

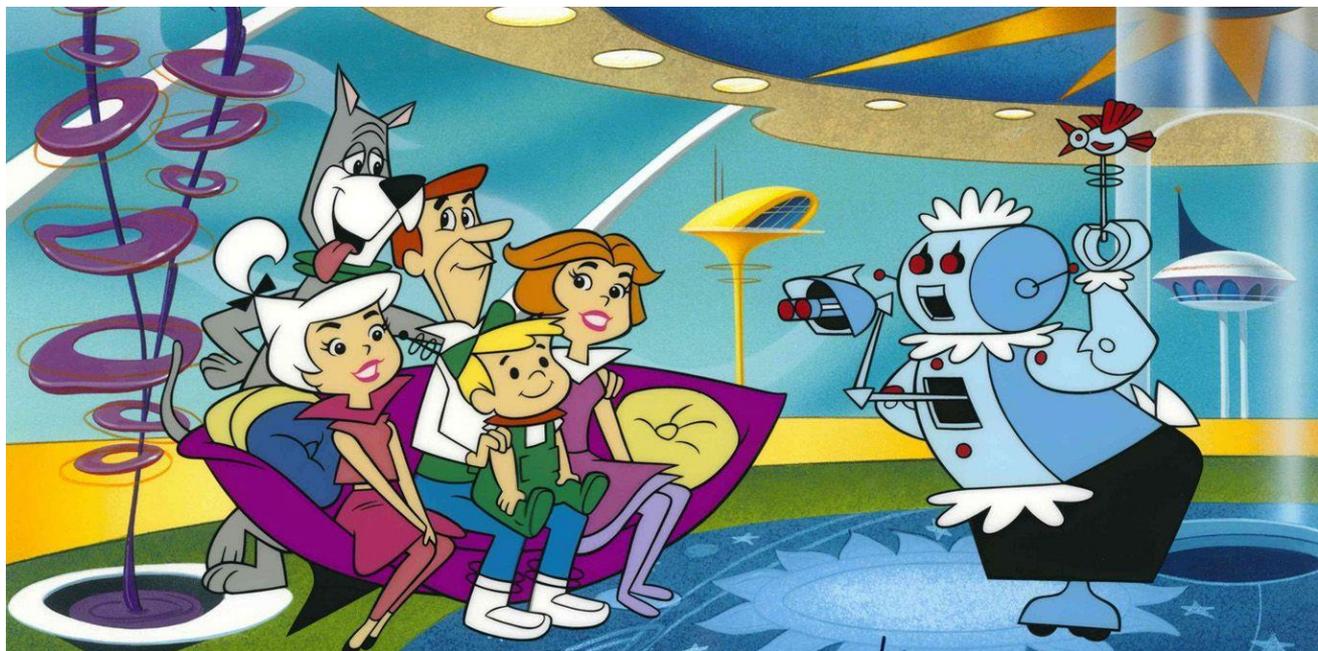
Community Planning and Water Resources: (at least) 7 Things to Consider for the Future

How to help guide your town or village into a
prosperous future

**CHANGE IS
INEVITABLE,
EXCEPT FROM A
VENDING MACHINE.**

Stop and Think...

