

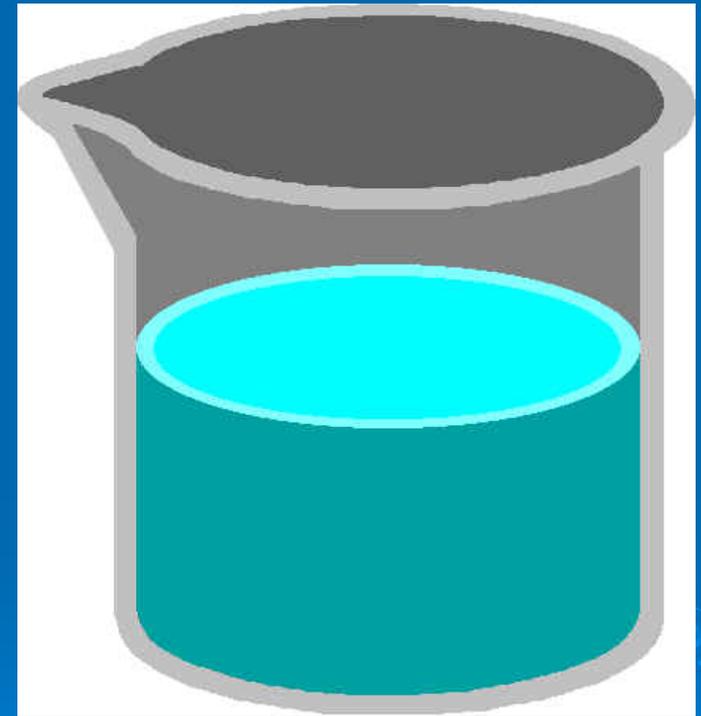
Fresh Water in the World

71% of the Earth's surface
Is covered by water...

To Scale there are 970 mL
In the beaker...

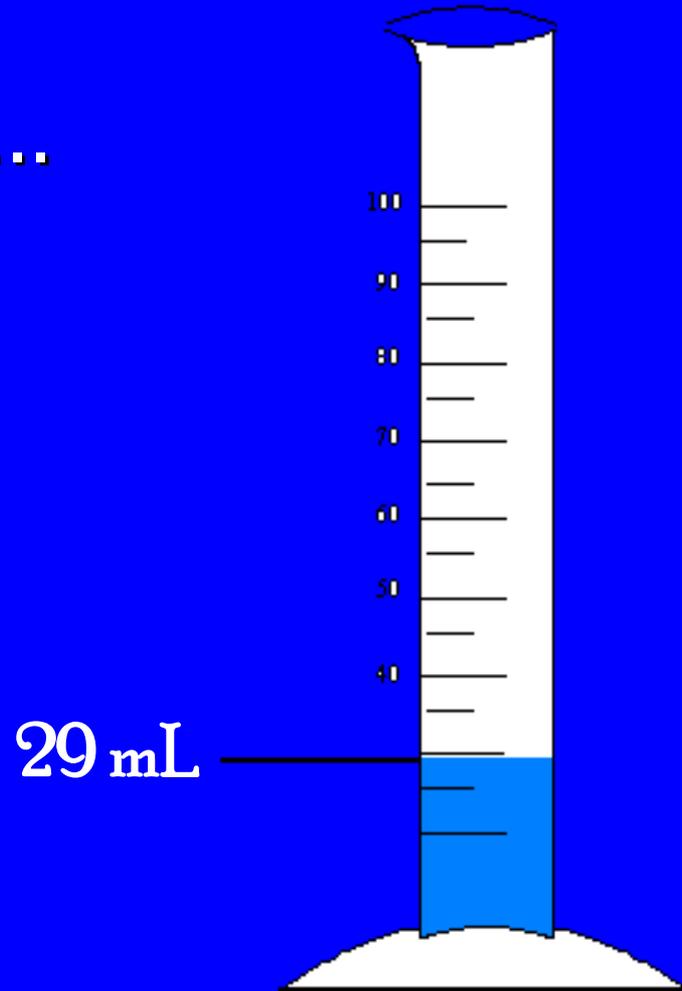
100% of the Worlds water...

