

# Kingwood Park: Bringing Nature and Humans Together



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# Goals

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- Improve Habitat
- Better Control of Hydrology on site. Including erosion, water quality, and stream flow.
- Improve public knowledge and access.





# Site Inventory and Analysis



The stream is surrounded by athletic fields, street, and agricultural fields. All of these play a large part in the erosion of stream banks, flooding, and water pollution. Gaining control over surrounding water is essential to improving water quality and stopping erosion.

# Site Inventory and Analysis



The banks of this stream are eroding at an incredible rate. Good stream systems have an equal input of soil relative to erosion. Bank stabilization can be accomplished by establishing plantings along the banks and slowing down incoming water.



# Site Inventory And Analysis



- Woodland habitat has strong tree cover but lacks understory plantings.
- Currently a lot of invasive plant material
- A lot of deadwood present, opportunity to improve habitat.



# Site Inventory and Analysis

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- The soil type for this area is a Bowmansville Series soil. These soils are deep, yet very poorly drained, and are usually located in flood plains that are subject to frequent flooding. The organic layer has been stripped by erosion, replenishment would help habitat.



# Site Inventory and Analysis



The existing gravel walking path through the woodland faces erosion issues. The parking lot is also located in the flood plain of the site. The opportunity exists here to improve the public's experience.

# Program Elements

- **Bio Logs**

- Used to help establish plantings along eroding stream banks
- Made of coconut fibers wrapped in rope webbing
- Biodegradable over time
- Use of plugs and other plantings within the log itself
- Possible plantings include: Serviceberry, Purple Joe Pie Weed, Willow, Red Chokeberry, American Holly





# Program Elements

## ● Vernal Pools

- Small pools of water
- Cycle from wet to dry, fill up as needed
- Provide habitat for amphibians like frogs, salamanders, turtles
- Can contain associated plantings such as sedges, swamp oak, marsh fern
- Need a poorly drained layer of soil (Bowmansville okay)



# Program Elements

- **Swale, Wet Meadow, Constructed Wetland**
  - Swales are designed for stormwater runoff
  - Spread runoff horizontally across contour lines in the landscape
  - Use of berms to trap water in swale
  - Meadow plantings buffering swale (Current Soccer Field) Milkweed, Black Eyed Susan, Golden Rod.
  - Constructed Wetland: Sedges, Reeds, Cattails





# Program Elements

## ○ Restructured Stream

- Implement more curves into stream to help slow down the current of the stream, rather than a straight channel leading to rapid current velocities
- Use of ripples and pools to help slow down and break up the flow of water, also to help provide areas for overflow when flooding occurs
- Better habitat for Trout and native aquatic life.



# Program Elements

- **Regenerate The Forest**
- Planting of more trees to help fill in the canopy layer.. Maple, Oak, Ash,
- Use of shade to reduce available sunlight that current invasives on site need in order to live
- More of an understory needs to be established as well. Viburnum, Switch Grass, Mt. Laurel, Dogwood





# Program Elements

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- Deadwood
- In a natural forest system trees will die over time
- The deadwood provides habitat for animals and returns elements and organic matter to the soil
- Leaving deadwood in place, instead of removing will benefit the ecosystem
- Hazard trees need a target



# Deer Control

- Healthy deer population is 15 per square mile
- A mix of controls will work best including;
  - Spot treating new plantings with repellants, install cages around new plantings, scare tactics such as motion sensor radios.
- Controlling deer will allow forest regeneration to evolve over time and habitat to improve





# Program Elements

## ● Reorientation of Parking Lot and Re-structure Paths

- Current parking lot lies in flood plain
- Moving or shortening of the parking lot
- Separate paths for athletic use and woodland exploration.
- Current gravel path to be rolled to compact and have a wood border placed around it.
- Signs placed along path to educate the public

