

The background of the slide features a large, faint, red circular seal of Rutgers University. The seal contains the text "RUTGERS UNIVERSITY" and "EST. 1823" around a central emblem.

# RUTGERS

New Jersey Agricultural  
Experiment Station

## *Stormwater Management Issues Related to Climate Change*

**Christopher Obropta, Ph.D., P.E.**

***[www.water.rutgers.edu](http://www.water.rutgers.edu)***

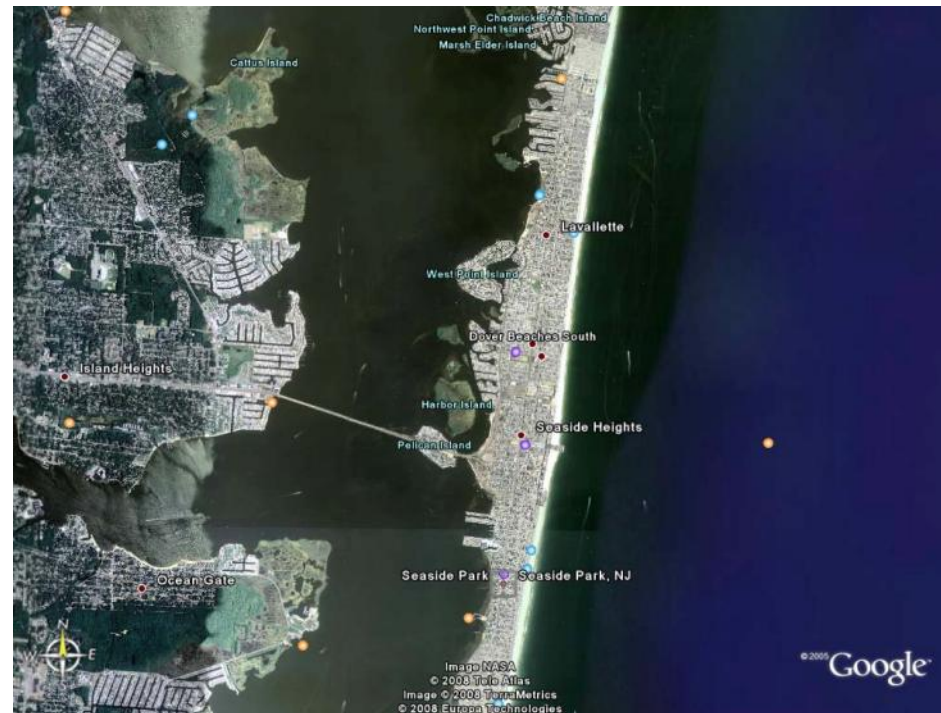
***[obropta@envsci.rutgers.edu](mailto:obropta@envsci.rutgers.edu)***

## Let's Get Real

- Can we as a society really change our behavior and stop global warming?
- If there is even the slimmest chance that we can't, let's start preparing for the implications of climate change.
- Let's talk about engineering.



- Sea level rise (low lying coastal areas)
- Increased rainfall (entire state)