970mL



Fresh Water in the World

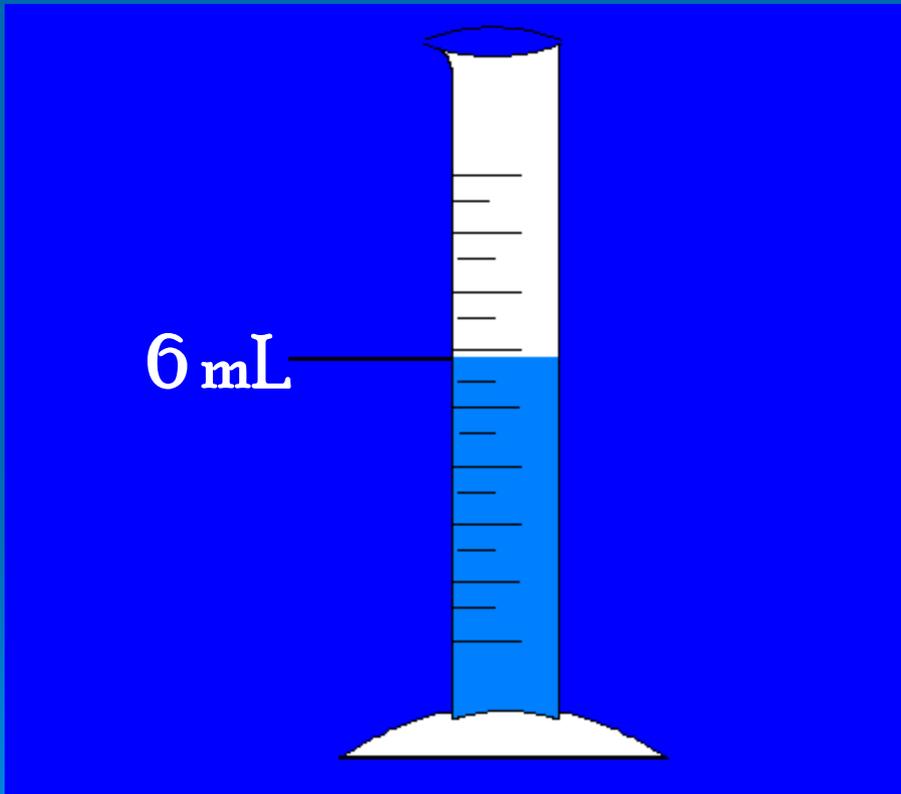
Minus 97% that
Is saline or salt water...
Leaving 29 mL



Fresh Water in the World

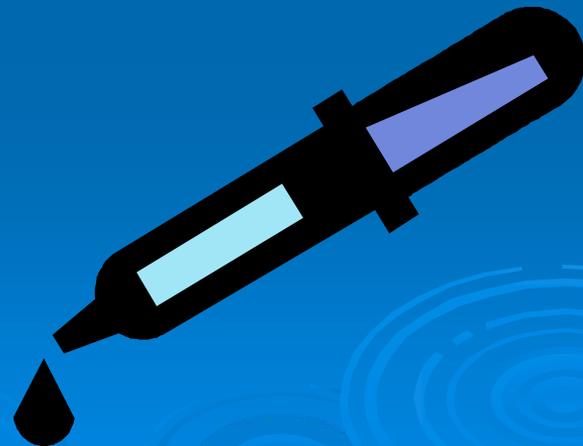
Minus the 80% that is frozen in Glaciers & at
the Poles.

That leaves 6 mL



Fresh Water in the World

Minus the 99.5% of that
Which is polluted or “trapped”
in the soil or too far underground
And that leaves about one drop for human
use and consumption



Saratoga County Intermunicipal

Stormwater Management Program:

A Coalition of County Government, Cornell Cooperative Extension & 15 Towns, Villages and Cities working to better manage Stormwater Runoff & Non-point Source Pollution for Better Water Quality

| | | | |
|---------------------|------------------|-----------------|------------------|
| Ballston | Ballston Spa (V) | Charlton | Clifton Park |
| Greenfield | Halfmoon | Malta | Milton |
| Moreau | Round Lake (V) | Saratoga County | Saratoga Springs |
| So. Glens Falls (V) | Waterford | Waterford (V) | Wilton |

Major water quality issues, World-wide

| <u>Issue</u> | <u>Water body</u> | <u>Sector affected</u> | <u>Time</u> | <u>Extent</u> |
|-----------------|-------------------|------------------------|-------------|----------------|
| Organic Poll.* | R, L, GW | Aquatic env. | <1 yr | Local-District |
| Pathogens* | R, L, GW | Human health | <1 yr | Local |
| Salinization | GW, R | Most uses | 1-10 yr | Dist-Region |
| Nitrate* | R, L, GW | Health, Aquatic | >10 yr | Local-Region |
| Heavy Mtls* | All bodies | Health, Aquatic | <1-10yr | Local-Global |
| Organics* | All bodies | Health, Aquatic | 1-10 yr | Local-Global |
| Acidification | R, L, GW | Health, Aquatic | >10 yr | Dist-Region |
| Eutrophication* | R, L | Most uses, Aquatic | >10 yr | Local |
| Sedimentation* | R, L | Most uses, Aquatic | 1-10 yr | Local-Region |
| Dams/Diversions | R, L, GW | Most uses, Aquatic | 1-10 yr | Dist-Region |

Source: UNESCO World Water Assessment Prog; 2003. NOTE: * = NPS

The National Picture

(Why Stormwater Management?)

