

# Low Impact Development – What it is and why is it important?

**NH WATER AND WATERSHED CONFERENCE**

**SATURDAY, MARCH 26, 2011**

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The University of New Hampshire Stormwater Center**

**Friday, December 16, 2011**

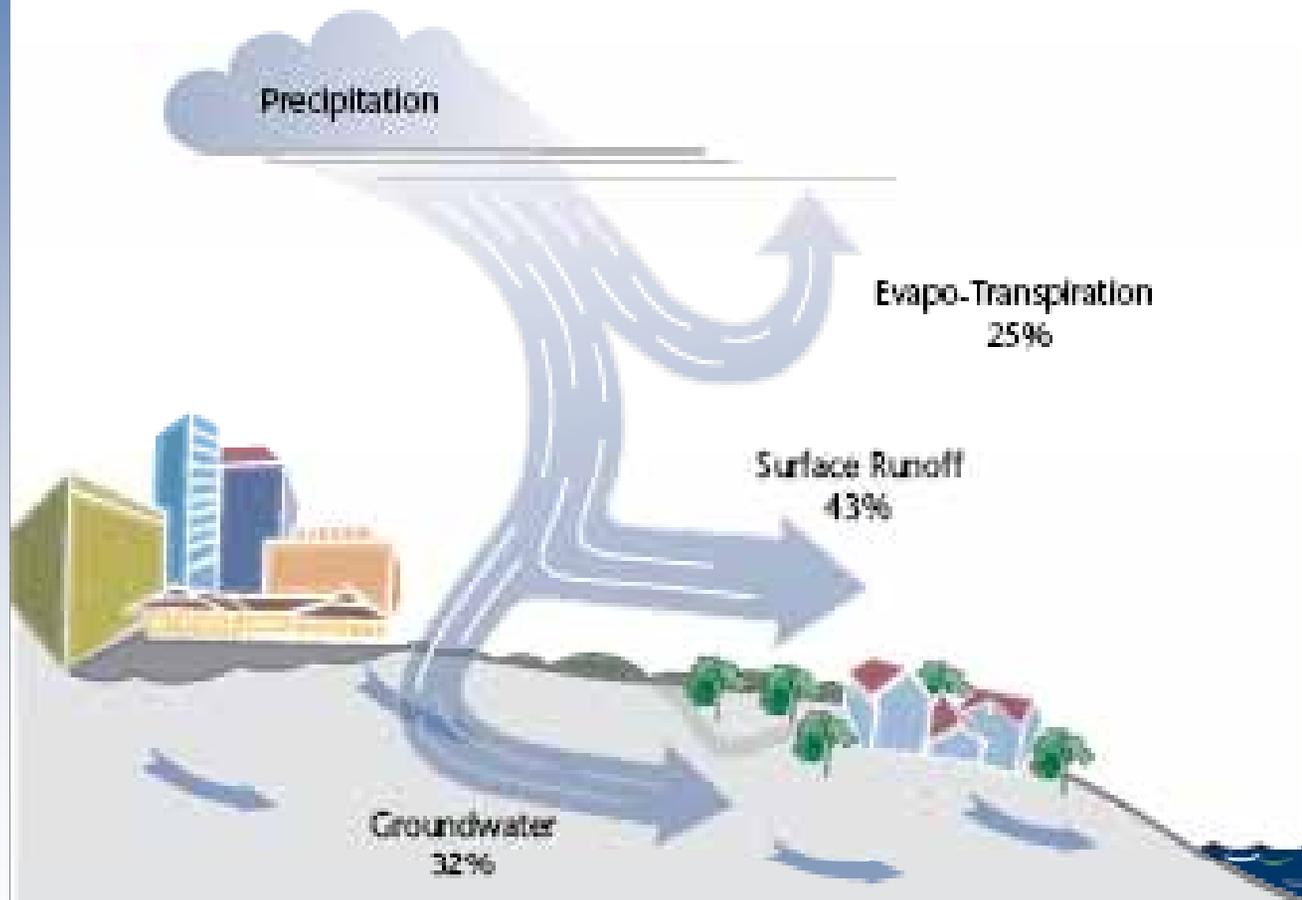


# What is Stormwater

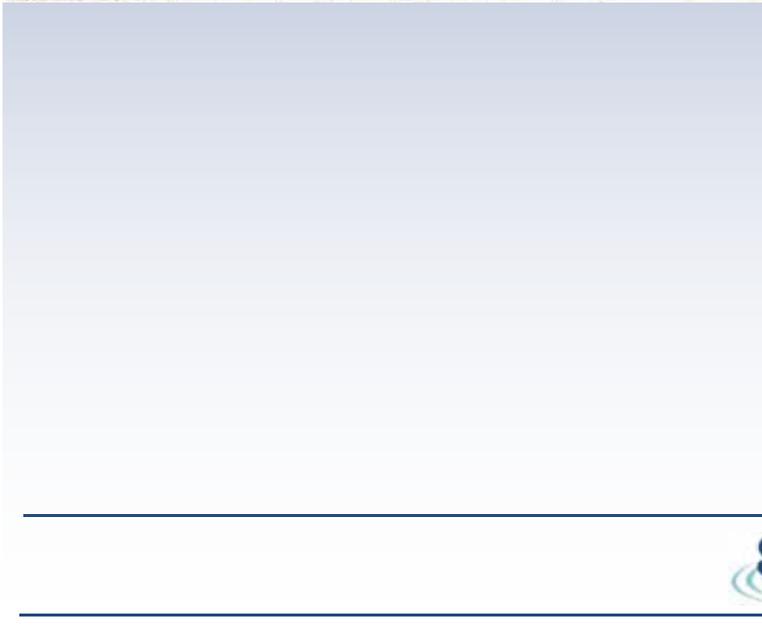
- Any precipitation that runs over the land surface (runoff) and does not infiltrate the ground.
- Heavily impacted from land use changes.

