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Public Meetings

Taunton River Watershed Project

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6-13-2007

### Taunton River Watershed Study Presentation - part 1 (June 13, 2007 Public Meeting)

Horsley Witten Group, Inc.

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# ***Taunton River Watershed Study***

Horsley Witten Group  
Weston & Sampson  
Geosyntec

# TAUNTON RIVER

## Watershed Study



Watershed Study

[Steering Committee](#)

Watershed Communities

Wastewater

Stormwater Management

Smart Growth

Low-Impact Development (LID)

Additional Information

Workshops

Contact

HOME

### Steering Committee

The Steering Committee for the Taunton River Watershed Study is comprised of representatives from the following agencies and organizations:

Edward Minnock, Ph.D.

[Bridgewater State College, Office of External Affairs](#)

Dr. Kevin Curry

[Bridgewater State College, Watershed Access Laboratory](#)

Alison Bowden

[The Nature Conservancy](#)

Mike Gildesgame

[MA Department of Conservation and Recreation](#)

Pamela Truesdale

[MA Department of Environmental Protection Southeast Region](#)

John Clarkeson

[MA Executive Office of Energy and Environmental Affairs](#)

Bill Napolitano

[Southeastern Regional Planning and Economic Development District](#)

Jim Watson

[Old Colony Planning Council](#)

# **Taunton River Watershed Study - Phase I Public Kick-Off Meeting**

Moakley Center  
Bridgewater State College

## **AGENDA**

June 13, 2007      4:00 – 7:00 PM

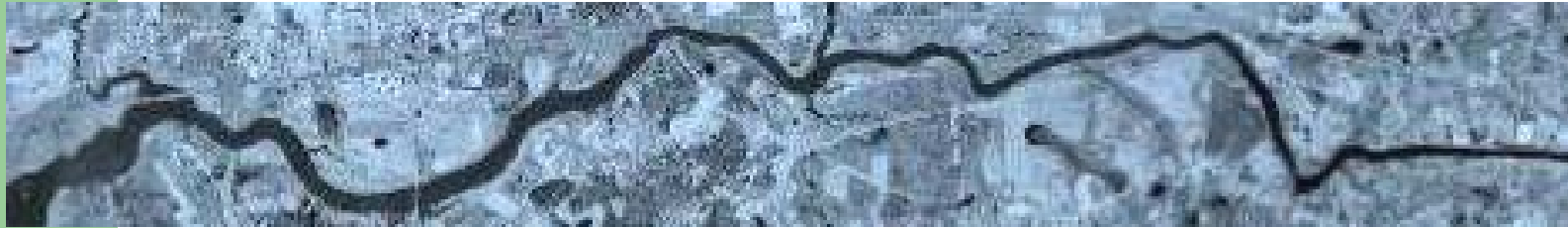
### Welcome

1. Project Overview: Past, Present, Future
2. Progress Report: Data Collection & Water Budget
3. Water Management Practices & Perceptions
4. Questions & Answers

# 2006 Taunton River Watershed Five-Year Action Plan

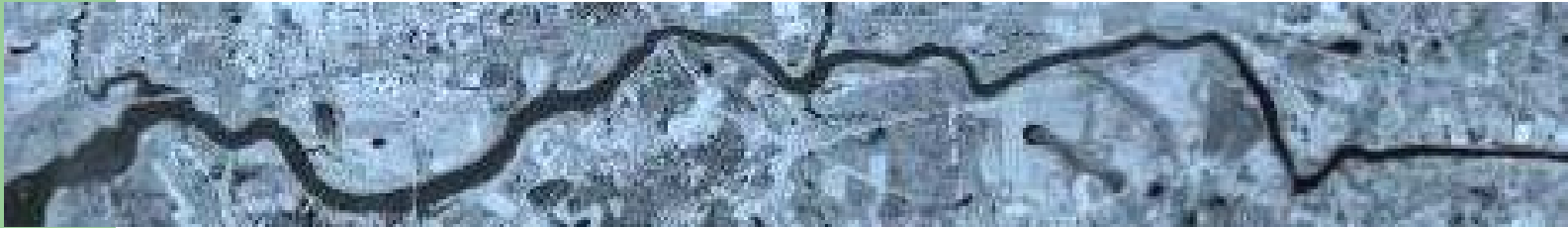


# Five-Year Action Plan Goals



- **Synthesize and Prioritize Existing Information From a Variety of Sources**
- **Promote Watershed-wide Planning, Cooperation and Consistency**
- **Develop a Five Year Action Plan That is Relevant, Focused and Achievable**

# Action Planning Process



## Taunton River Watershed 5-Year Action Plan Public Forums

February 24, 2006 (kickoff meeting)

March 10, 2006

March 24, 2006

April 7, 2006



# Watershed Planning Categories



## *Priority actions for the Taunton River watershed for:*

- A. Water Quality Improvement & Protection**
- B. Wildlife Habitat and Ecology Protection**  
(including Water Quantity Protection)
- C. Recreation and Access**
- D. Open Space, Land Use and Sustainable Development**
- E. Public Outreach and Education**



# The 2006 Taunton River Watershed Five-Year Action Plan



# Project Overview

# TAUNTON RIVER Watershed Study



# **Taunton River Watershed**

## **An Overview**

1. Second largest watershed in MA
2. 530 square miles
3. 42 communities
4. 31% developed
5. 43% potential for development

# Taunton River Watershed Profile

1. Longest un-dammed coastal river in New England.
2. Relatively flat: 21 feet elevation drop over 40 miles in length.
3. 94 square miles of wetlands
4. 12,883 acres of lakes & ponds.
5. 27 habitat types
6. 16,800-acre Hockomock Swamp.

Reference: GeoSyntec, 2006

# **Taunton River Watershed Land Development Patterns 1985 - 2000**

1. Population increase: 13%
2. Land area consumed for development: 22%
3. 31% currently developed
4. 43% potential for development

# Taunton River Watershed Water Supply Profile

1. 27 of 43 communities served by public water systems
2. Average per capita residential water use = 62 gal/day (compared to a state guideline of 65 gal/day)
3. Total public water pumped = 74.7 million gal/day (MGD)
4. Peak month demand = 109 MGD
5. Peak = 46% increase (+34.3 MGD)
6. Regulated withdrawals (Water Management Act) = 97.1 MGD