- ☁️ Urban Runoff/Non-Point Source Pollution (NPS; pollution from diffuse sources) = 45% (avg) of pollutants in freshwater bodies & Estuaries
- ☁️ #1 impairment to Estuaries & #2 for Lakes/Rivers
- ☁️ The last major, identifiable, unregulated source of water pollution
- ☁️ Crucial for prevention/protection of still healthy, developing watersheds (like we have in Saratoga County)

The Local Snapshot

- ☁️ 303(d) Listed water bodies (> 2%) – Lake Lonely Tribs (Phosphorous, C/BODs, pathogens), Dwaas Kill & Tribs (Phosphorous, silt/sediment) & Hudson R.* (Mercury, Dioxins)
- ☁️ 2nd fastest growing County in NYS (30.5% from 1980–2000)
- ☁️ Avg approximately 1300 building permits a year
- ☁️ One major watershed study (Saratoga L.)
- ☁️ Snapshot data for Ballston Lake (CDRPC)
- ☁️ Local-only planning & protection of lands adjacent to ponds, Lakes, Streams & Rivers = a local issue.

THE PROBLEM?

Runoff & ...

 Improperly managed runoff increases “peak discharges” into our streams which causes...

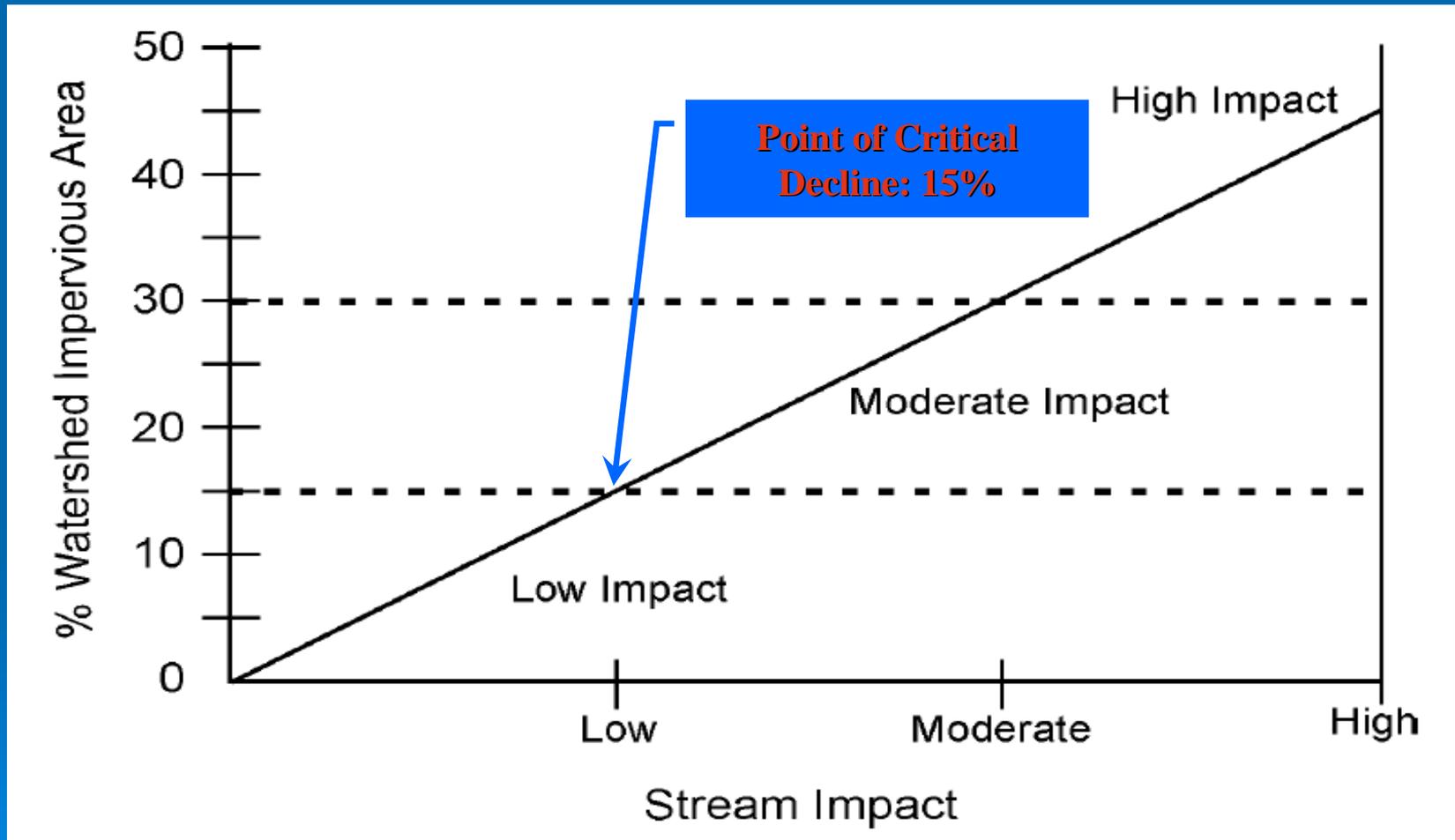
 streambank erosion

 sediment loading

 losses of land

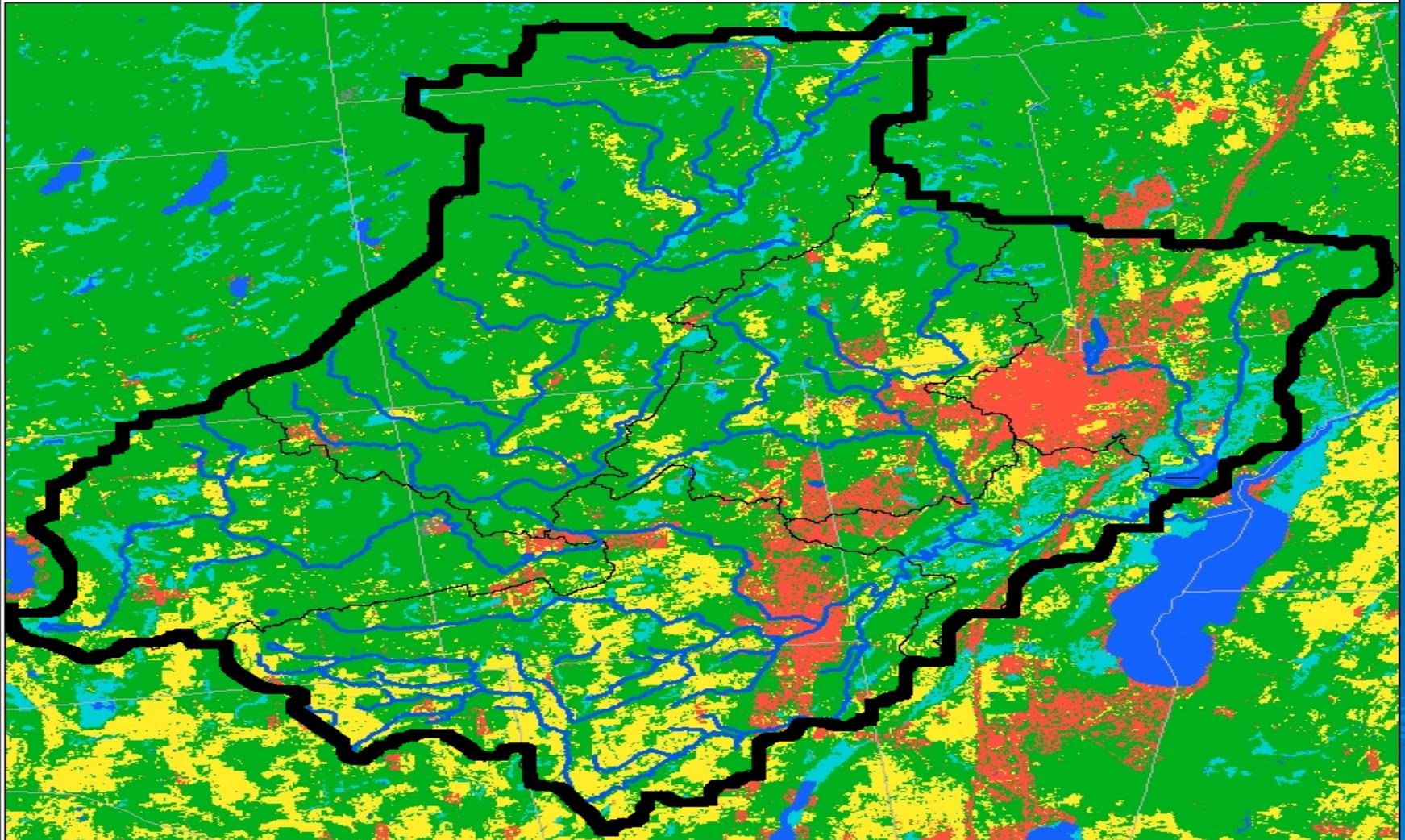
 flooding

Impervious Impact to watersheds



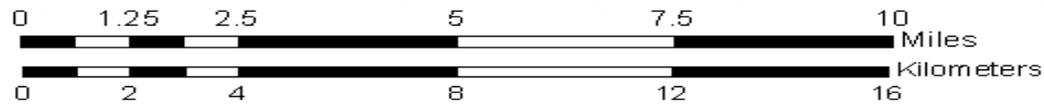
From *The Center for Watershed Protection*

Kayaderosseras Land Use



Legend

- Streams
- Town
- Subsheds



Legend

- Water
- Developed
- Barren/Mined
- Forested
- Agriculture
- Wetlands

Created by Conor Taff
With data from ESRI, USGS



NPS...it's Everywhere.

Everywhere?

NPS comes in many forms...