# Water Cycle

## TYPICAL ANNUAL WATER BUDGET: DEVELOPED WATERSHED









# Deep Water Horizon



Seattle, WA

# Everyday NPS

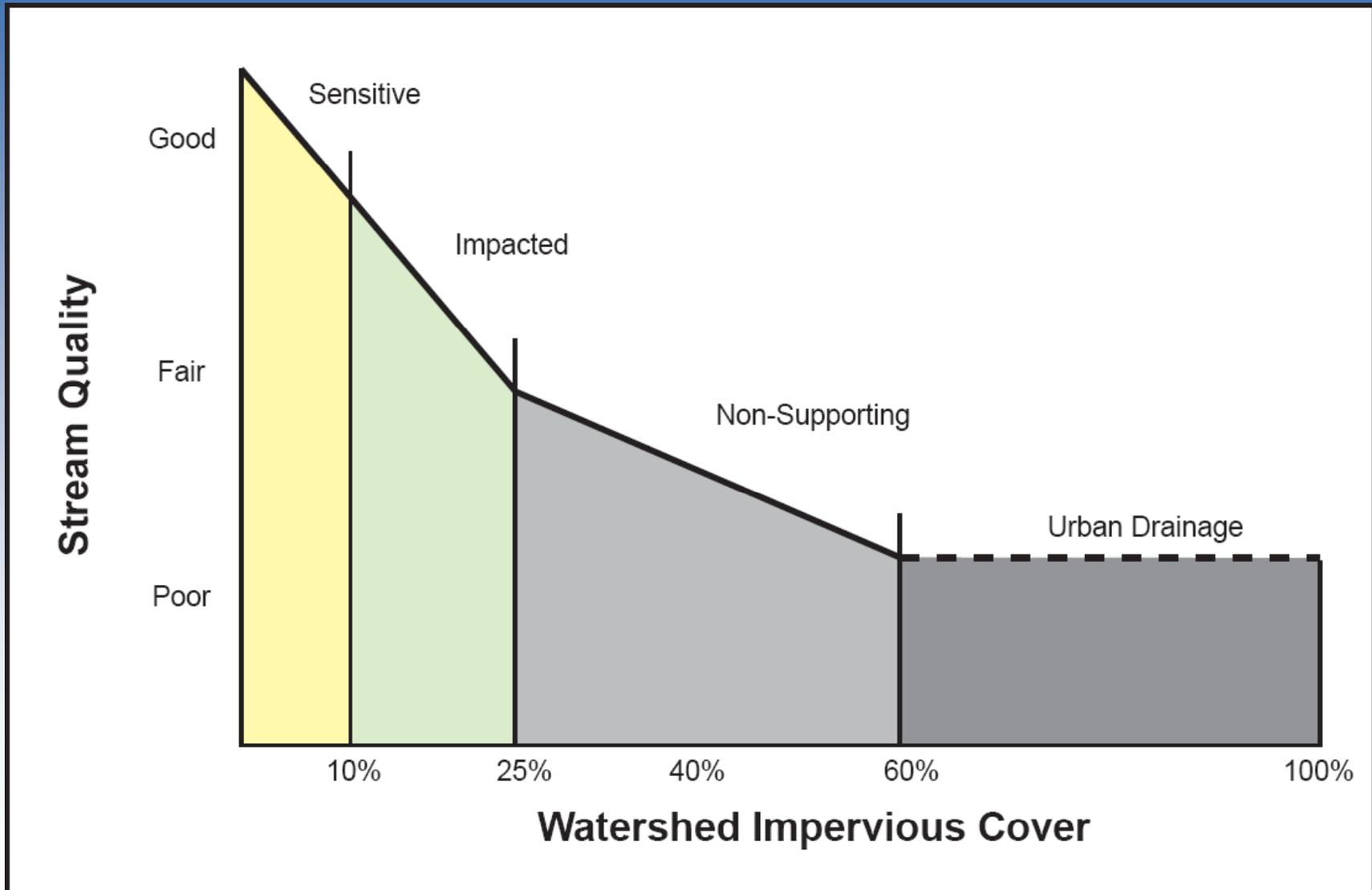


# Part of the Problem – Non-point Source Pollution

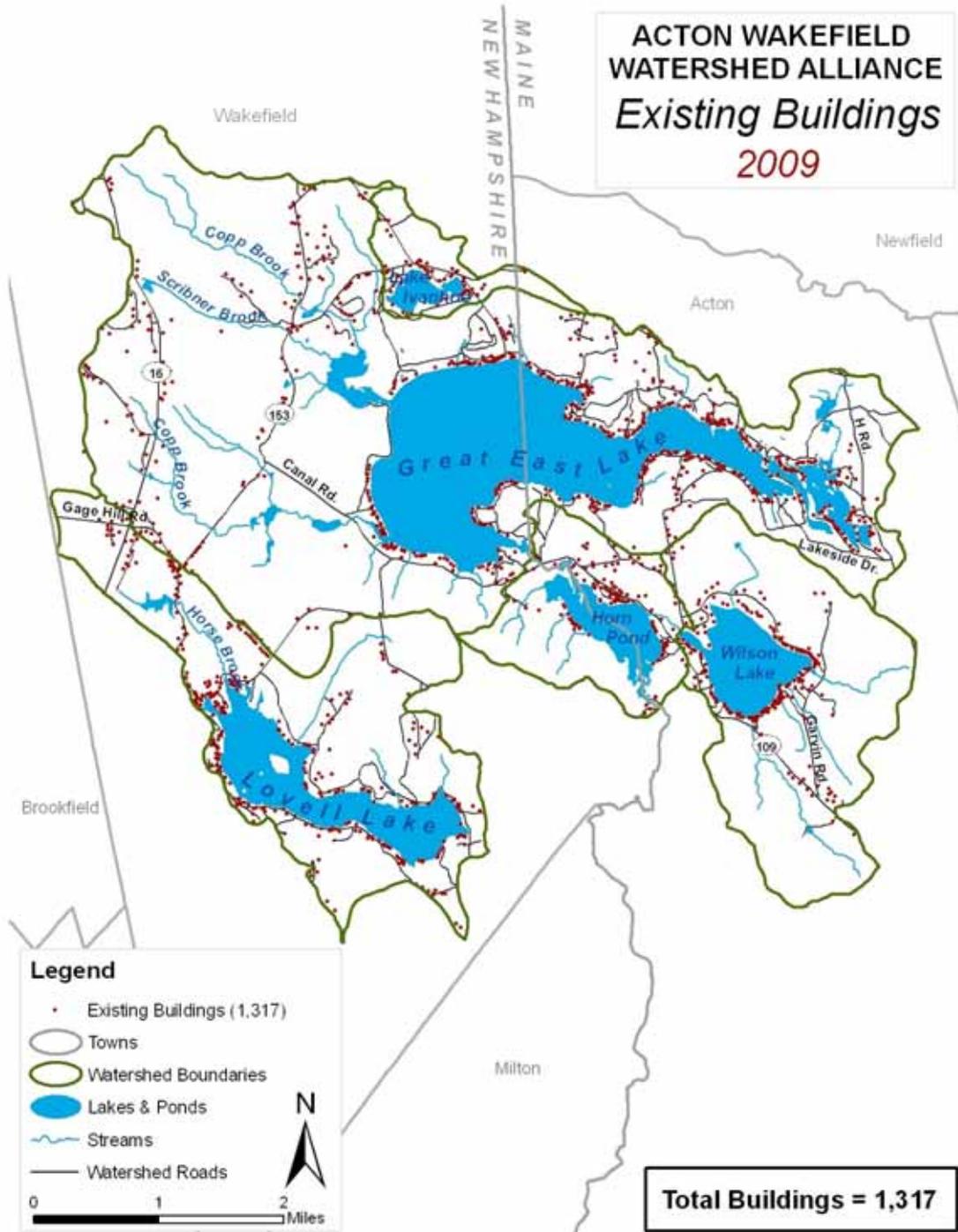
- 83% of surface water quality impairments in NH are due, at least in part, to stormwater.