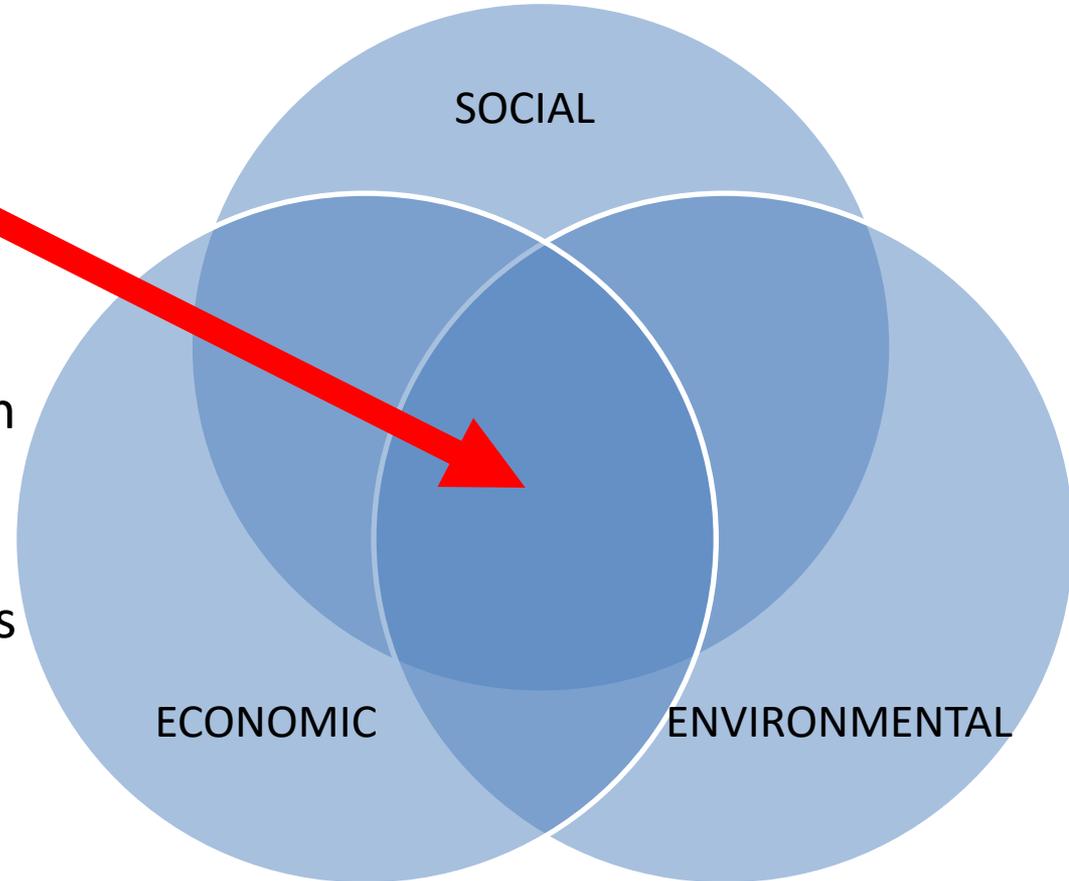
- What does your community look like today?
 - Landscape
 - Activities
 - Amenities
 - Demographic composition
- What will your community look like in 30 years?
- What do you want it to look like?
- Who will live there?
- What are past, present and future challenges and how do you plan for them?



It's all inter-related

YOU ARE HERE!

- Community resilience
- Stormwater
- Agriculture
- Harmful Algal Blooms
- infrastructure
- Drinking water source protection
- Water resource management
- Transportation
- Septics and other nutrient inputs
- Planning
- Tourism
- AND, MORE!



***And, our communities are changing
whether we want them to or not***





Community Fabric





GRUBHUB™

amazon Prime

RETAIL

Mall Vacancy Rate Reaches 20-Year High

By PYMNTS [Twitter](#) [Email](#)

Posted on January 7, 2020





One in three US counties are now dying off due to aging population, weakened local economies: Census

New York ranks tops in new immigrants among large metro areas, but also ranks at the top for young residents moving away.

ADVERTISEMENT

Download PDF - Printable PDF (Free)

Download Here frompdfdoc.com

OPEN



AP

Washington

March 14, 2013 UPDATED: March 14, 2013 12:59 IST



Weakened local economies



Changing Land Use





Culture &
Demographics

Crime & Health
(services)