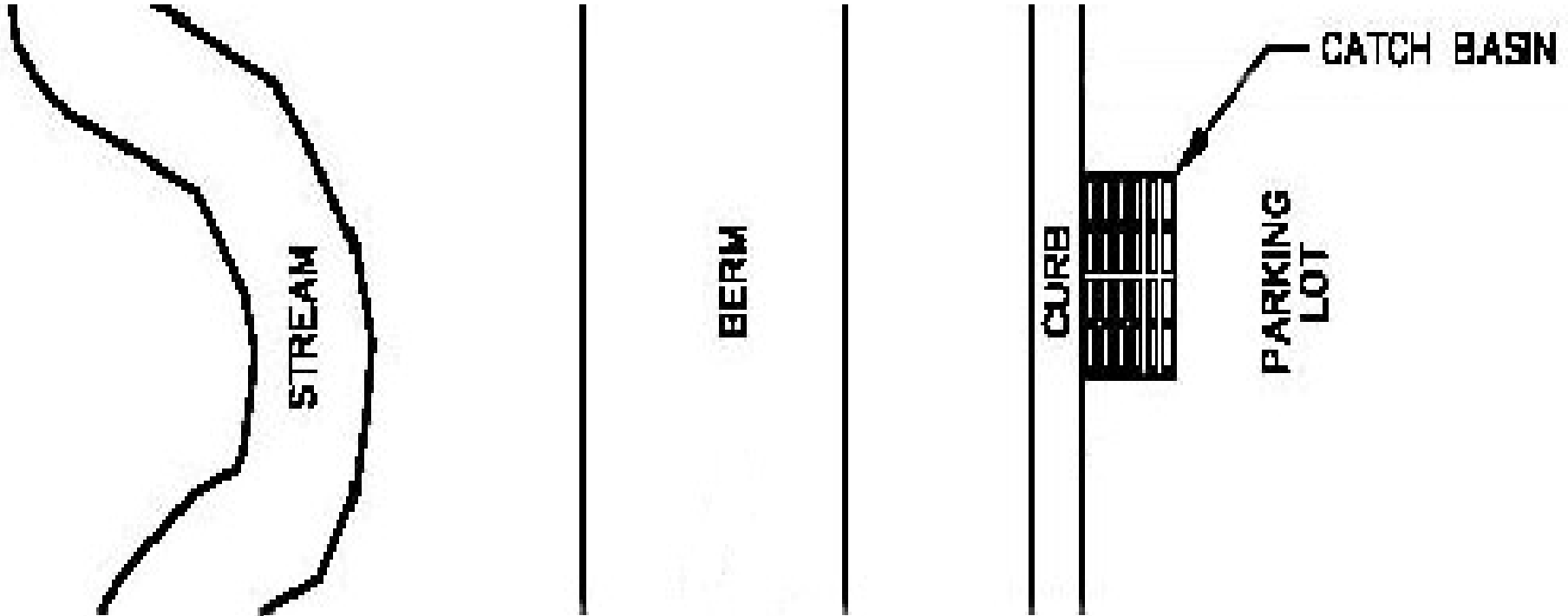




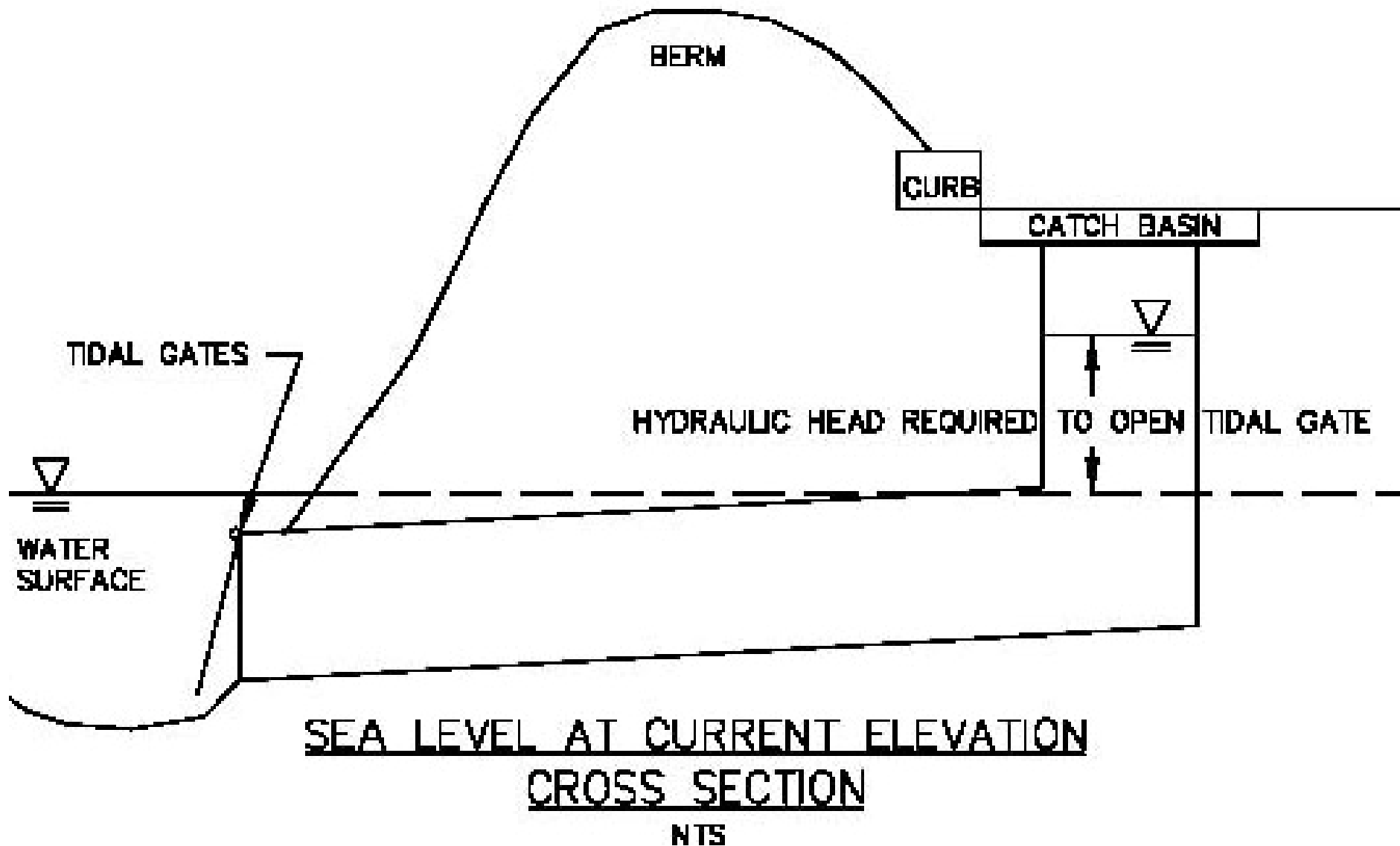
## Flooding