# Impact of Impervious Cover



ACTON WAKEFIELD  
WATERSHED ALLIANCE  
*Existing Buildings*  
2009

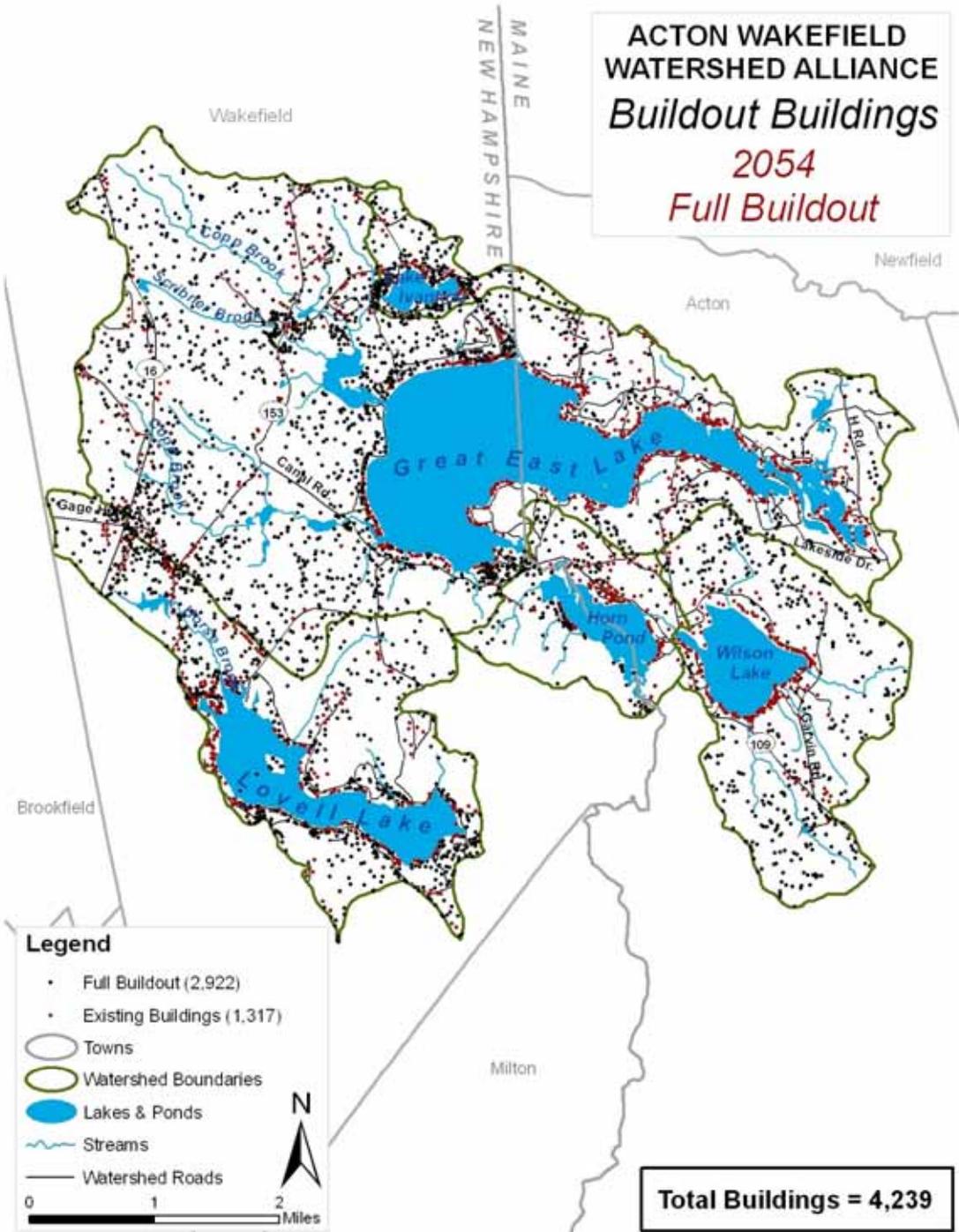


ACTON WAKEFIELD  
WATERSHED ALLIANCE

*Buildout Buildings*

2054

