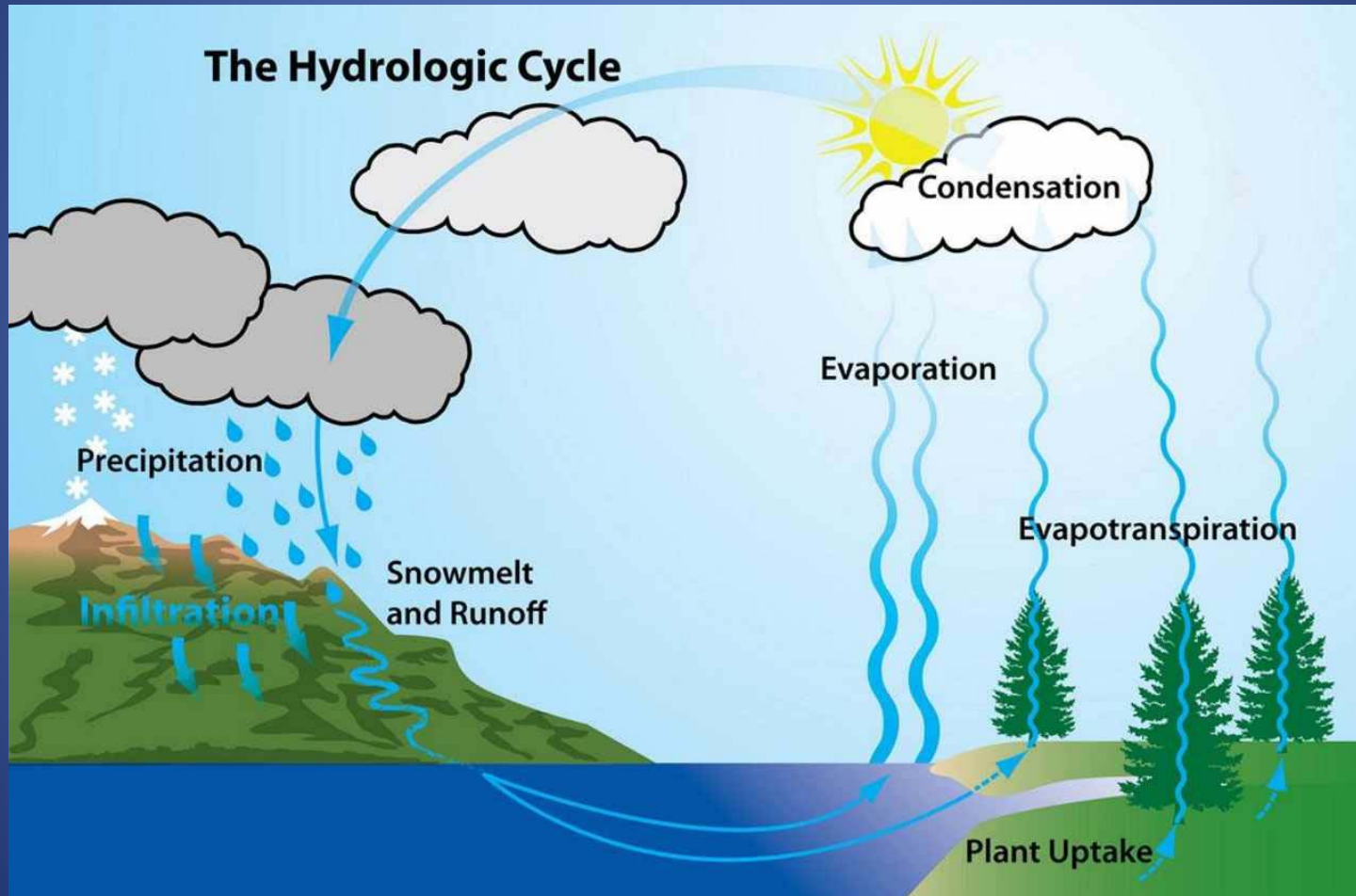
# Stormwater Basics



# Stormwater Basics

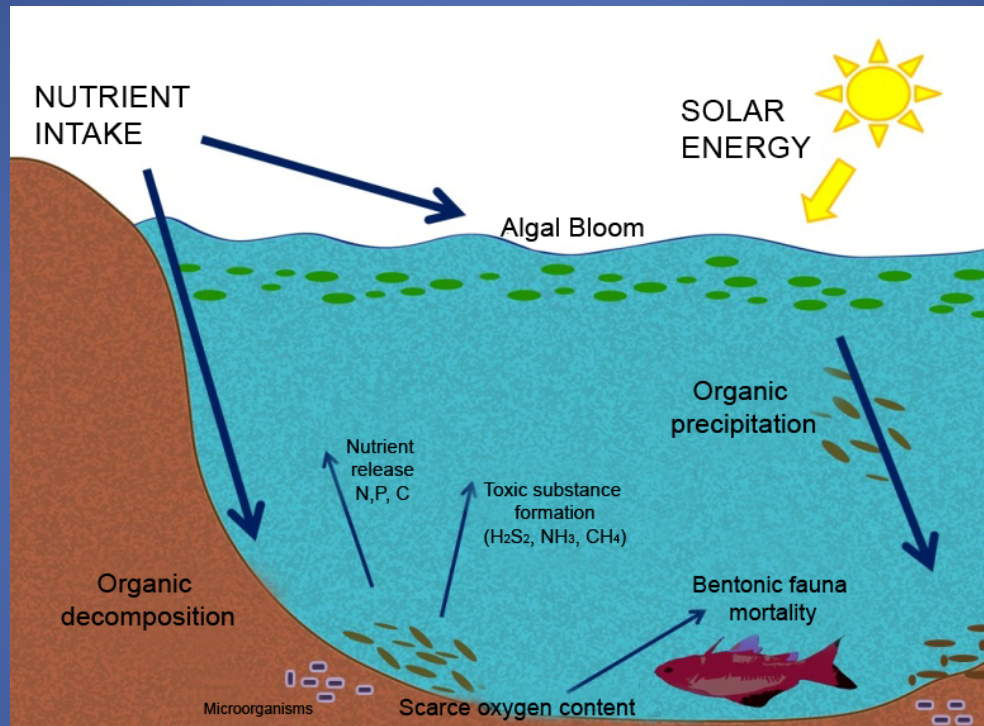


# Stormwater Basics





# Nutrient Loading



- Phosphorus and Nitrogen
  - Eutrophication and algae growth

# It's just rainwater, right?





# Water Quality Volume

- Water Quality Volume (WQv)
  - The storage needed to capture and treat 90% of the average annual storm runoff
- Smaller frequent storm events tend to carry higher pollutant levels

# Stormwater Solutions

- Stormwater Ponds
  - Practices that have either a permanent pool of water or a combination of permanent pool and extended detention
- Stormwater Wetlands
  - Practices that include significant shallow marsh areas, and may incorporate small permanent pools and extended detention
- Infiltration Practices
  - Practices that capture and temporarily store the WQv before allowing infiltration into the ground
- Filtering Practices
  - Practices that capture and temporarily store the WQv, and pass it through a filter bed of sand/organic matter/soil/engineered media
- Open Channel Practices
  - Practices designed to capture and treat the full WQv within dry or wet cells formed by check dams or other means