☁️ sediments

☁️ nutrients

☁️ toxics

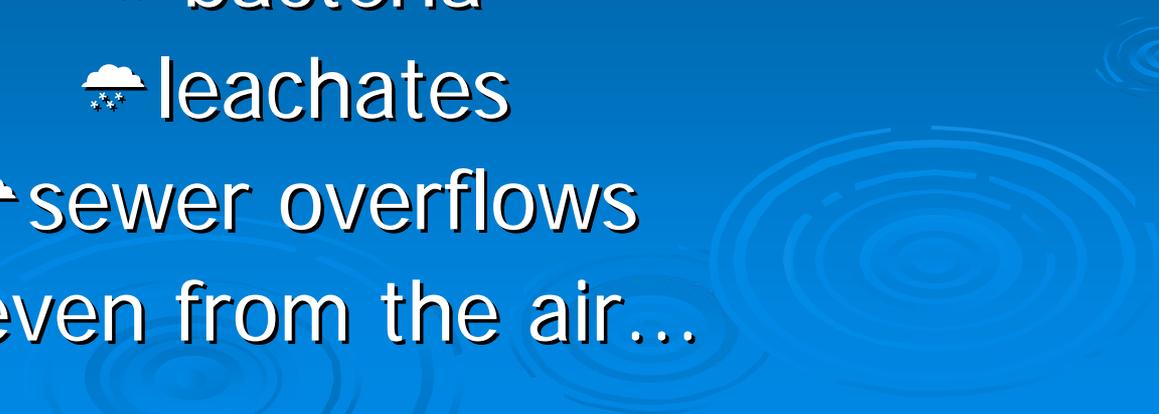
☁️ trash

☁️ bacteria

☁️ leachates

☁️ sewer overflows

☁️ even from the air...



Out of sight, out mind, right?

Yup...right into our waters!

When it rains, stormwater washes litter into nearby streams and rivers where it can remain for months, years or even eons:

Paper bag –

1 month

Plastic bottle –

430 years

Cigarette butt –

up to 5 years

Aluminum can –

200-500 years

Leather shoe –

45 years

Glass or Styrofoam container

Approx. 1 million years

Disposable diaper –

550 years

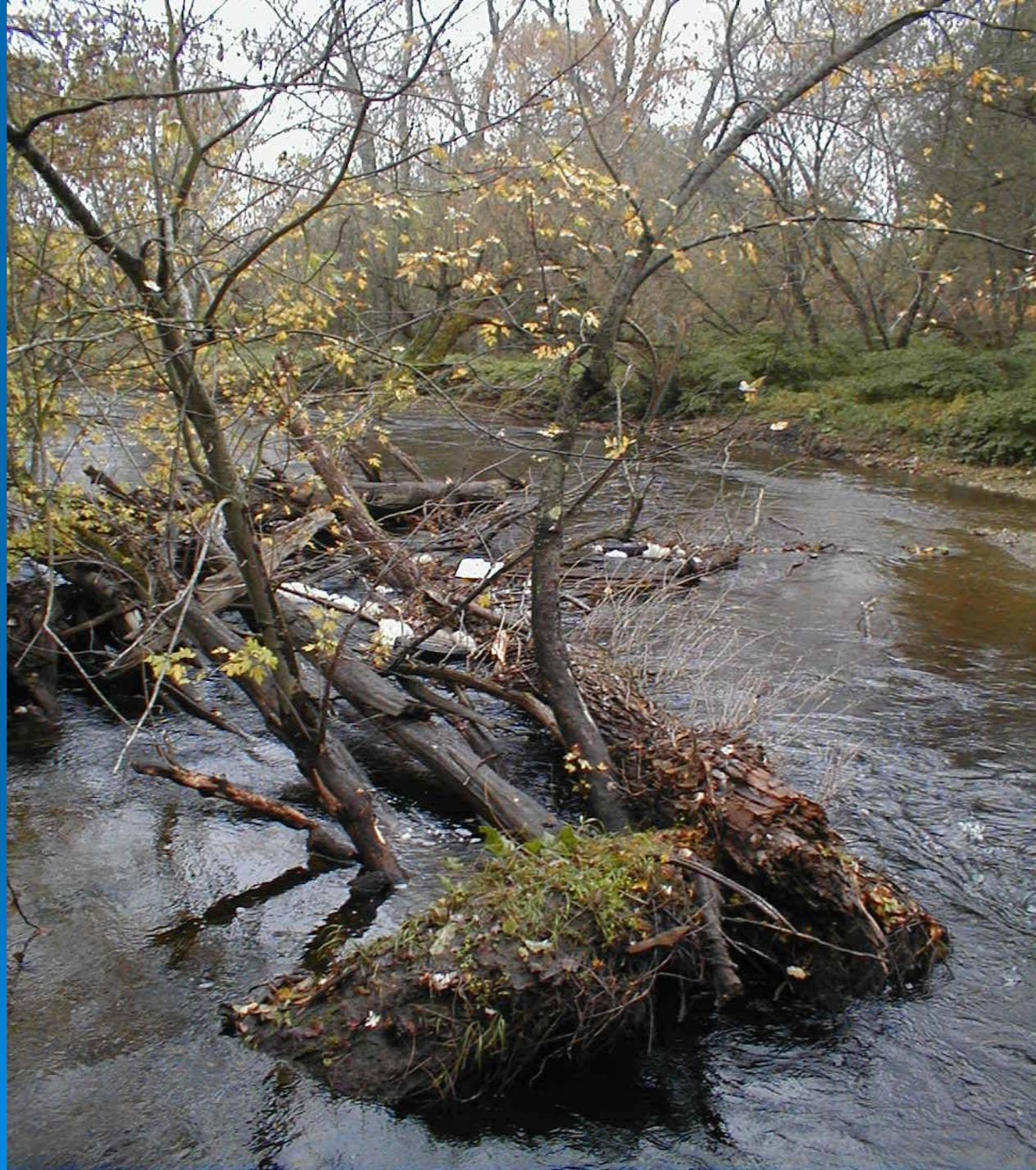
Source: *American Rivers*

I-87 the Northway



Kayaderoseras Creek The “Burl Trail”