*Full Buildout*



**Total Buildings = 4,239**

# Where and How Do We Manage Stormwater?



# Where?





**Where to Protect**



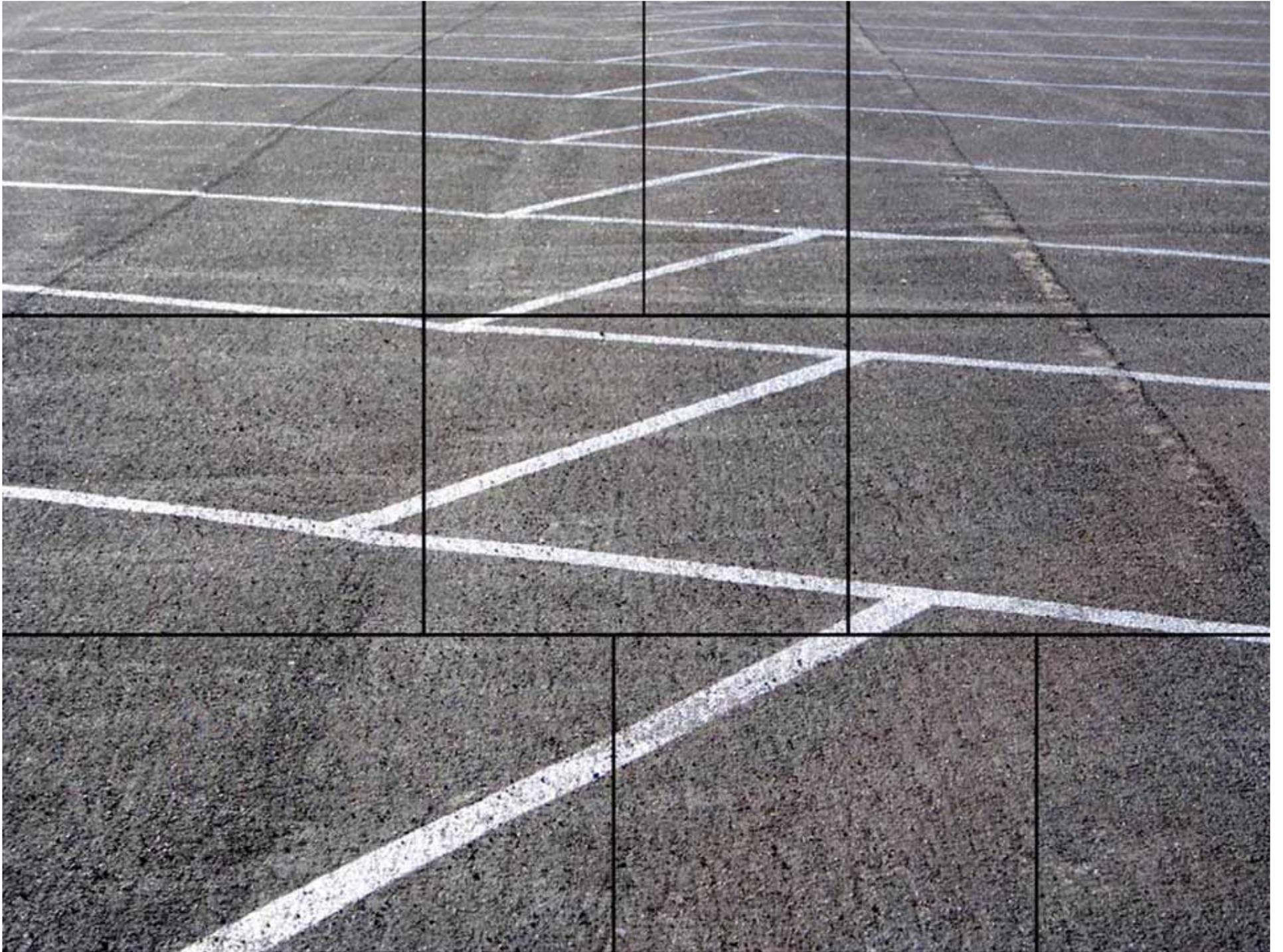
**Where to direct growth**



How?