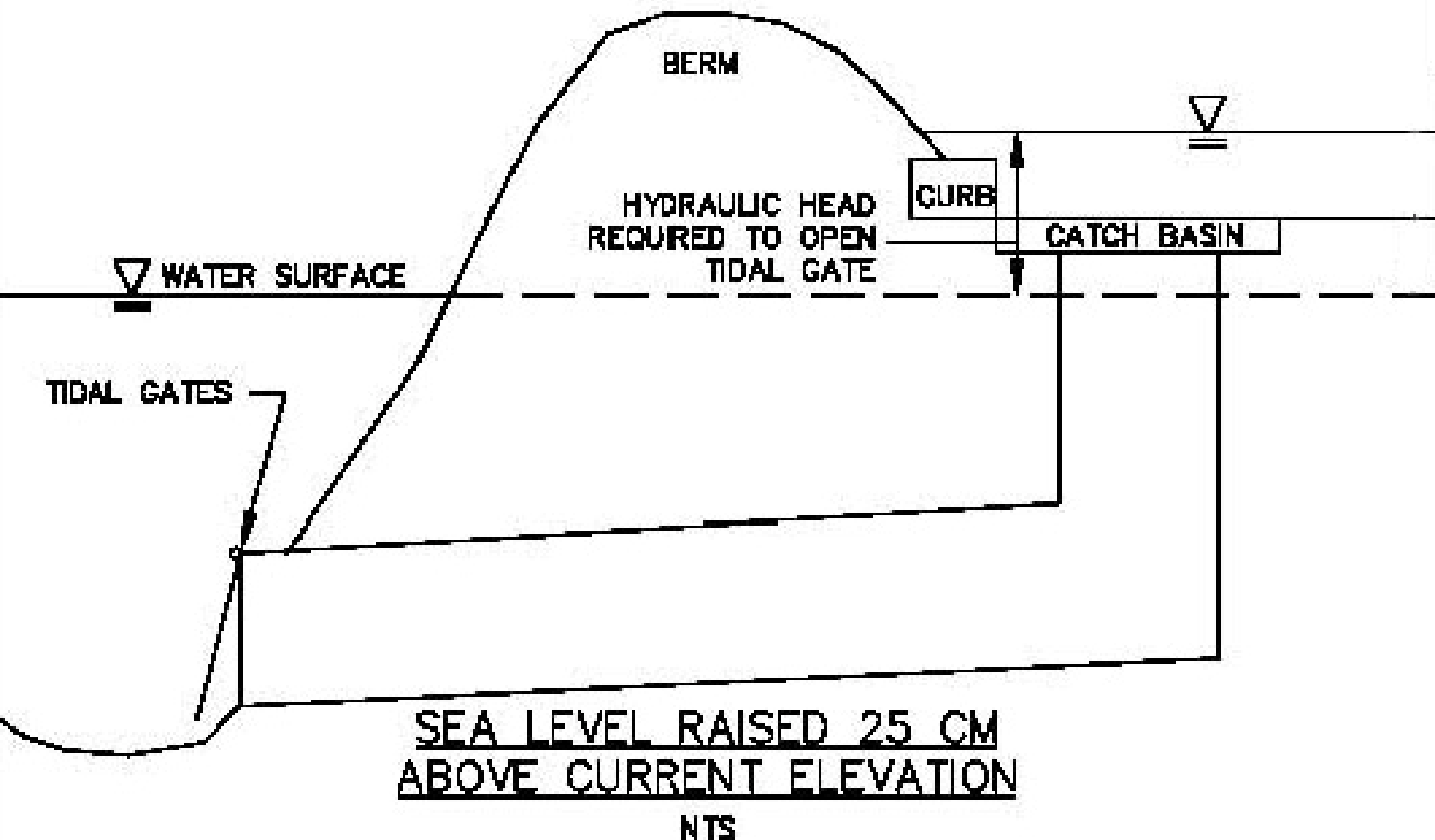
# Typically Parking Lot



# Cross Section of Parking Lot



## with Sea Level Rise





# Stormwater Volume Controls

Concept is to hold the stormwater runoff until tidal stream subsides, then slowly release it