Reference: Water Assets Study, MA EOEA, 2006



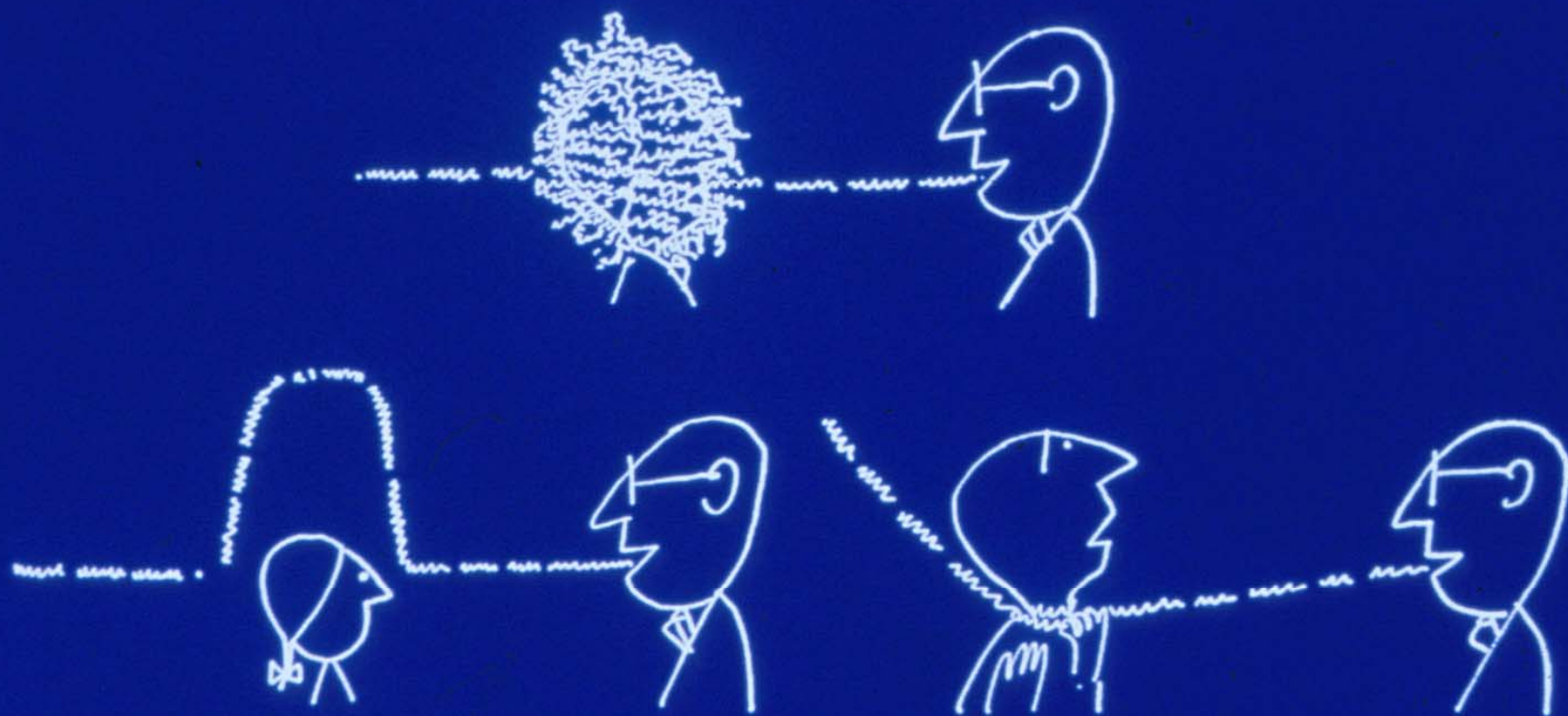
# ***Issues:***

Hydrology: low flows & flooding

Water Quality: nitrogen, pathogens & other

Ecology: wetlands & other habitats

# The Way Some Scientists Talk



By Bernard D.  
New Scien

# *Impacts of Low Flow:*



- Wetlands dry up
- Wetland functions diminished
- Invasive upland plants
- Foot traffic in sensitive areas (compaction)

Photo courtesy of U.S.G.S.

## **Taunton River**

### **Status: Flow (Quantity)**

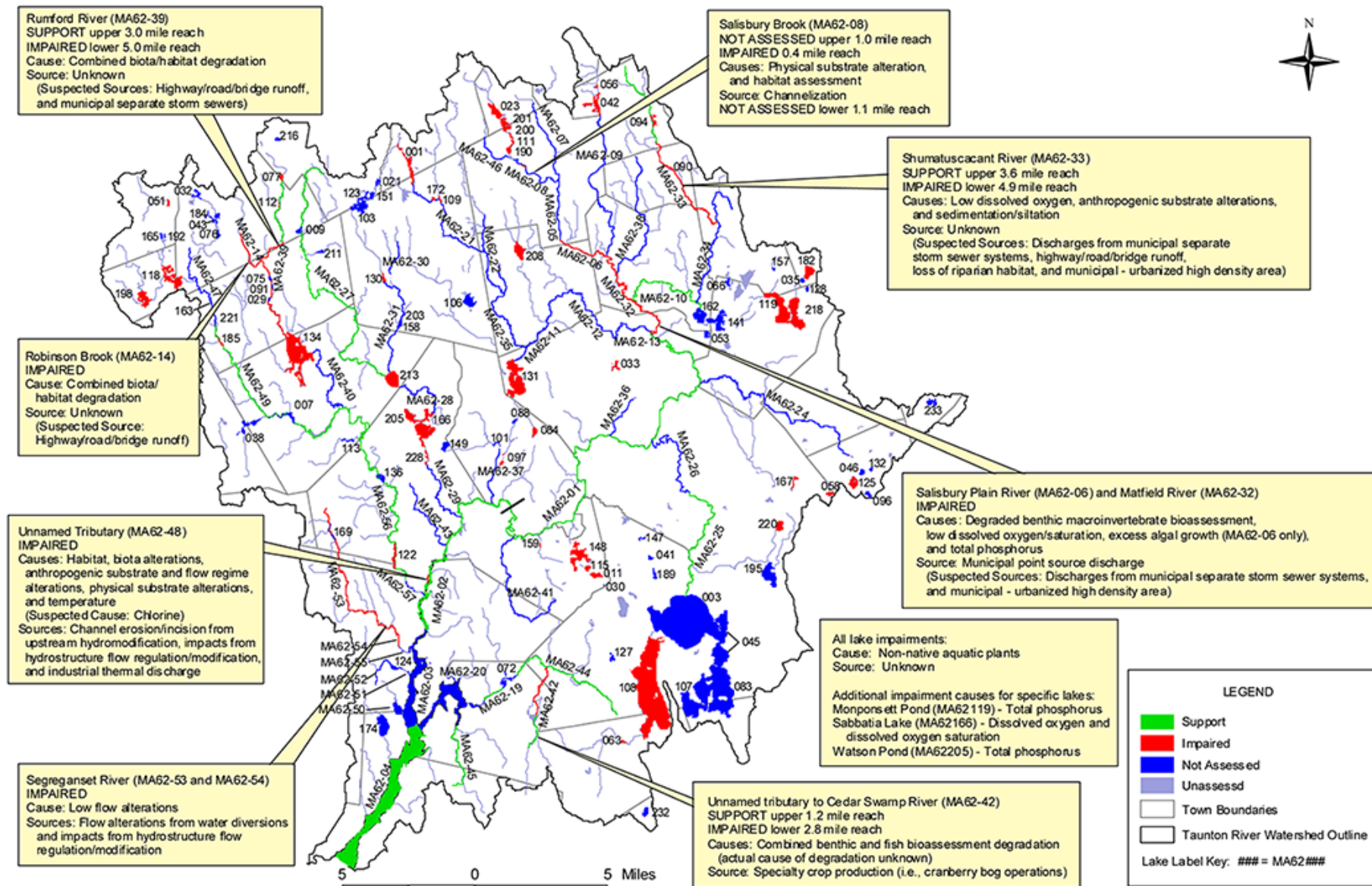
1. 50% of streams “medium” stress
2. 10% of streams “high” stress
3. Remainder unassessed (lack of data)