Low Impact Development











# Low Impact Development

*Modeling designs after natural systems*



# School Street School, Rochester NH



# Portsmouth NH



# Tree Filter, Portsmouth NH





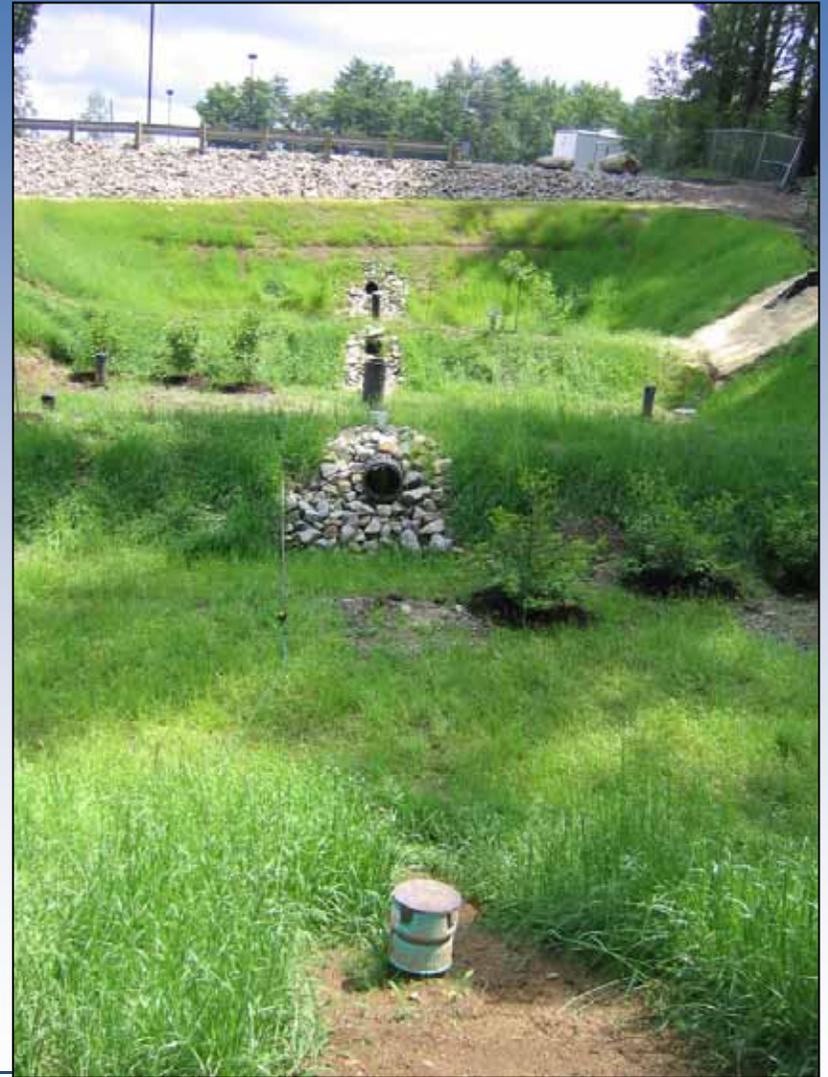
# Portland, Oregon



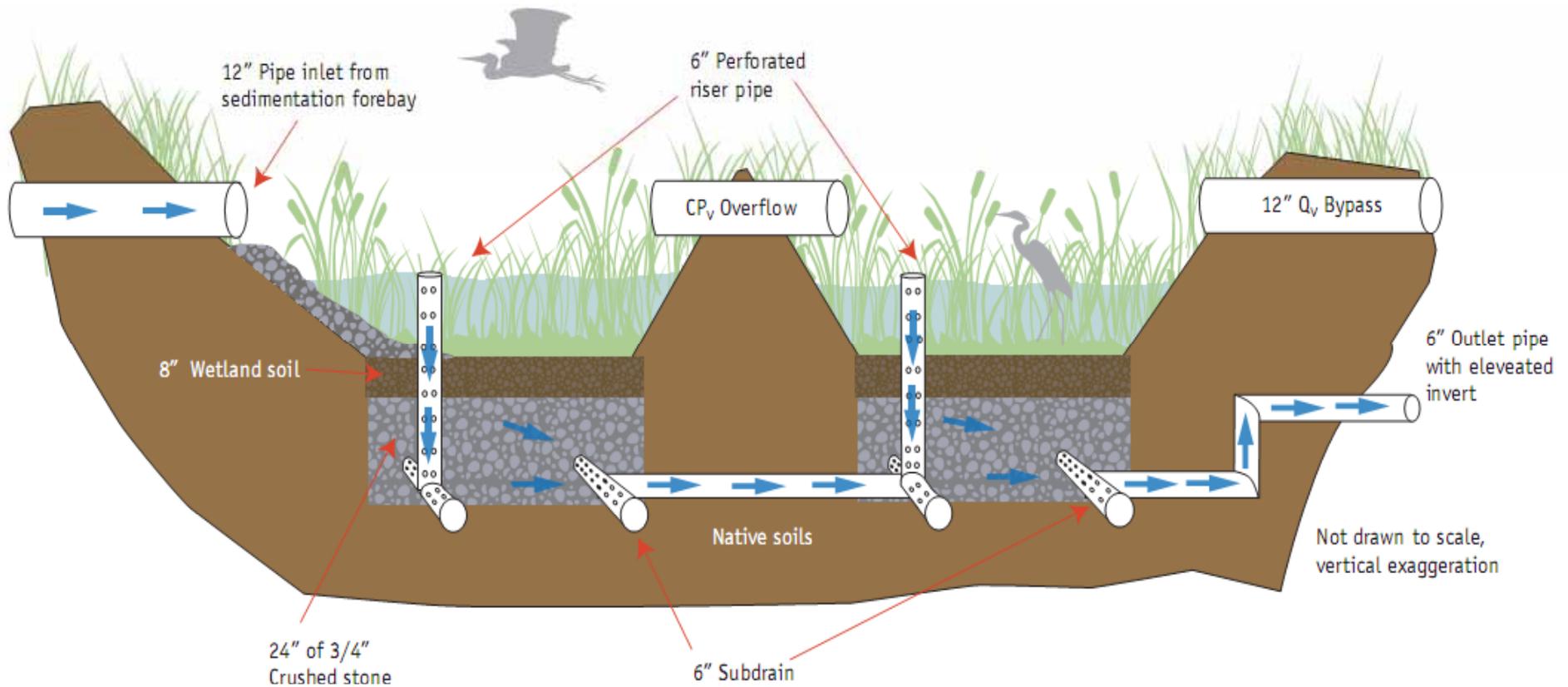