# Ongoing EOHWC Lake Solutions

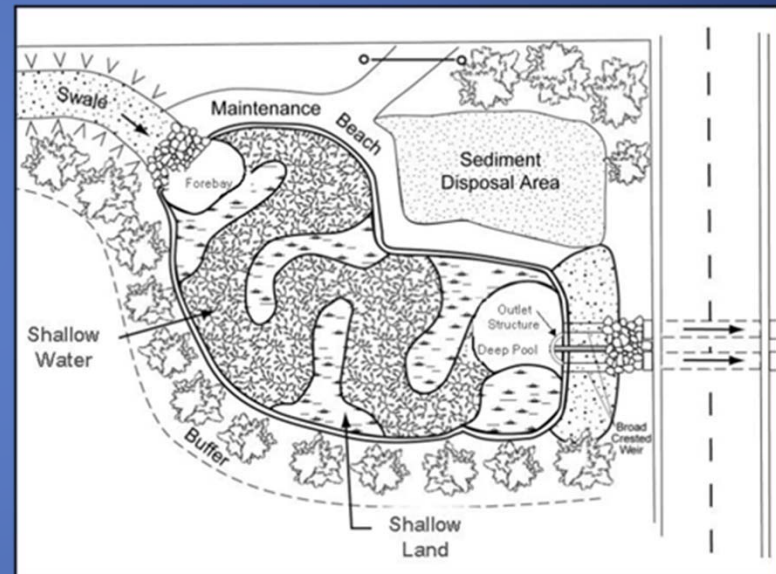
- Bio-Infiltration
  - Lake Dutchess
  - Lake Katonah
  - Pine Pond
  - Kirk Lake
- Channel Stabilization
  - Lake Waccabuc
  - Lost Lake
- Manufactured Filtration Devices
  - Junior Lake
  - Sparkle Lake
- Stormwater Pond or Wetland Solution
  - Lake Carmel
  - Lake Waccabuc