# Taunton River Status: Water Quality

Aquatic Life Use - Rivers, Estuaries and Lakes

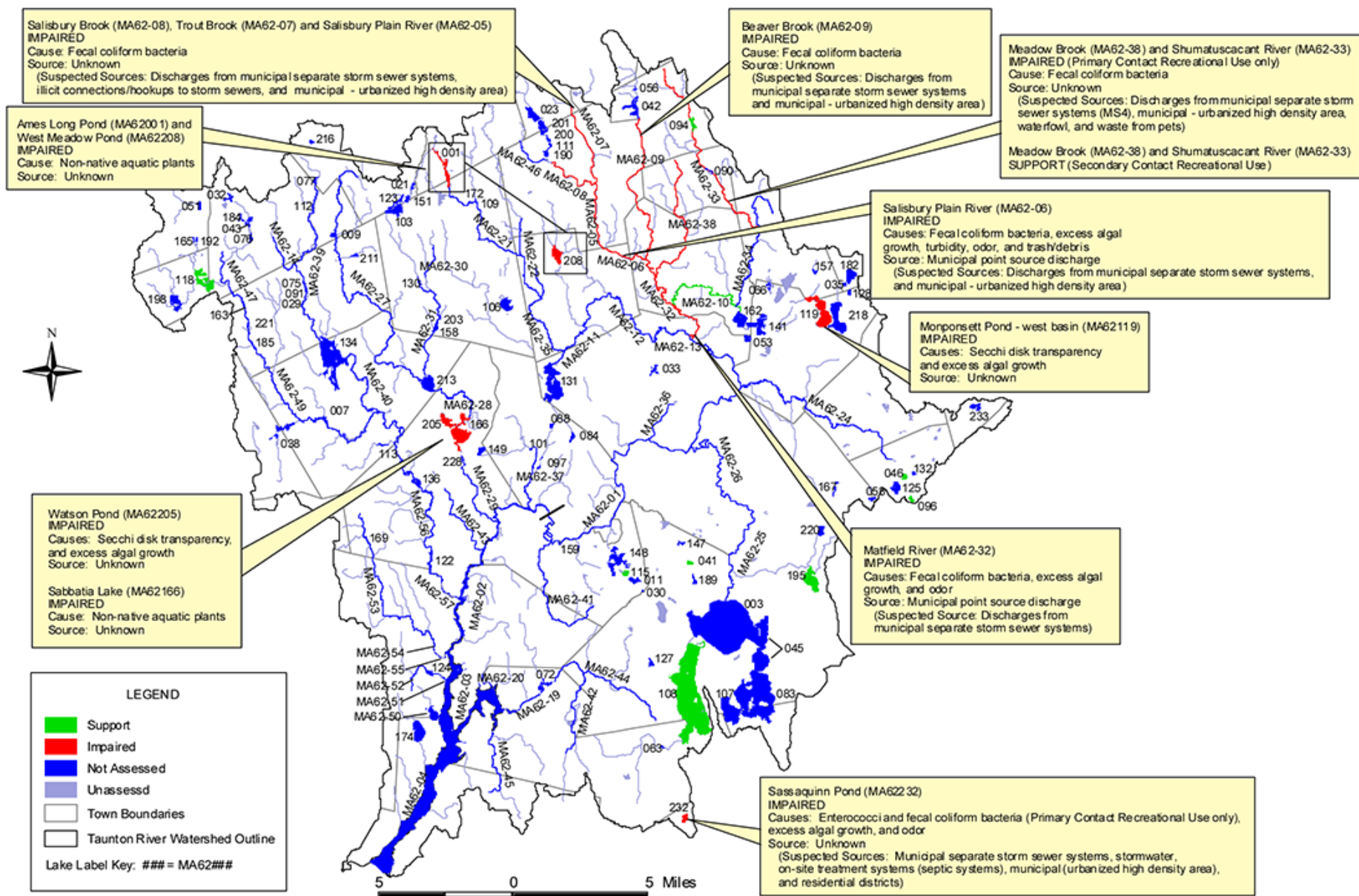
Source: DEP 2005



# Taunton River Status: Water Quality

Primary and Secondary Contact Recreational uses - Rivers, Estuaries and Lakes

Source: DEP 2005



# ***THE CAUSES!***

Numerous incremental decisions

.....