# Kansas City, Kansas



# Gravel Wetland



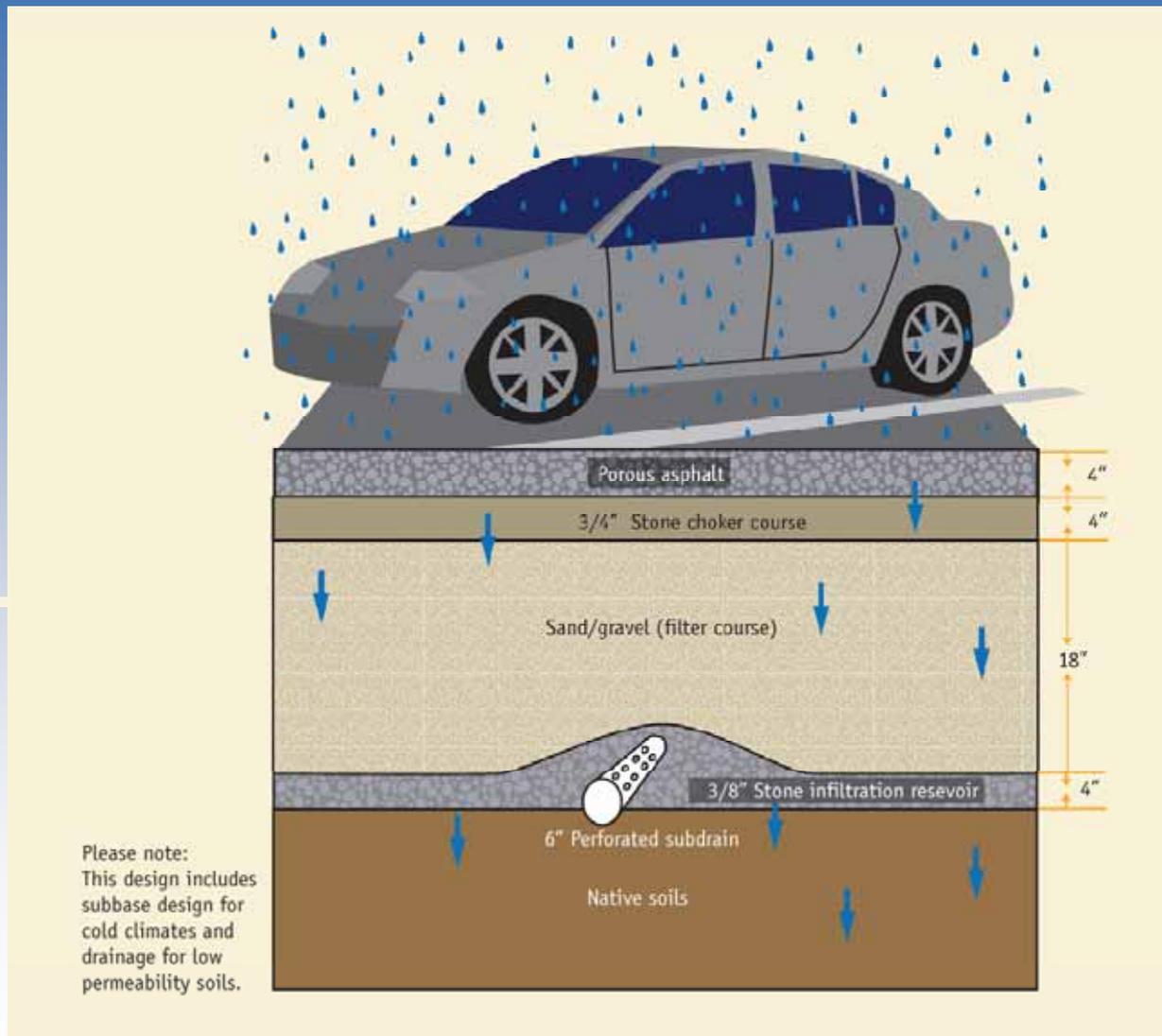
# Gravel Wetland



# Porous Pavements



# Porous Pavements Design



# Not all pollution is the same:

Effectiveness



1. Site Planning/Land Use
2. Source Controls
3. Structural BMP's

## RANGE OF STRATEGY OPTIONS FOR WATER RESOURCE PROTECTION BASED ON LANDSCAPE

MORE RURAL