# Stormwater Ponds

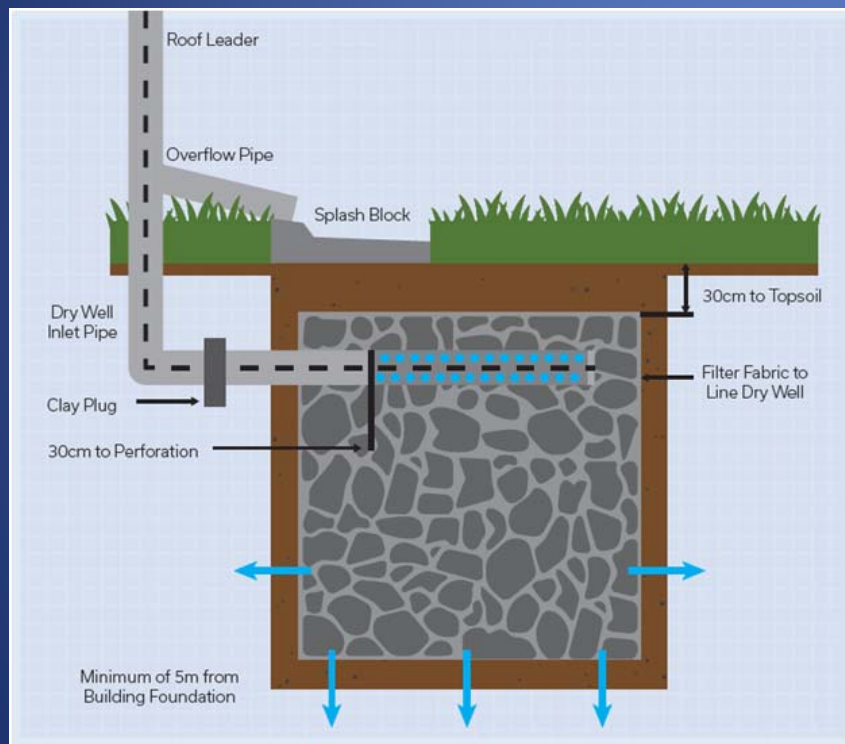


# Stormwater Wetlands





# Infiltration Practices

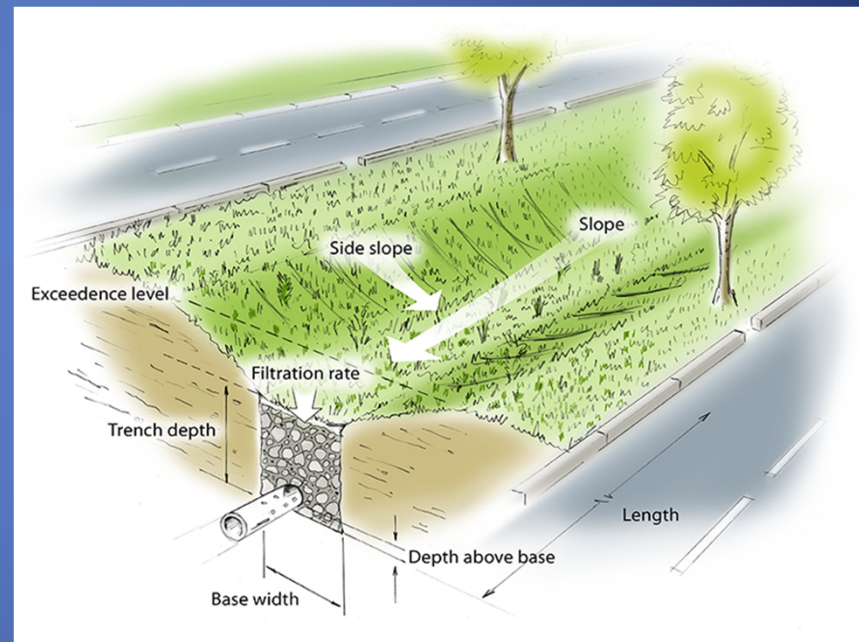




# Filtering Practices



# Open Channel Practices



# Stormwater As a Utility

- Long term commitment!
  - Proper maintenance dictates success
  - Not a set it and forget it solution
- Public utility fees
  - Drinking and wastewater
- Special Tax Districts
  - Incentives for proactive homeowners
    - Dry well installation
    - Raingardens



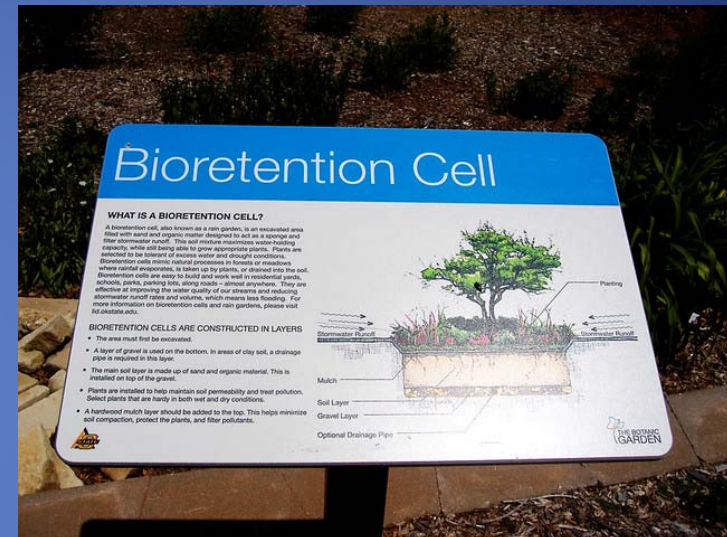
# Engaging the Community

- Education!
  - Needs to be more than a pamphlet in the mail
- Community action days!
  - A healthy BMP is an attraction
  - An engaged, responsible community can be our biggest asset.



# Educating the Next Generation

- Stormwater solutions can be their own ecosystems and learning tools



# How can we afford this?

- Special Tax Districts
- Stormwater Management Utility Funds
- State/Federal Grants
- The East of Hudson Watershed Corporation!



# How can we afford this?

- Special tax districts or SMUF
  - All property owners pay for construction and maintenance
  - First step is the construction, but maintenance lasts forever
- State/Federal Grants
  - Federal and State Grants for EJAs
    - Underserved communities are getting their turn
  - Joint Applications

# How can we afford this?

- The East of Hudson Watershed Corporation!
  - Continuation of the MS4 Permit regulating discharges to our water sources
  - Expansion of EOHWC responsibilities
    - Wastewater and Stormwater Impacts
      - Septic Repair and Municipal hook-ups
      - Watershed-wide study of MS4 needs

# Questions?