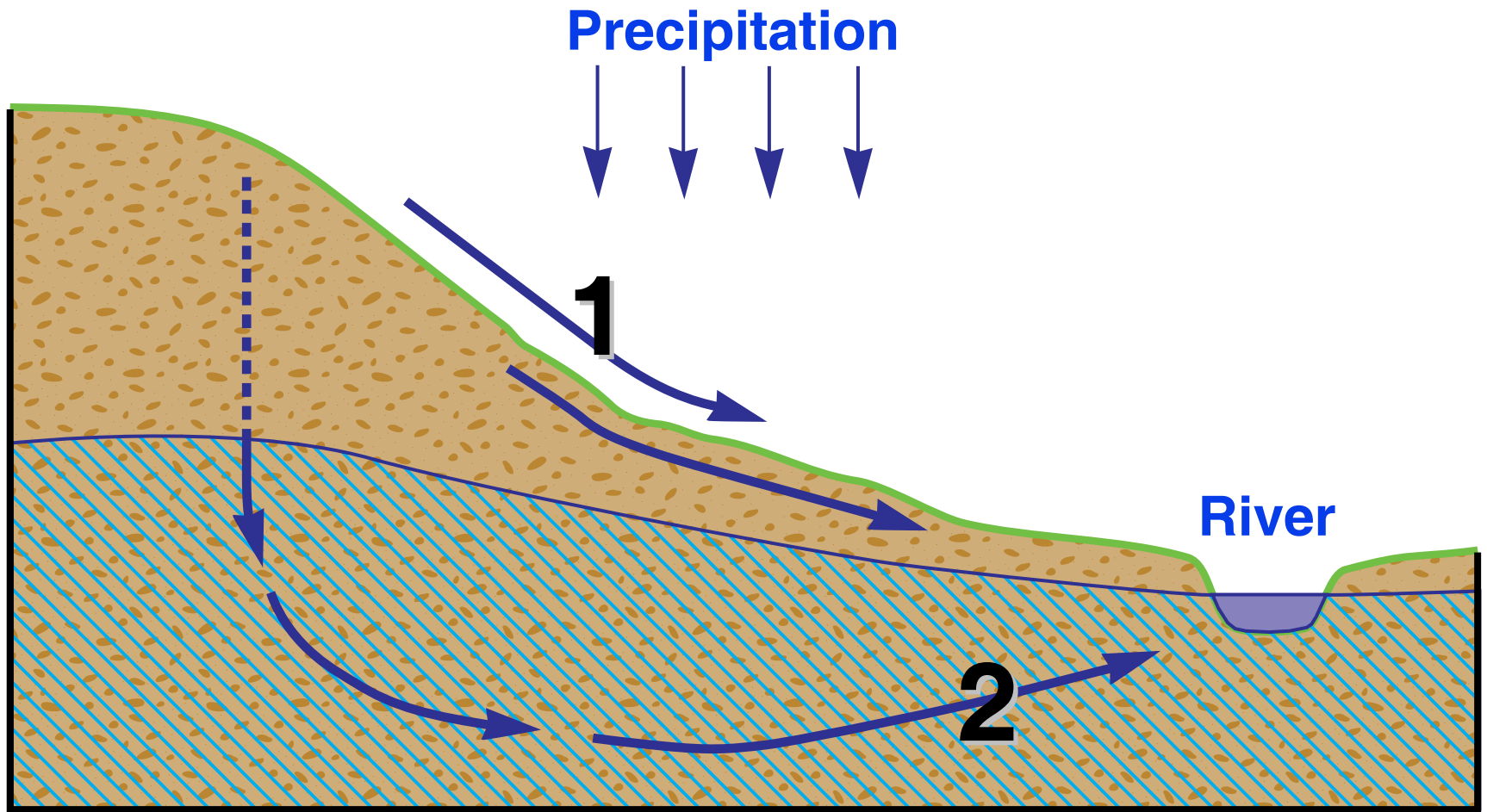
# ***THE CAUSES!***

Numerous incremental decisions  
.....each one well-intended

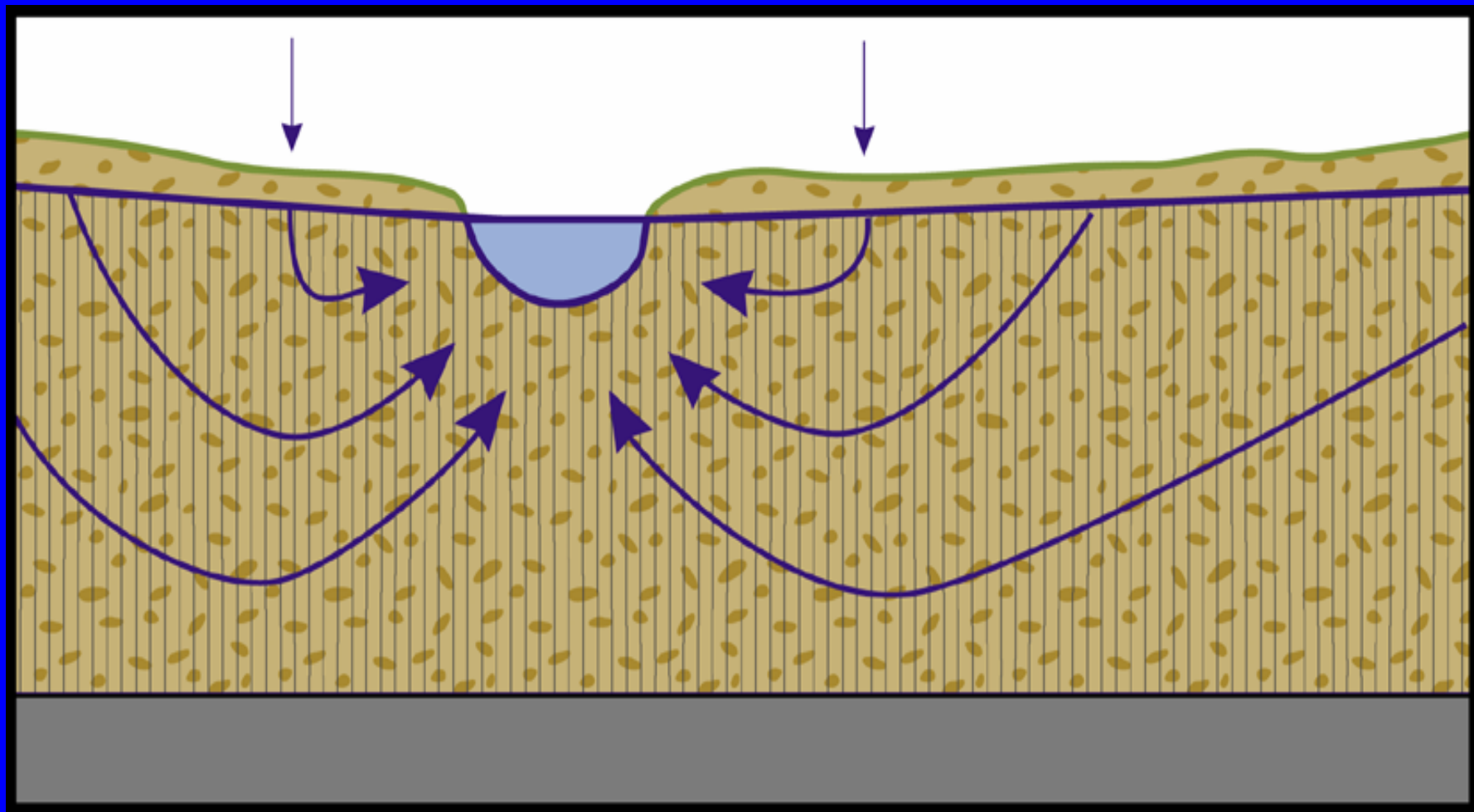
# ***THE CAUSES!***

Numerous incremental decisions  
.....each one well-intended  
= cumulative impacts