MORE URBAN

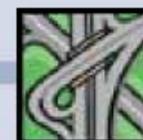
LAND CONSERVATION



RIPARIAN BUFFERS



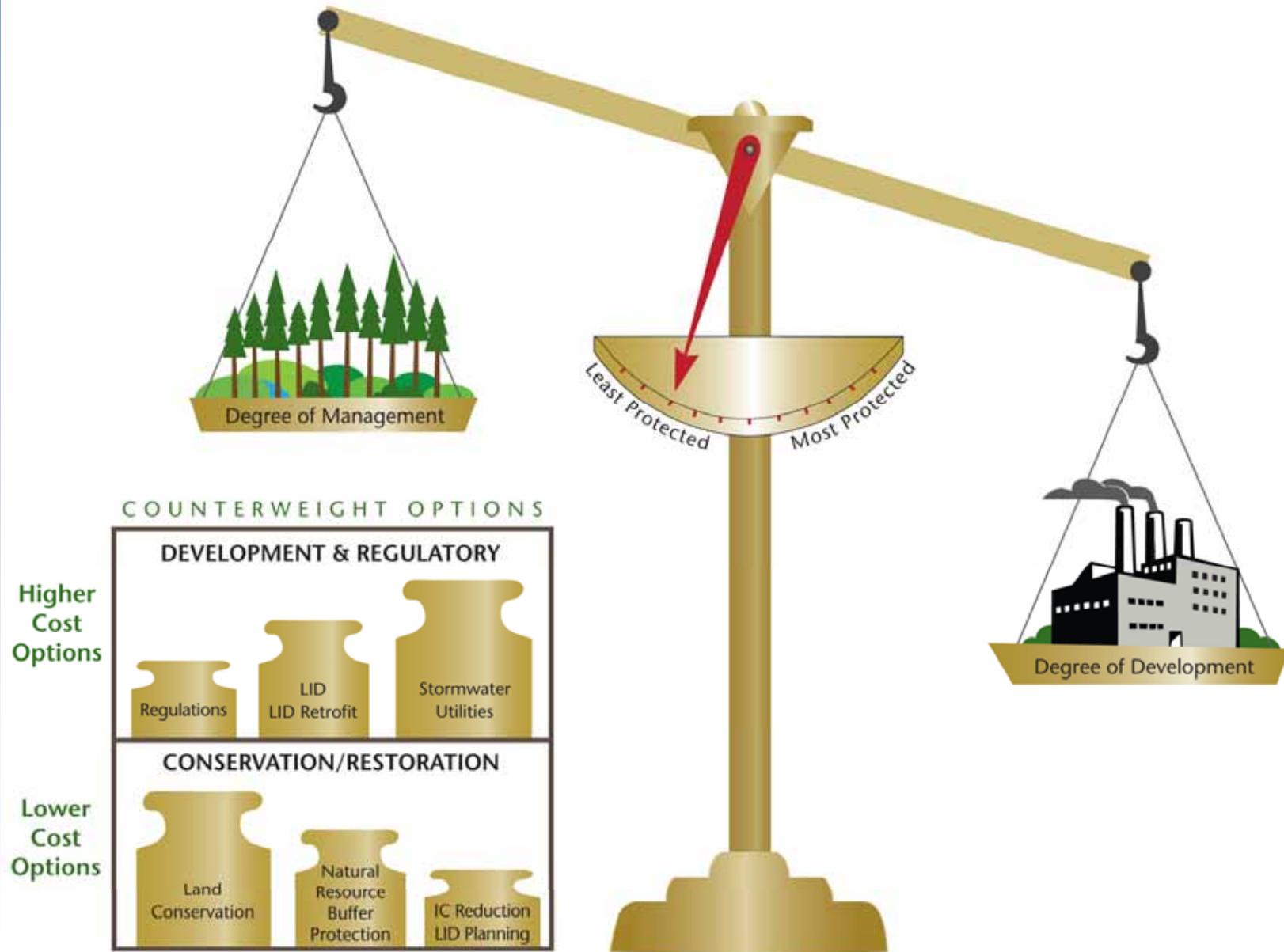
MINIMIZE IMPERVIOUS COVER



LOW IMPACT DEVELOPMENT



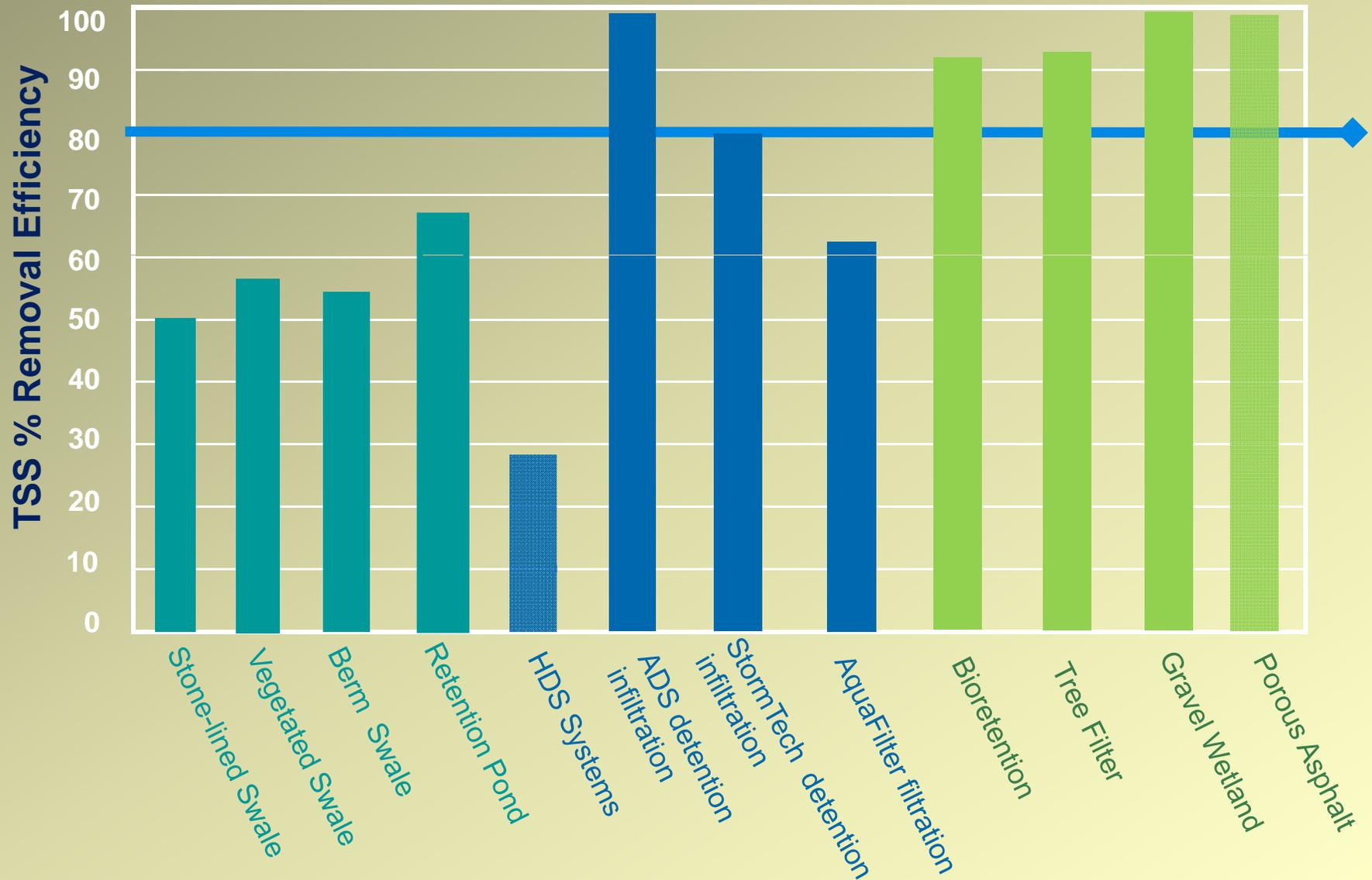
# Counterbalancing Development with Management Strategies