# Rain Barrels/Cisterns





# Underground Storage





# Aboveground Storage



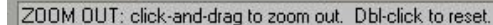




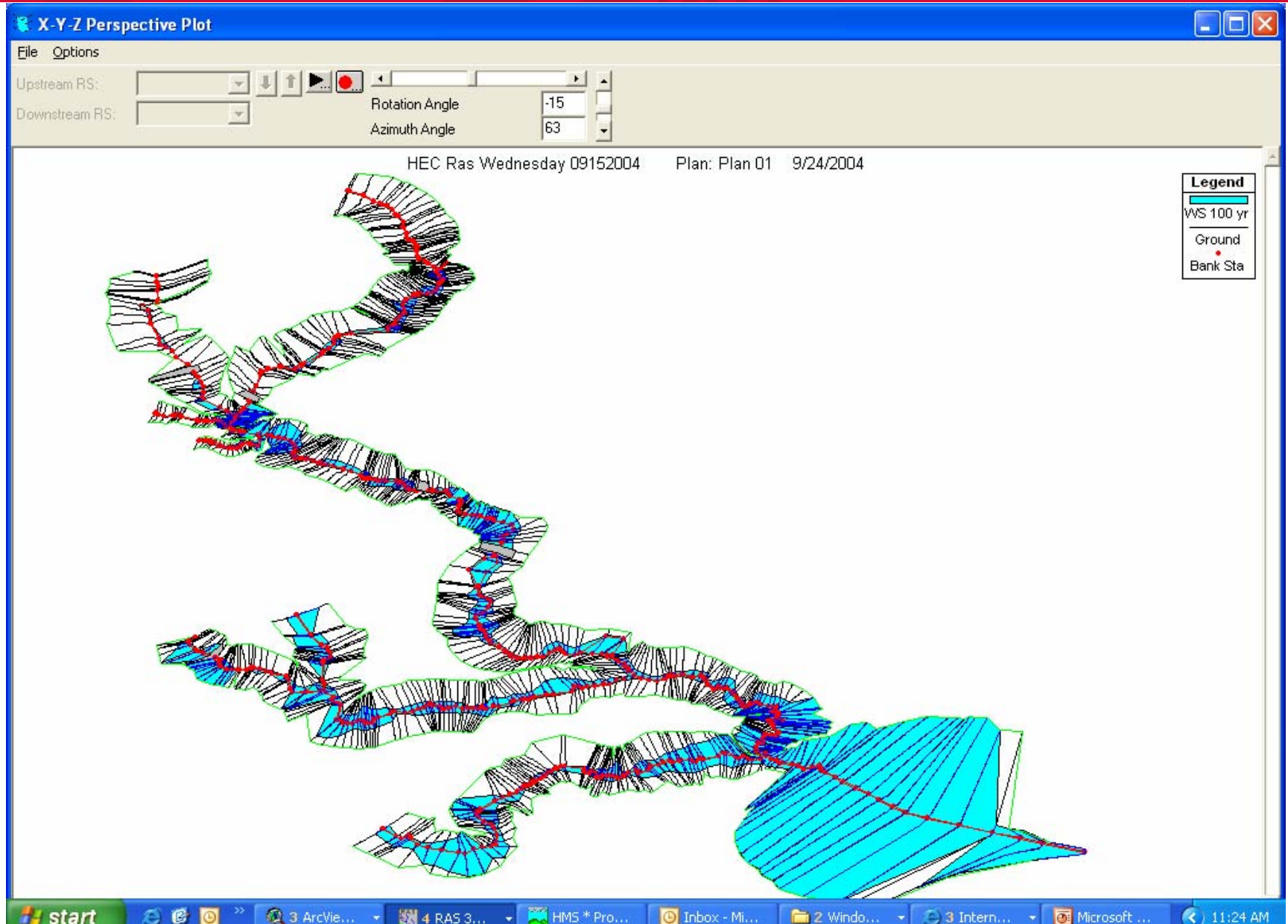


- Focuses on flooding and water quality issues for entire watershed;
- Provides specific solutions to defined watershed problems; and
- Promotes cooperation among the various entities to restore and protect a common resource.