Kelly Park in Ballston Spa





An un-named site in Milton



Heading North along Route 4 (04/04/06)





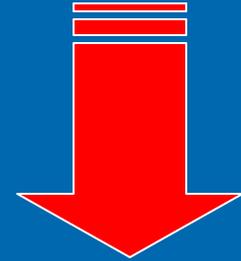
Fish Creek at the Victory Mill Dam



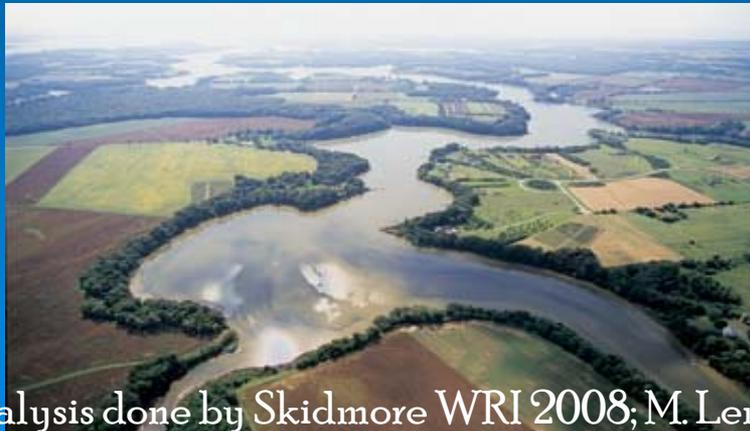
Saratoga Lake 04/04/2006



Major Non-Point Pollutants in the Watershed



1. Sediment - 720,650 lbs/year
...that's 36 full dump trucks!
2. Oil and Grease - 58,748 lbs/year
3. Nitrogen - 33,915 lbs/year
4. Phosphorous - 6,857.09 lbs/year