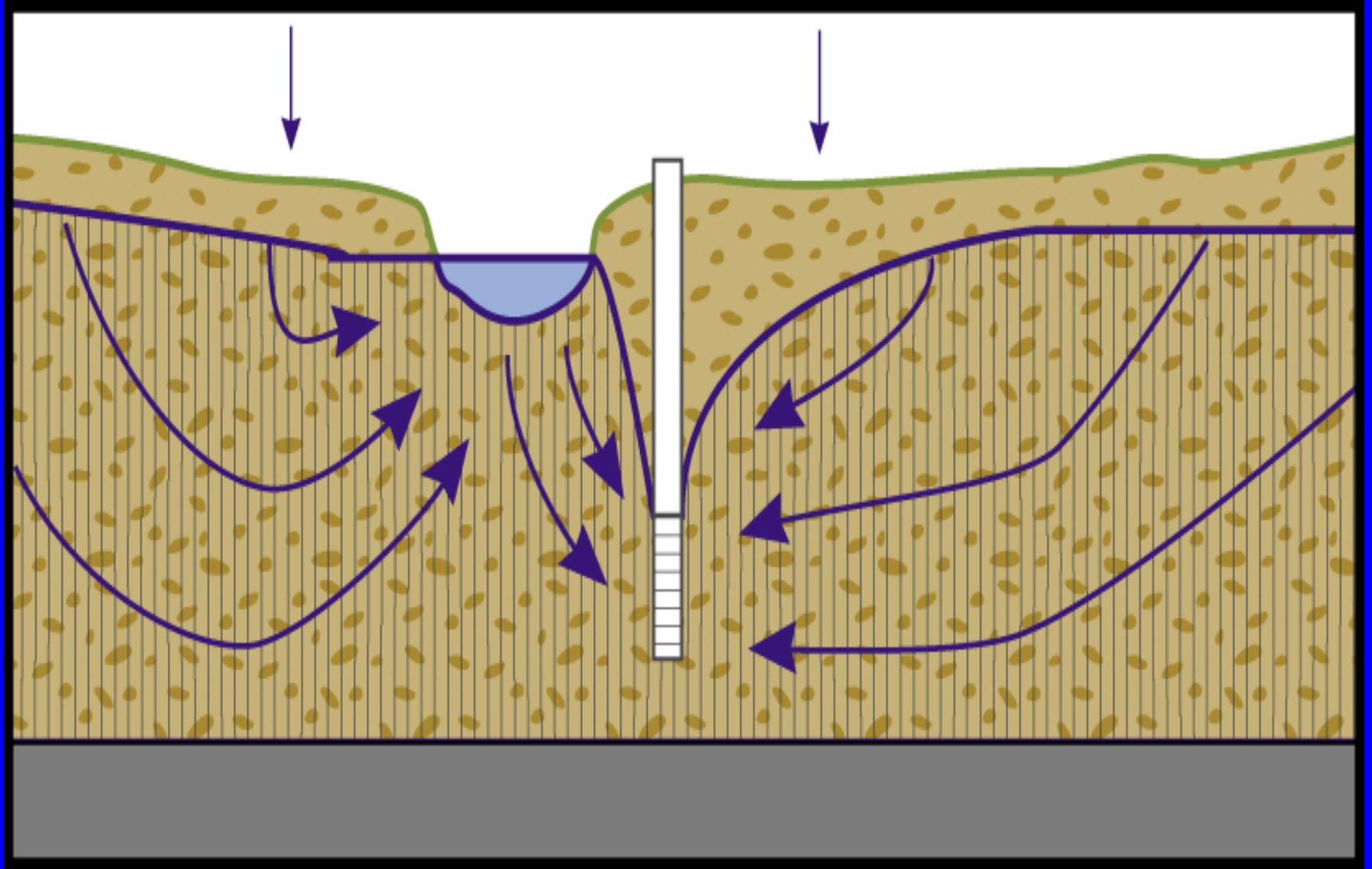
# Paths of Water Flow Within Watershed



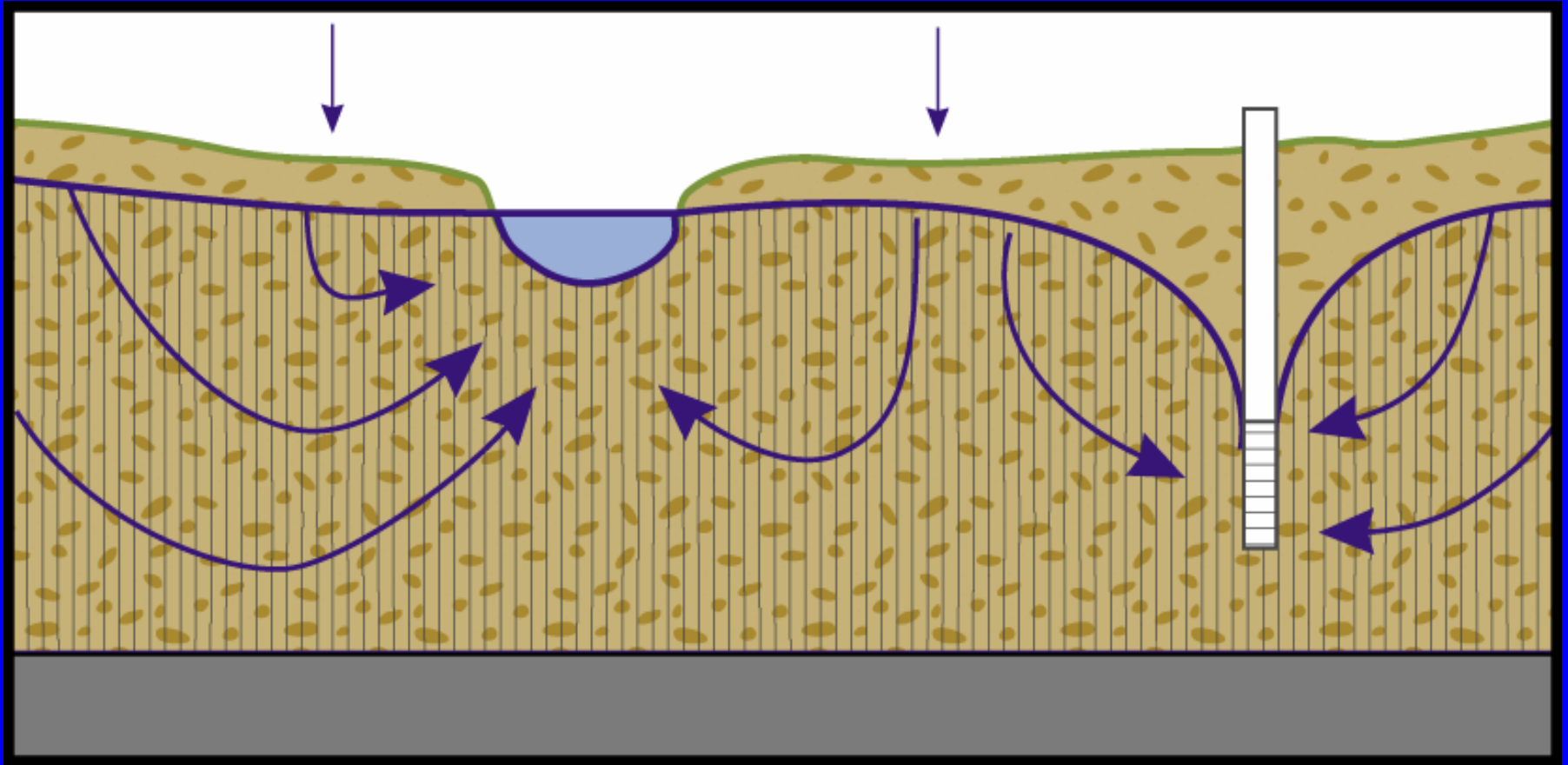
**1 - Overland Flow    2 - Ground Water Flow**