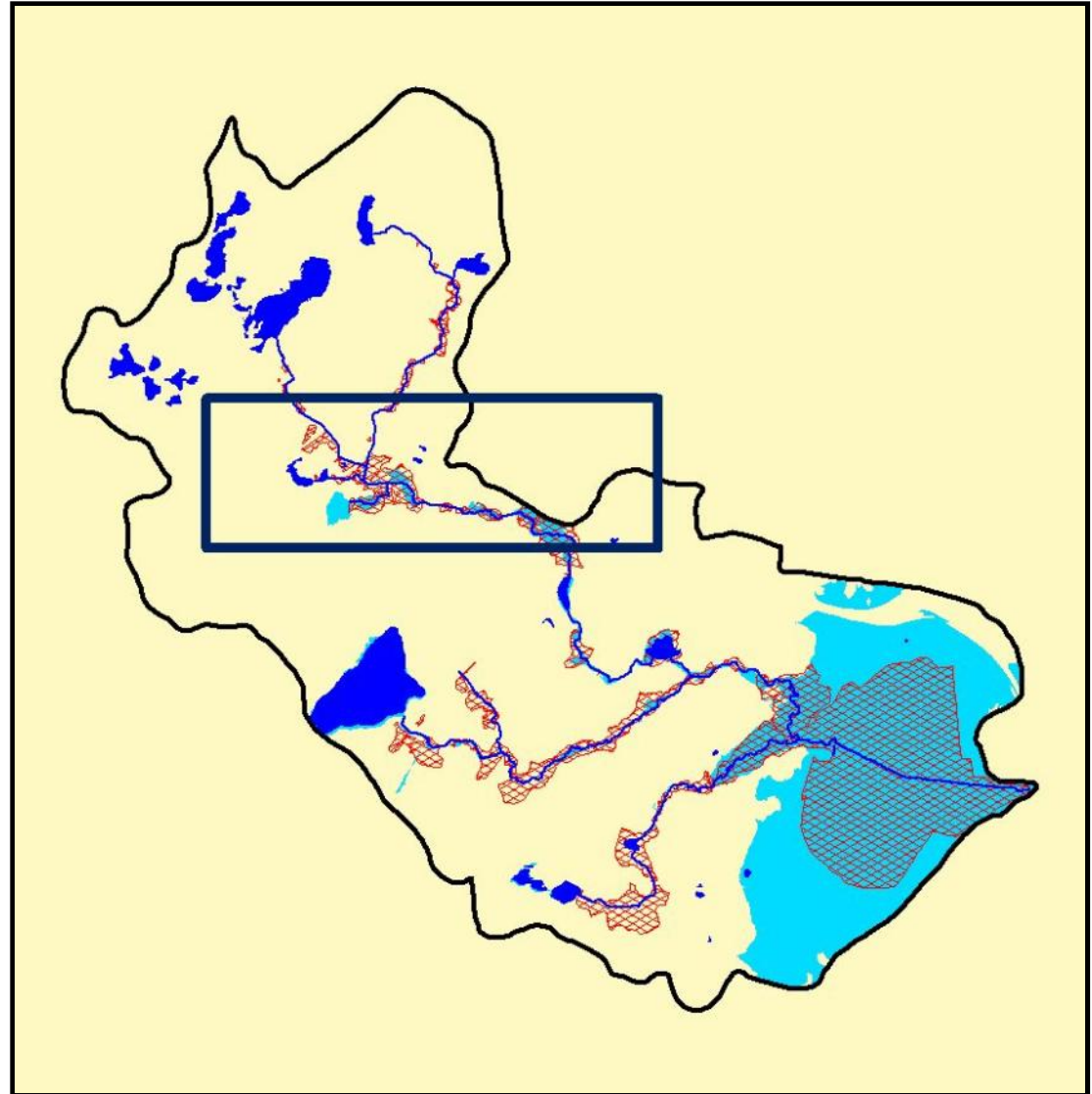


# Hydraulic Stream Model



# Model Results

- Stream Network
- 2 Year Storm
- 10 Year Storm
- 100 Year Storm
- FEMA 100 Year Storm
- Compare/Contrast FEMA w/ Model
- Area of Interest