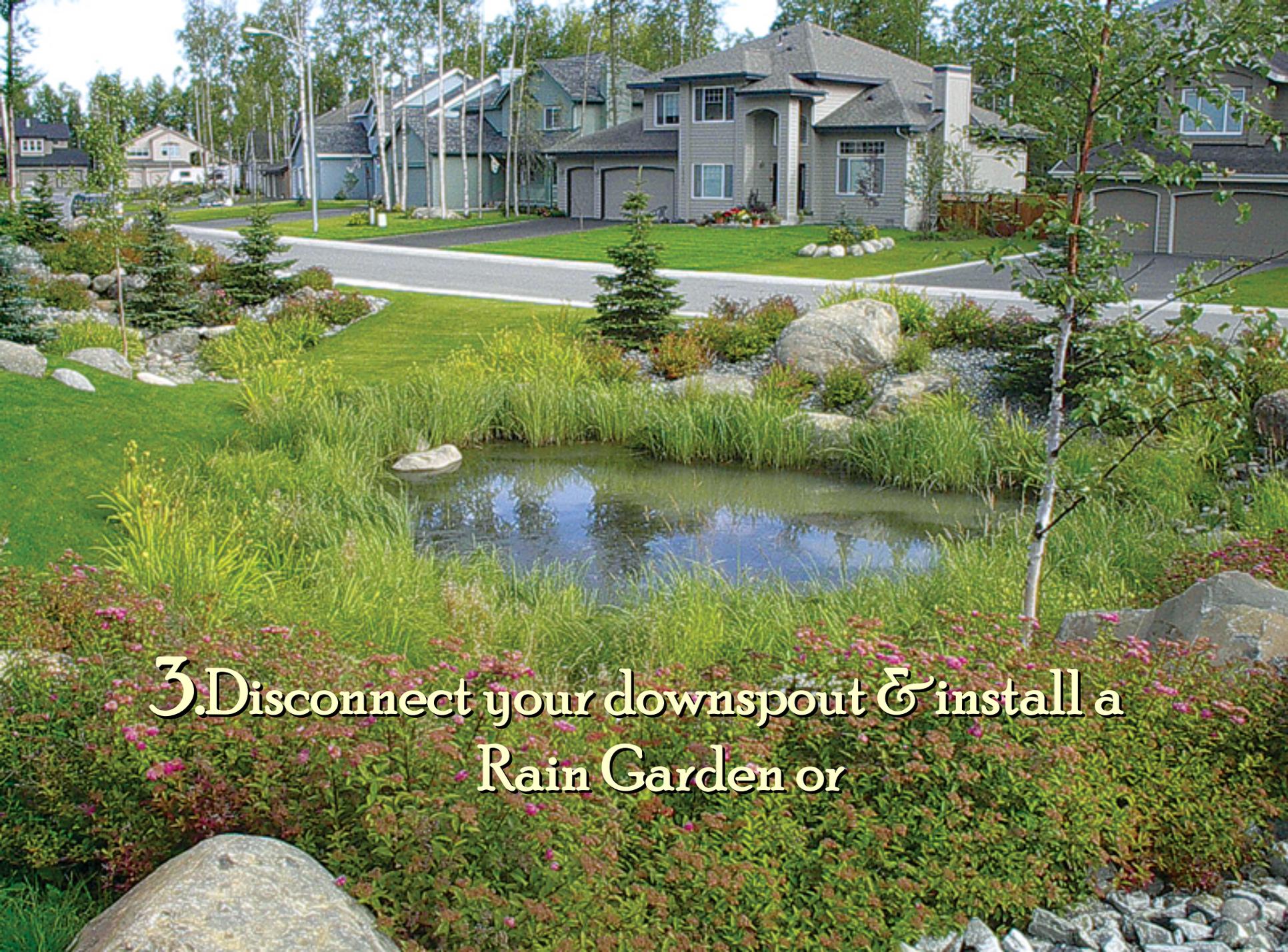


Original Analysis done by Skidmore WRI 2008; M. Lena; A. Polletta; J. Morten



What Can We Do, Everyday, To Protect Our Water Resources?

1. Avoid over-fertilizing your lawn. Test your soil first!
 2. Plant alternatives to turf grass such as native perennials and groundcovers, create vertical structure
 - 3....
- 

A photograph of a residential street with a rain garden in the foreground. The rain garden features a small pond, various plants, and large rocks. In the background, there are several houses with garages and a paved road.

3. Disconnect your downspout & install a Rain Garden or

Rain Barrel



Here's looking at you



Running for the Water Cup



*Klimt
(Sayre School 3^d Grade Class)*

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4. Maintain your Septic System & Properly collect and dispose of Pet Waste
5. Create a Stream or Shoreline buffer
6. Be an erosion and sediment control detective
7. Mow your lawn high & compost yard wastes
8. Wash your car on the lawn with bio-degradable soap