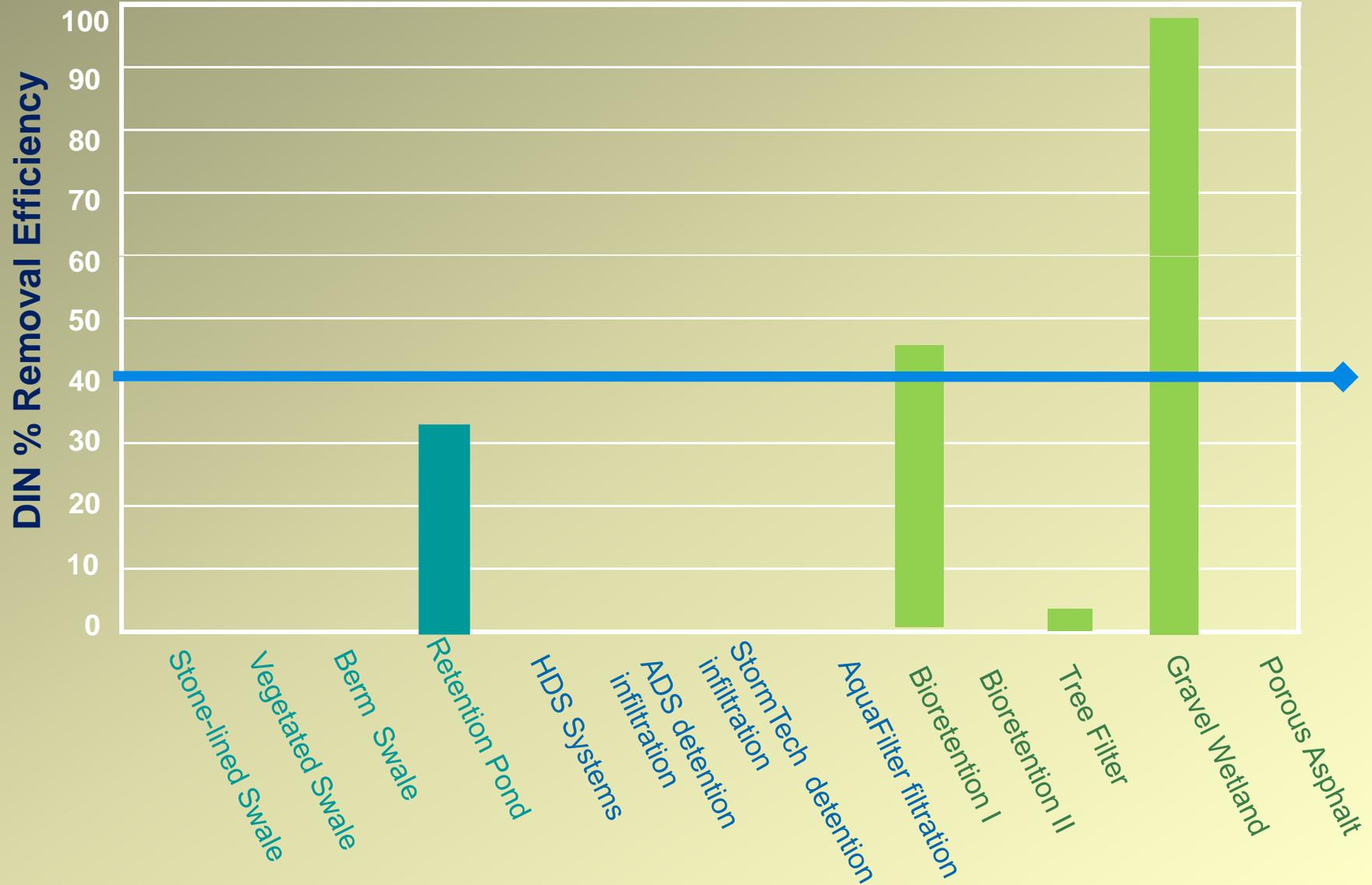
# Performance



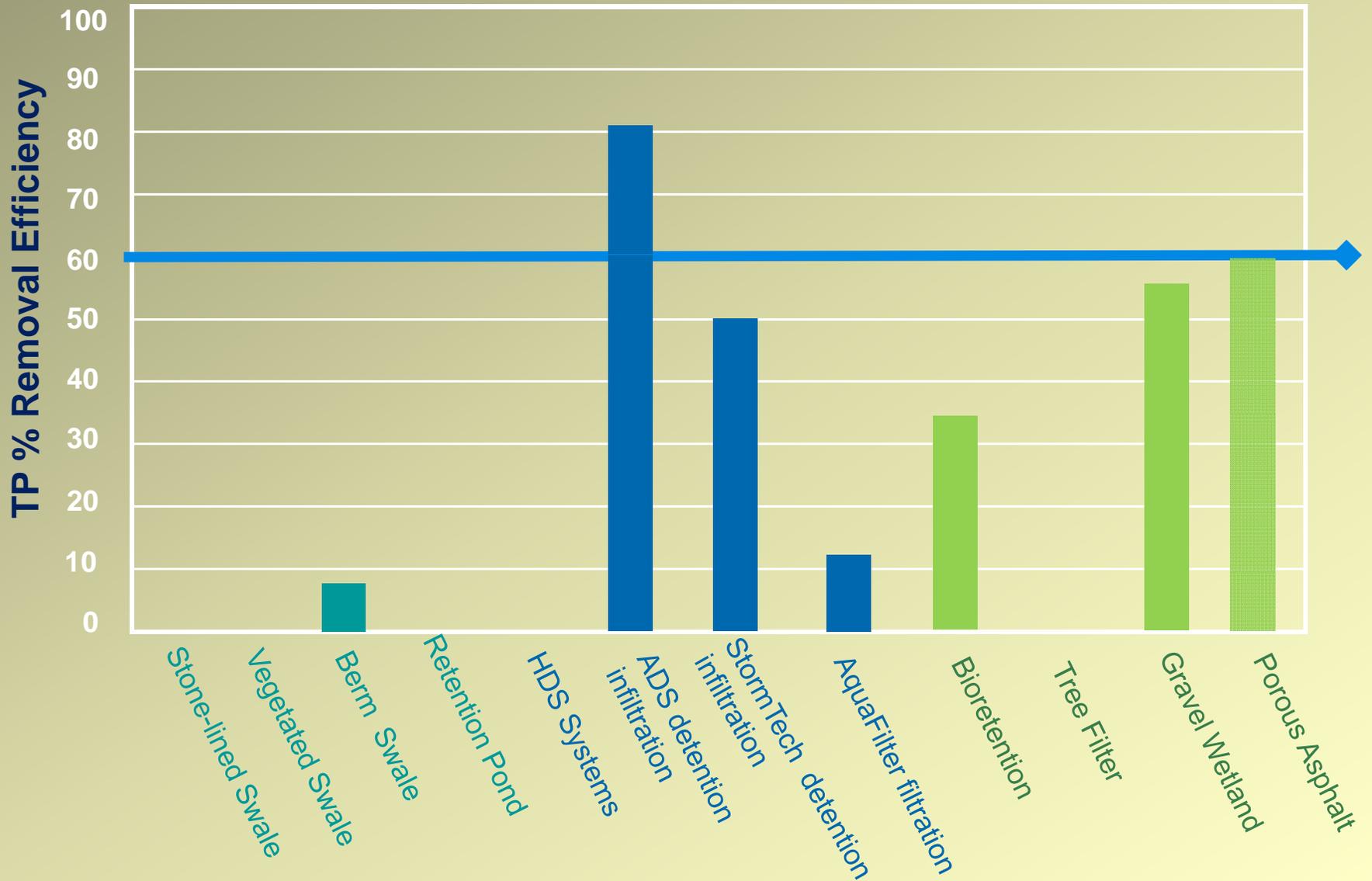
# TSS Removal Efficiencies



# DIN Removal Efficiencies



# TP Removal Efficiencies



# Questions?

View of Mt Washington by moonlight 2/06 from Mt Zealand, NH