## Detailed View



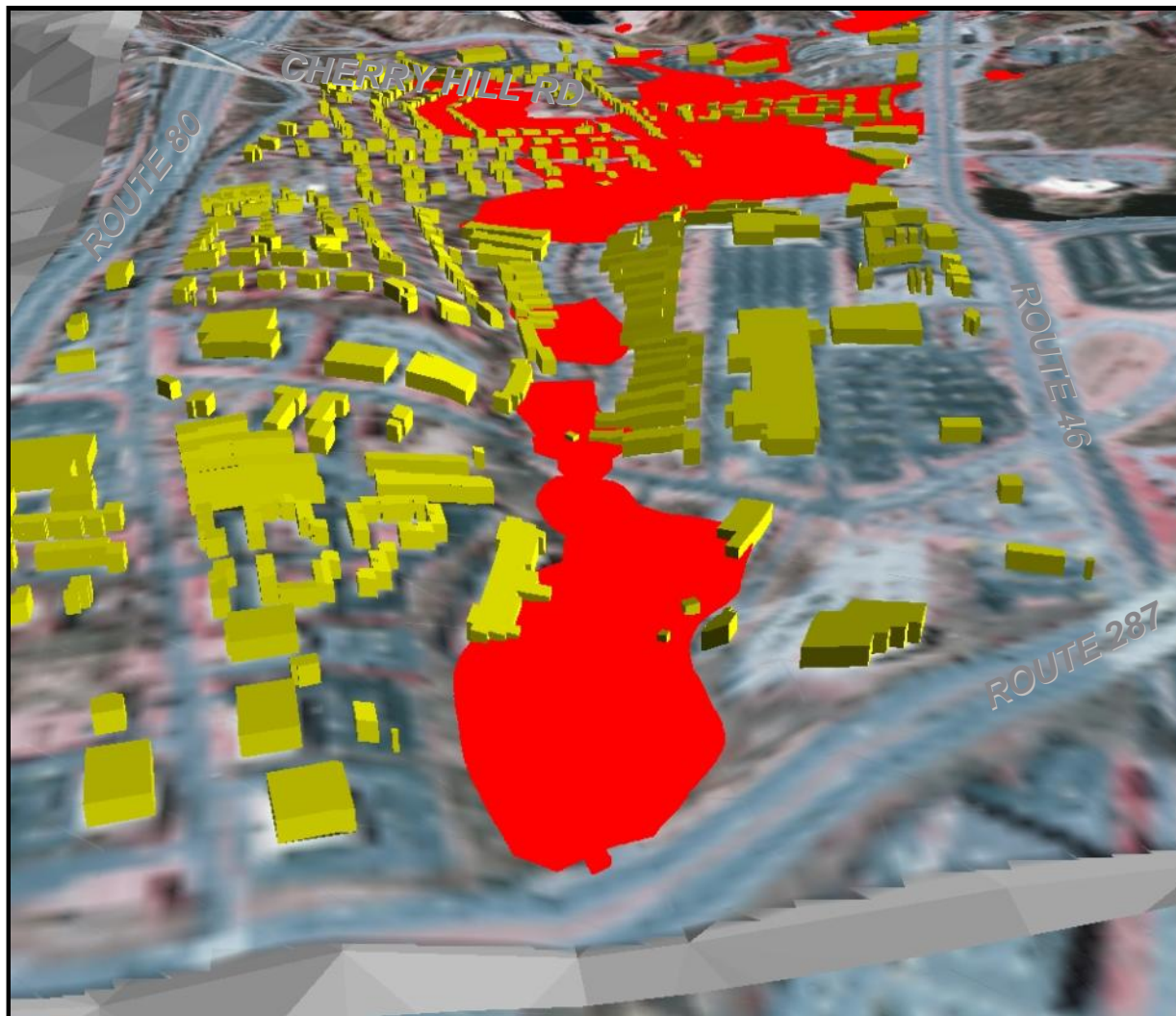
 2 Year

 10 Year

 100 Year



## 3-D View



2 Year



10 Year



100 Year

By integrating research, education and extension activities at the watershed scale:

- We are conducting applied research to produce solutions.
- These solutions are implemented at the local level through our extension activities.
- While training the next generation of water resources professionals.

If we are going to effectively address stormwater management issues related to climate change, we need to work regionally to produce solutions but we need to work locally to implement these solutions.

**Christopher Obropta, Ph.D., P.E.**

*[www.water.rutgers.edu](http://www.water.rutgers.edu)  
[obropta@envsci.rutgers.edu](mailto:obropta@envsci.rutgers.edu)*