# TYPE 1 WITHDRAWALS



# TYPE 2 WITHDRAWALS







Horsley Witten Group



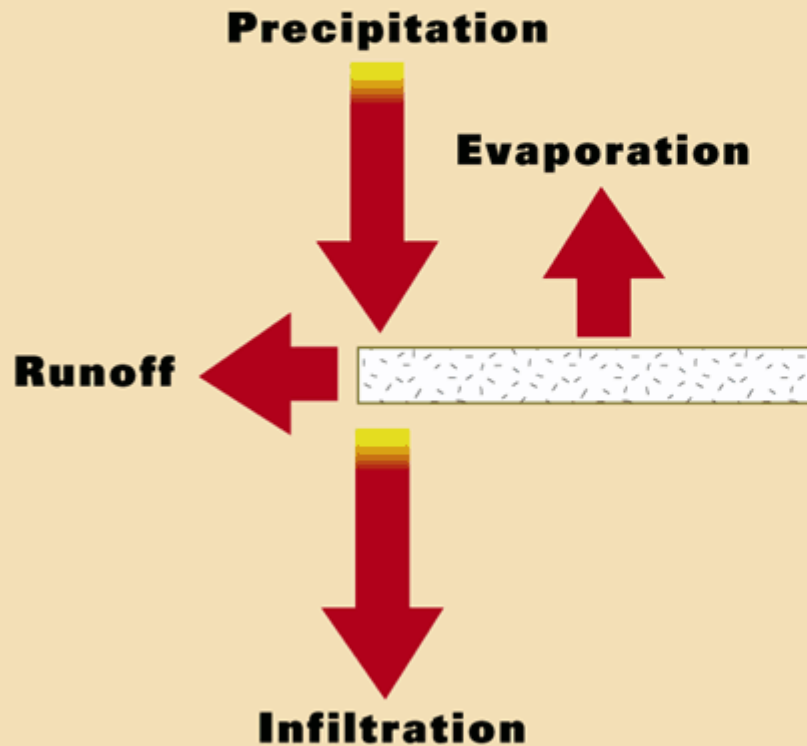




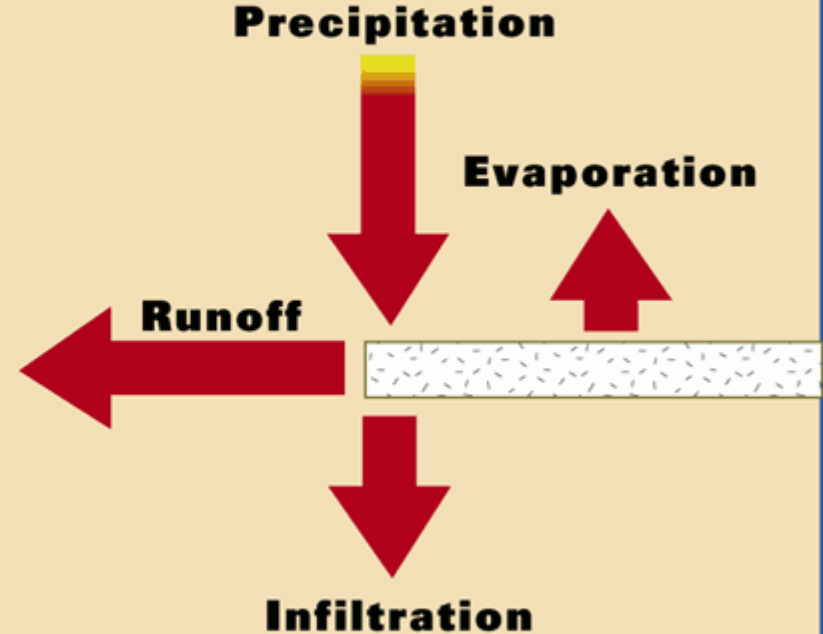


# Water Cycle Diagram

## PRE DEVELOPMENT CONDITIONS



## POST DEVELOPMENT CONDITIONS





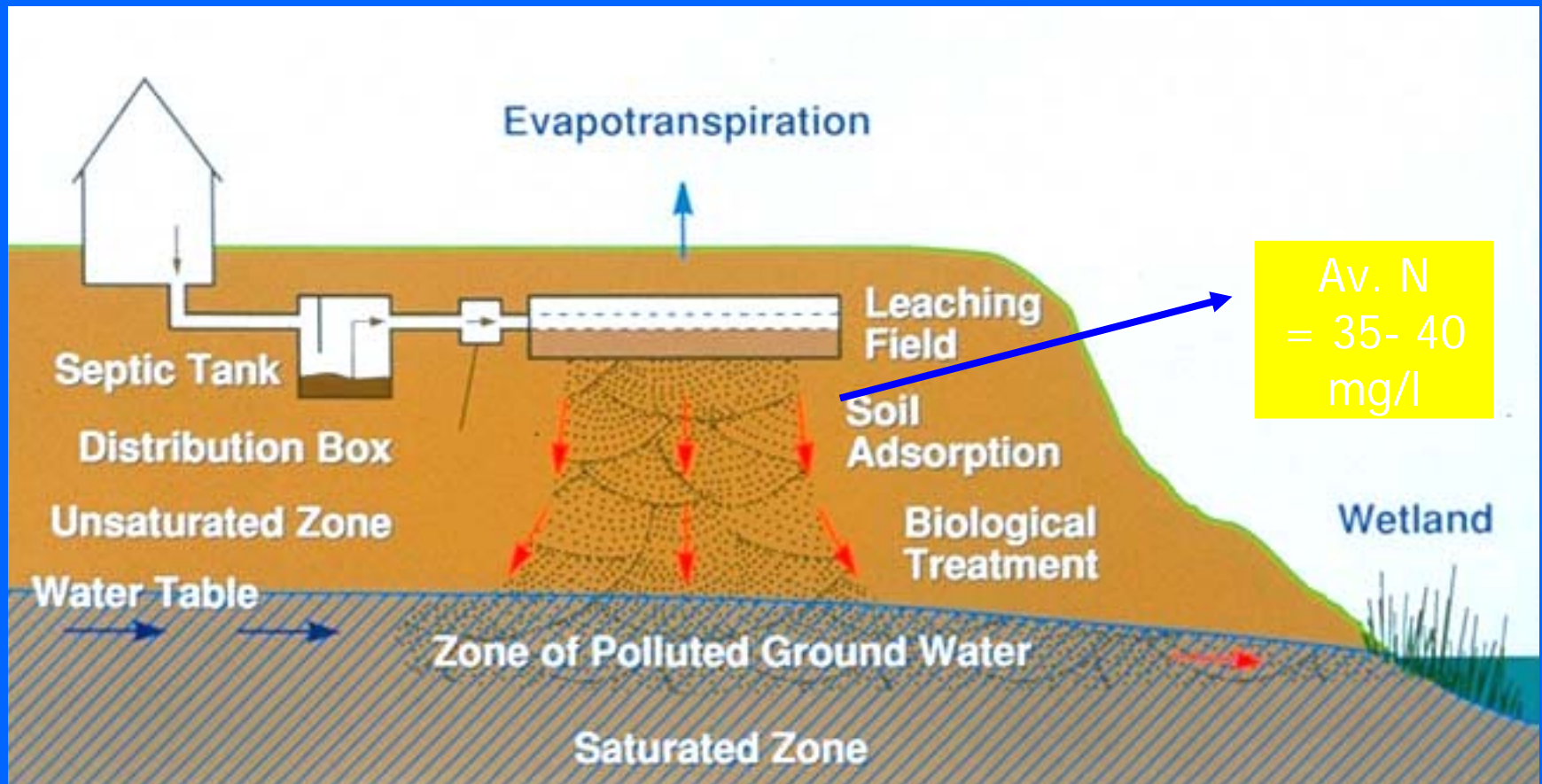
# Water Quality/Habitat Degradation



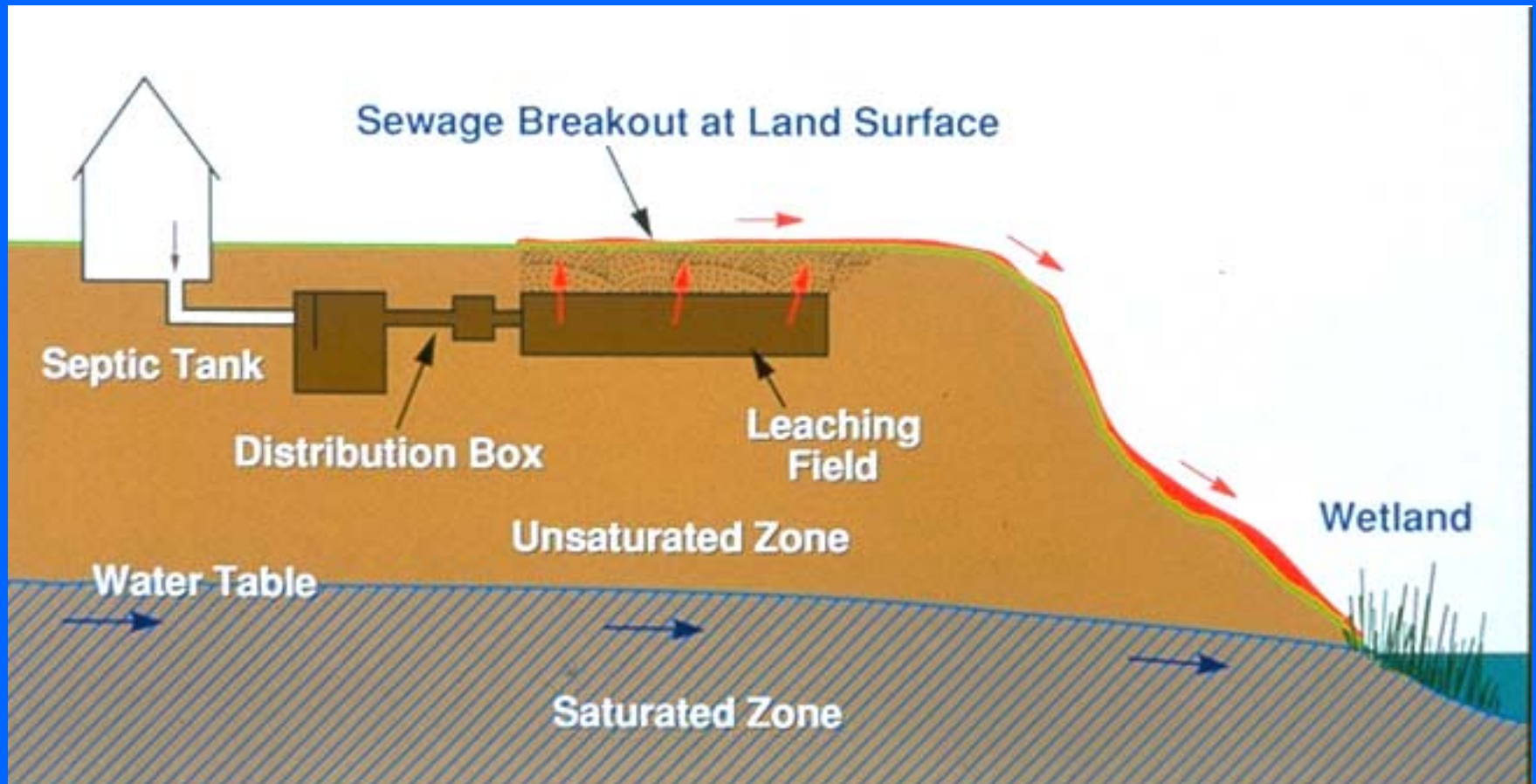
14:13



# Septic Systems and Pollutant Loading (nitrogen, phosphorus, viruses, bacteria, pharmaceuticals, nitrosamines...)

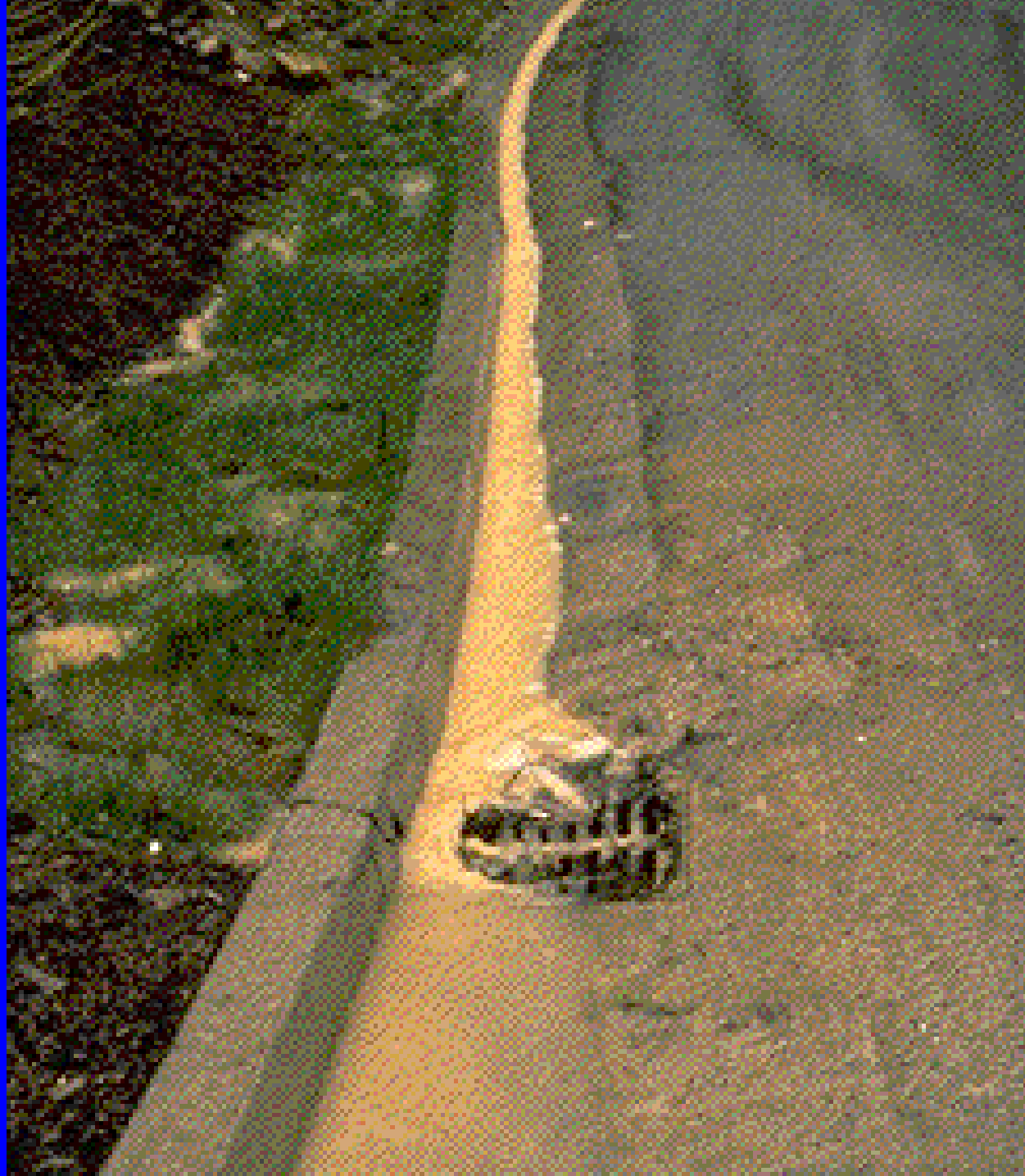


# On-Site Septic Hydraulic Failure









# Atmospheric Deposition

Pollutants  
carried  
away by  
wind and  
traffic

Pollutants emitted  
from motor vehicles

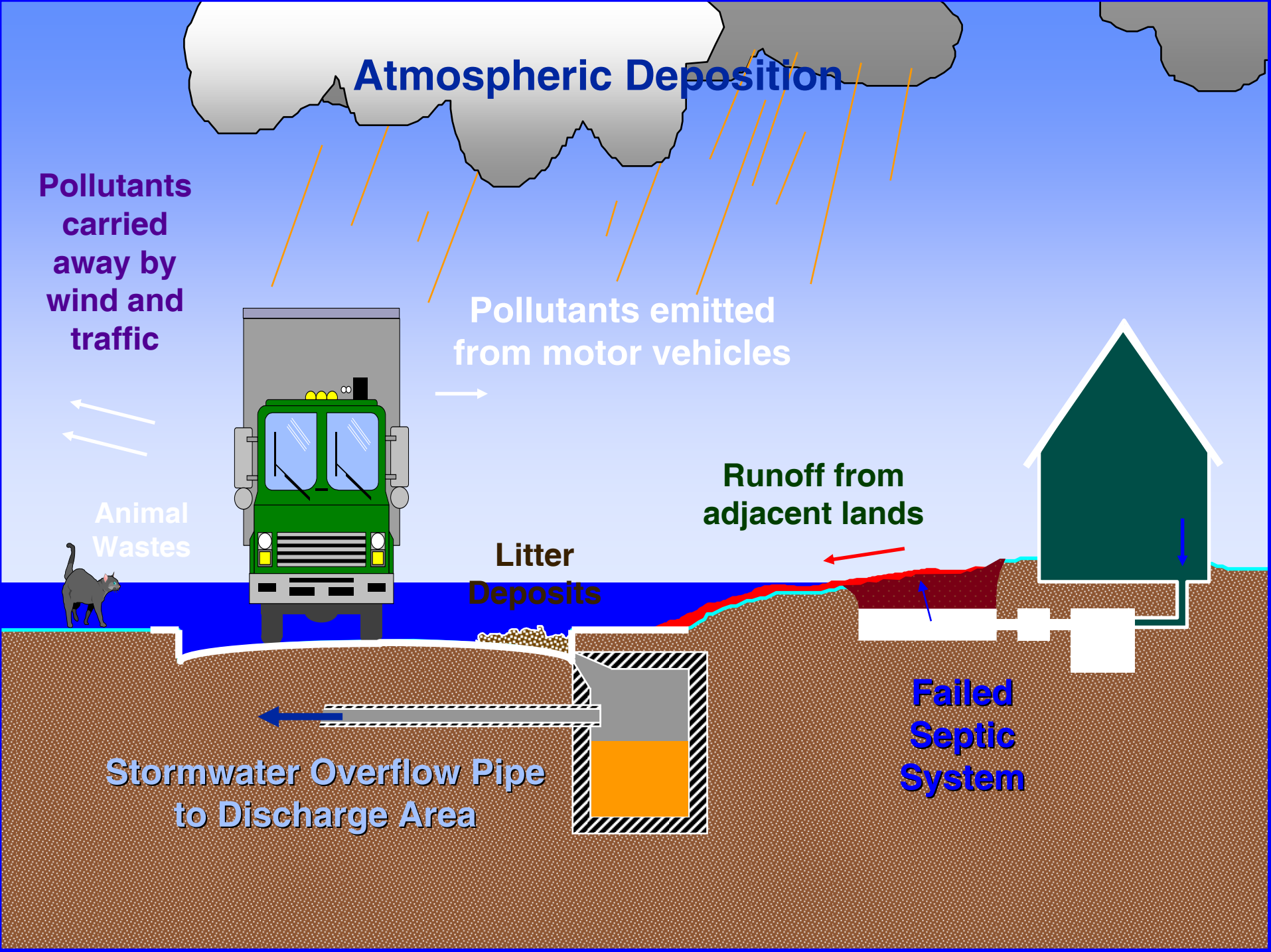
Runoff from  
adjacent lands

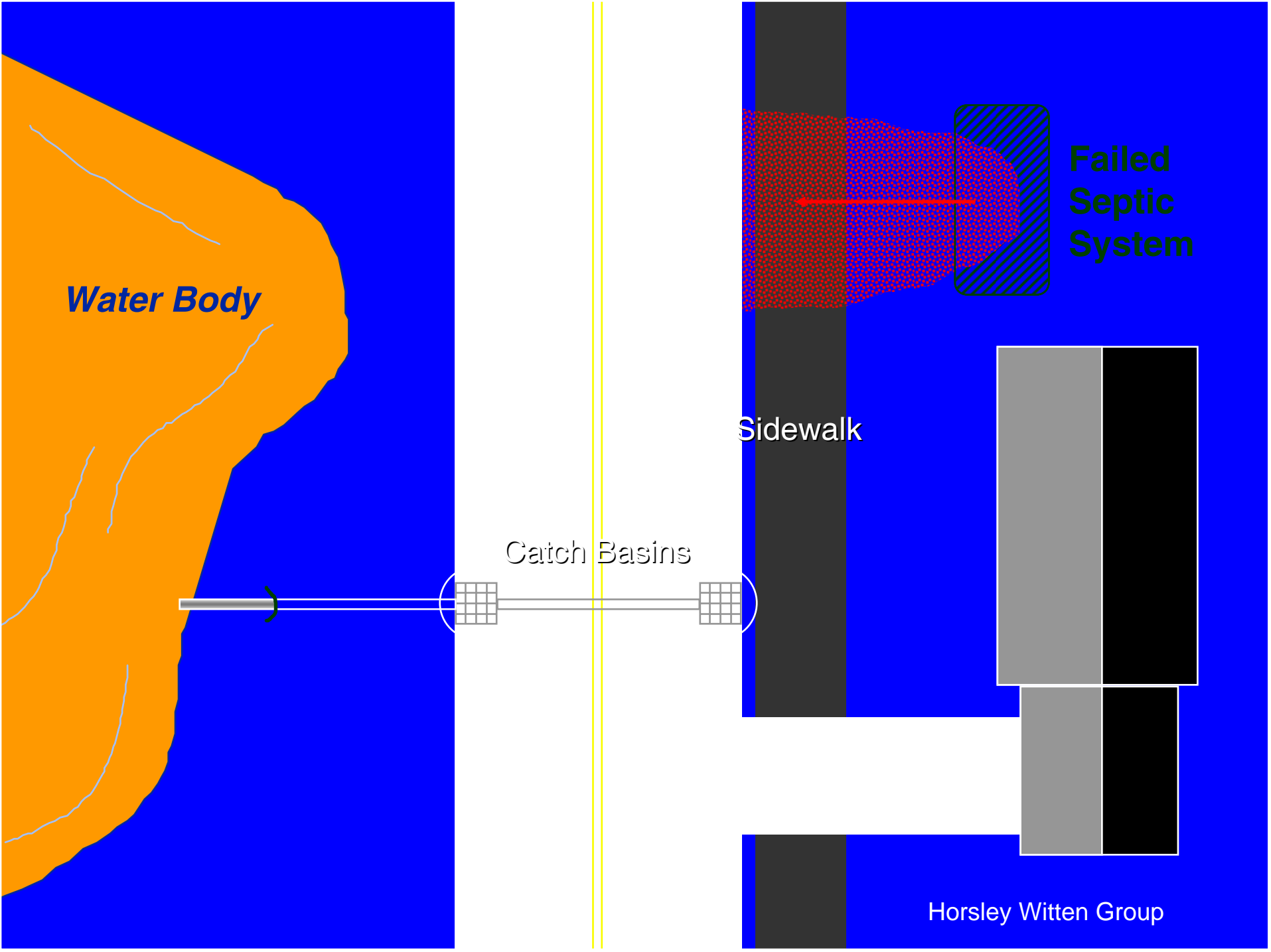
Animal  
Wastes

Litter  
Deposits

Failed  
Septic  
System

Stormwater Overflow Pipe  
to Discharge Area





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# SUMMARY OF STORMWATER RUNOFF POLLUTANT EFFECTS

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- Sediment
- Thermal Stress
- Nutrients
- Oxygen-Demanding Organics
- Toxic Substances
- Pathogens
- Stream Discharge



# **Taunton River Watershed Study - Phase I**

## **Scope of Work**

1. Project Management