Legend

Parcel Boundaries

Sewer

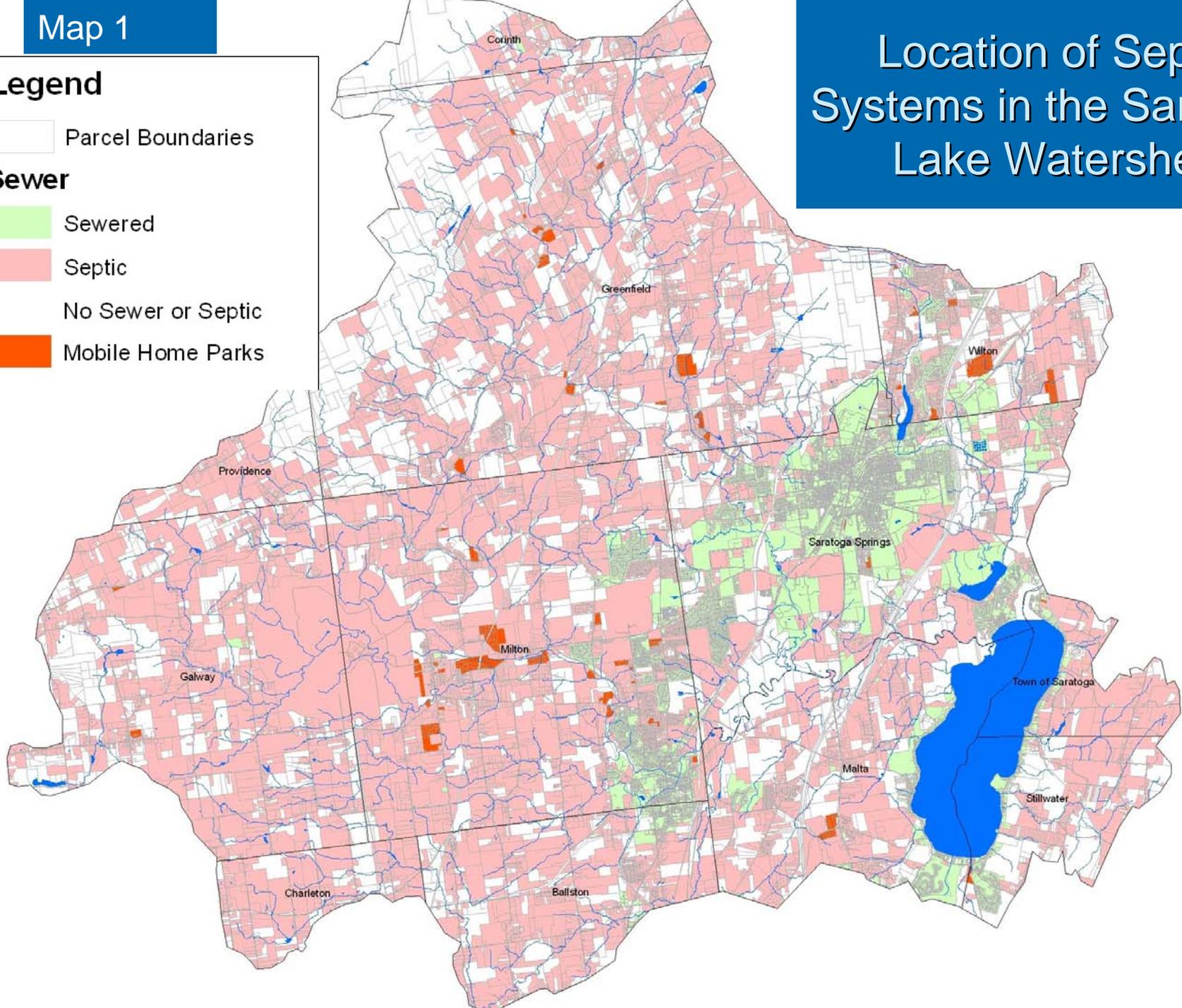
Sewered

Septic

No Sewer or Septic

Mobile Home Parks

Location of Septic Systems in the Saratoga Lake Watershed



The Septic Footprint

10,000 Septic systems in the Saratoga
lake Watershed (GIS parcel analysis)

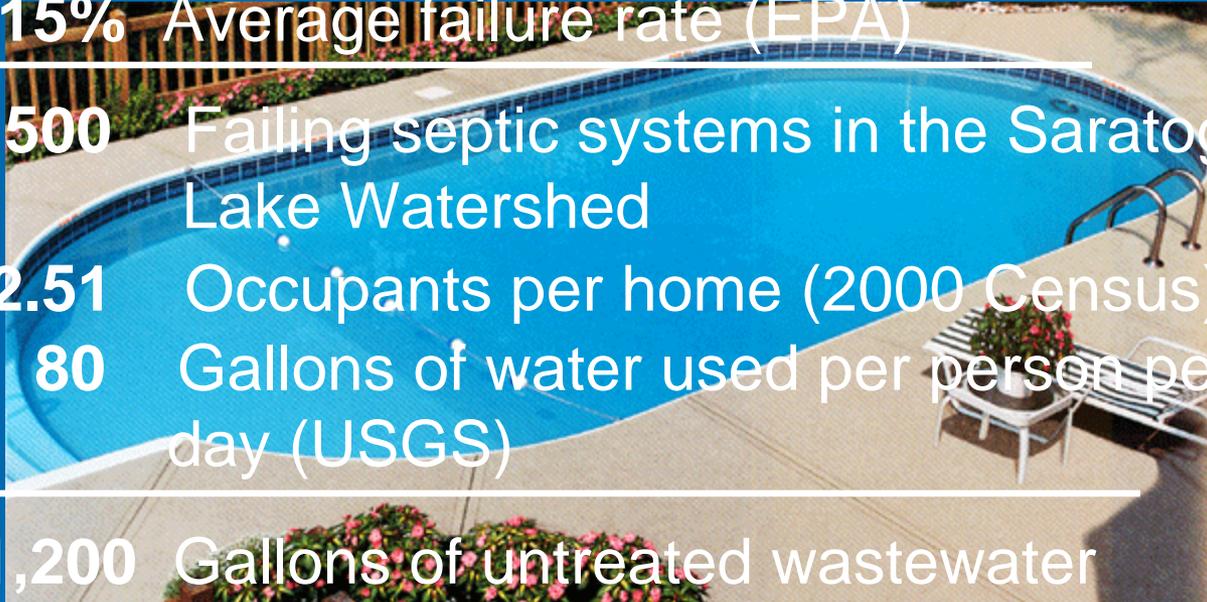
X 15% Average failure rate (EPA)

1500 Failing septic systems in the Saratoga
Lake Watershed

X 2.51 Occupants per home (2000 Census)

X 80 Gallons of water used per person per
day (USGS)

301,200 Gallons of untreated wastewater
entering the watershed daily





36 backyard swimming pools worth
of raw sewage leaked into the
watershed daily

Or
13,140 swimming pools a year

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8. Wash your car on the Lawn w/a
Biodegradable "True" Soap



What Can We Do, Everyday, To Protect Our Water Resources?

9. Get Involved!!

The most important contribution that you can make to your Local Program and to Protect our water is to play an active role...ask you local government what they are doing and find out how you can participate.

10. If you see a problem contact your local government
or...

The Saratoga County Stormwater
Management Coordinator

Blue R. Neils

CCE of Saratoga

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Ballston Spa

885-8995 ext.224

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www.saratogastormwater.org