2. Public Participation/Outreach
3. Analysis:
  1. Data Collection
  2. Water Budget Analysis
  3. GIS Analysis
  4. Smart Growth Initiatives
4. Outline for Watershed Action Plan

# **Taunton River Watershed Comprehensive Management Plan Project**

## **Tentative Project Meeting and Event Dates**

### **TASK 1**

#### ***Steering Committee Meetings (to be held at Bridgewater State College)***

- Thursday, April 19, 2007 (8:30–10:30 am)\*
- Thursday, September 13, 2007 (8:30–10:30 am)
- Thursday, January 10, 2008 (8:30–10:30 am)
- Thursday, May 8, 2008 (8:30–10:30 am)

*\* Phase II Visioning Session*

### **TASK 2B**

#### ***Public Outreach Kick-off Meeting (location to be determined)***

- Wednesday, June 13, 2007 (4-7 pm)

#### ***Stakeholder Meetings (to be held throughout the watershed)***

- Monday, November 5, 2007 (4-7 pm)
- Wednesday, November 7, 2007 (4-7 pm)
- Monday, November 12, 2007 (4-7 pm)
- Wednesday, November 14, 2007 (4-7 pm)

#### ***Issues Charrettes (possibly held at Bridgewater State College)***

- Wednesday, April 2, 2008 (4-7 pm)
- Wednesday, April 9, 2008 (4-7 pm)

#### ***Watershed Event (location to be determined)***

- Saturday, September 15, 2007 (daytime)

# TAUNTON RIVER

## Watershed Study



Watershed Study

Steering  
Committee

Watershed  
Communities

Wastewater

Stormwater  
Management

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Low-Impact  
Development (LID)

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### Introductory Meeting - Taunton River Watershed Study

Wednesday, June 13

## Welcome

We need your help in developing an effective plan to protect and restore the Taunton River as a source of our drinking water while maintaining the vital environmental and recreational values we all treasure.

As a resident, business, or agency within the Taunton River Watershed, your interests, insights and information are important to the development of a new and exciting **Taunton River Watershed Study**. The Taunton River Watershed Steering Committee would like to introduce our project and invite you to participate in a number of upcoming watershed activities where you can learn more about the watershed and provide input and feedback to help guide the planning process. The study will encompass all 42 communities and over 560 square miles of the Taunton River watershed, the second largest watershed in MA, and we hope to get as many of you involved as possible.

<http://www.horsleywitten.com/tauntonwatershed/>