change is

inevitable

progress is

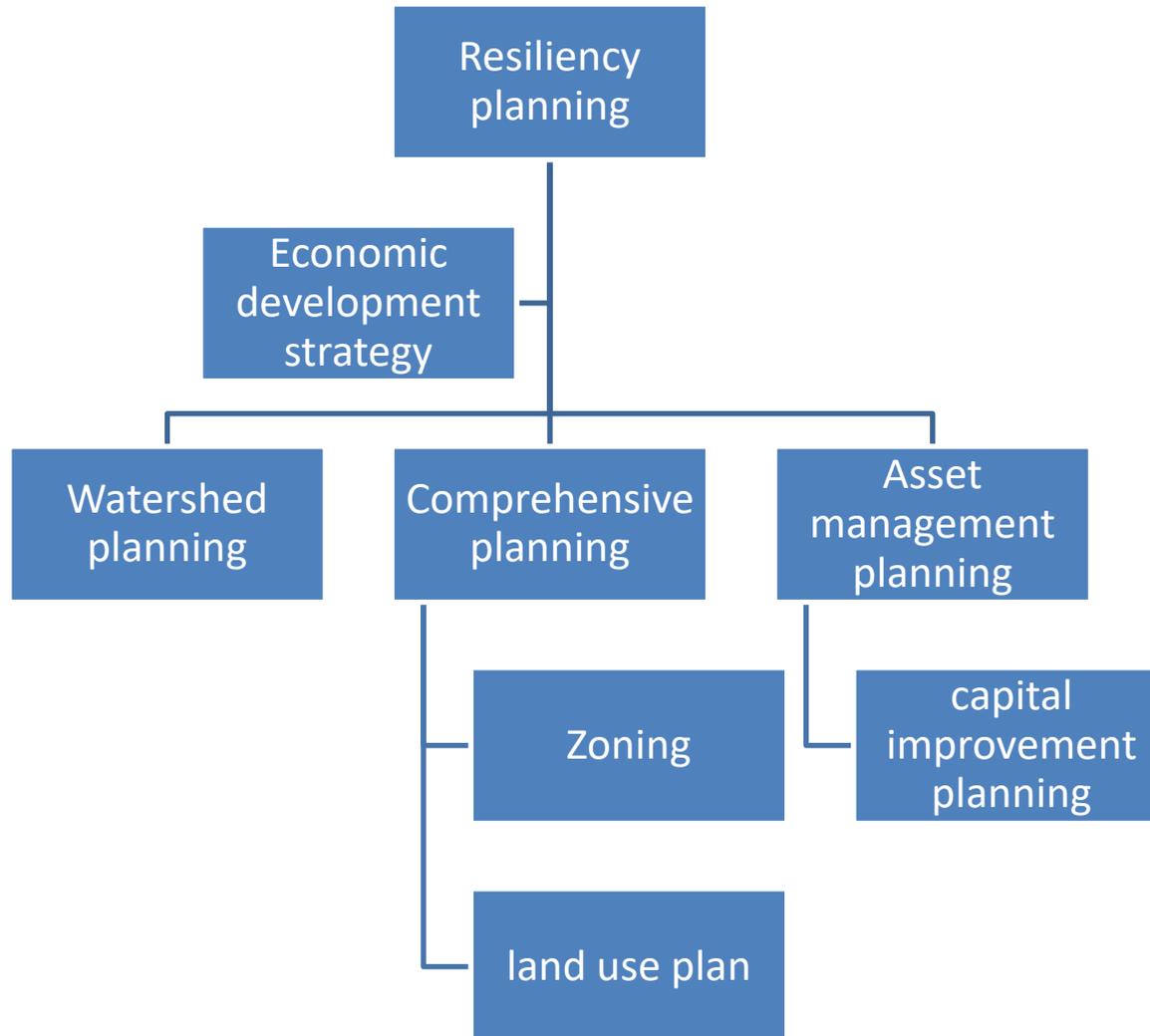
optional

- Tony Robbins

Planning for Resiliency

- ✓ Comprehensive Plans
- ✓ Zoning
- ✓ Asset Management Planning

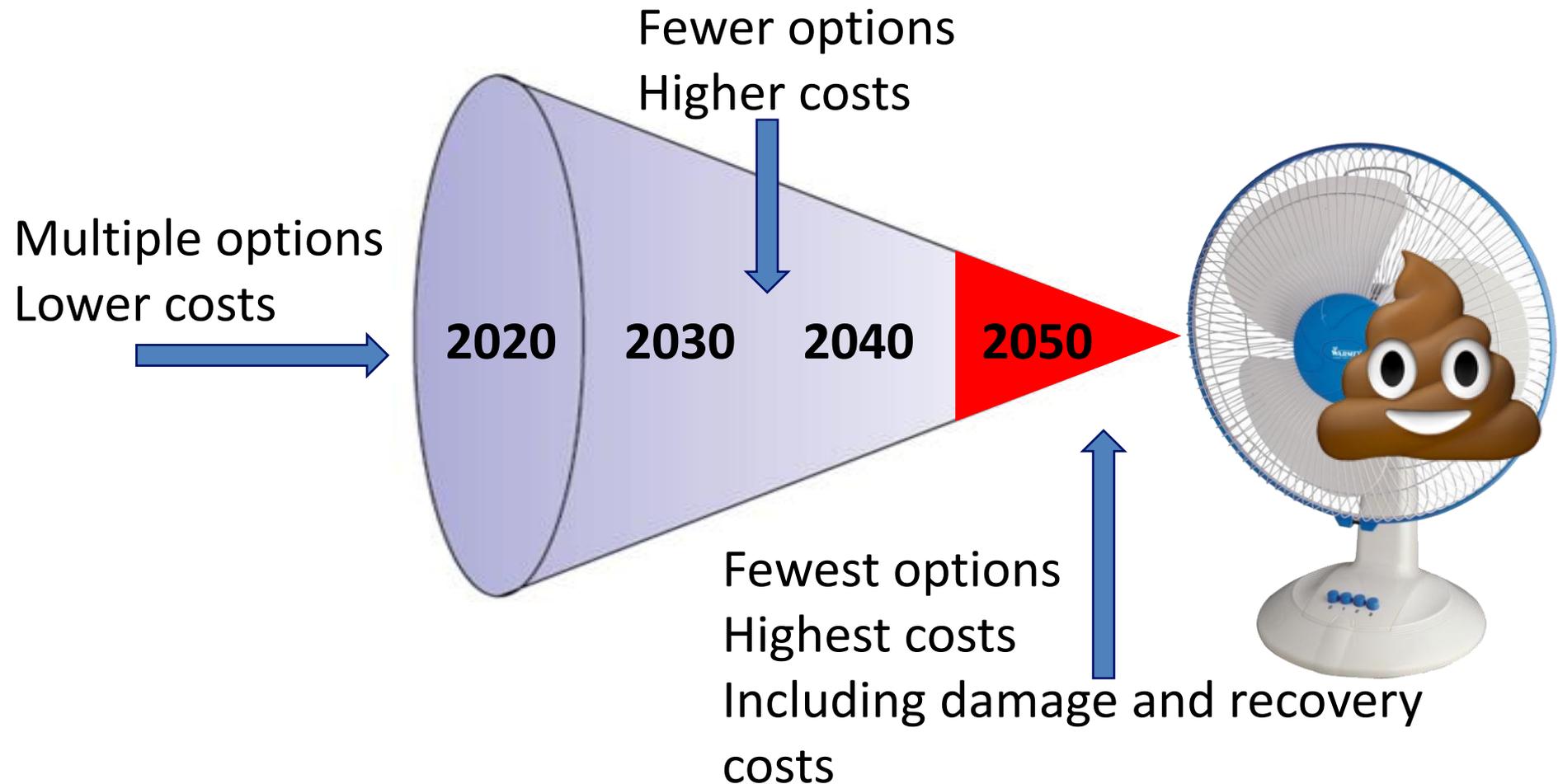
- ✓ Capital Improvement Planning
- ✓ Land-Use Planning
- ✓ Watershed Planning





*Communities that plan — change by
choice, not by chance.*

The Hard Sell



POP

QUIZ

A comprehensive plan is:

- a. Meant to serve as the foundation for zoning regulations
- b. A document or culmination of materials that provide an outline for orderly growth
- c. A land use plan
- d. All of the above

All of the above: All of these things are part of a Comprehensive Plan!

Comprehensive Plan

1. Expression of goals and recommended action to achieve those goals
2. Providing continued guidance for decision-making
3. Focuses on immediate and long-range protection, enhancement, growth and development

Importance

- ✓ Zoning must be in accordance with comprehensive plan
- ✓ Defense against spot zoning challenges
- ✓ Can also provide the basis for other actions affecting development
- ✓ Grant applications
- ✓ Capital Improvements

Peek Inside a Comprehensive Plan

- **Introduction**
- **Public Participation**
- **Plan Structure**
- **Chapter 1 – Goals and Recommendations**
 - Community Vision Statement
 - Agriculture and Open Space
 - Land Use Regulation
 - Environmental Stewardship and Water Quality Protection
 - Public Utilities and Community Services
 - Economic Development and Cultural Heritage
 - Recreation and Tourism
- **Chapter 2 – Adopting and Implementing the Plan**
 - Adopting the Comprehensive Plan
 - Review and Maintenance of the Comprehensive Plan
 - Implementing the Comprehensive Plan

"Failing to plan is planning to fail."

Waiting until a controversial land use proposal is at the door before deciding a comprehensive plan is necessary or needs updating is not a recommended approach. Many controversial decisions and issues are best handled through the development and maintenance of a comprehensive plan.

A note on Tourism

New York State's tourism economy in 2018 with 6.2% growth in traveler spending, reaching a new high of \$71.8 billion.

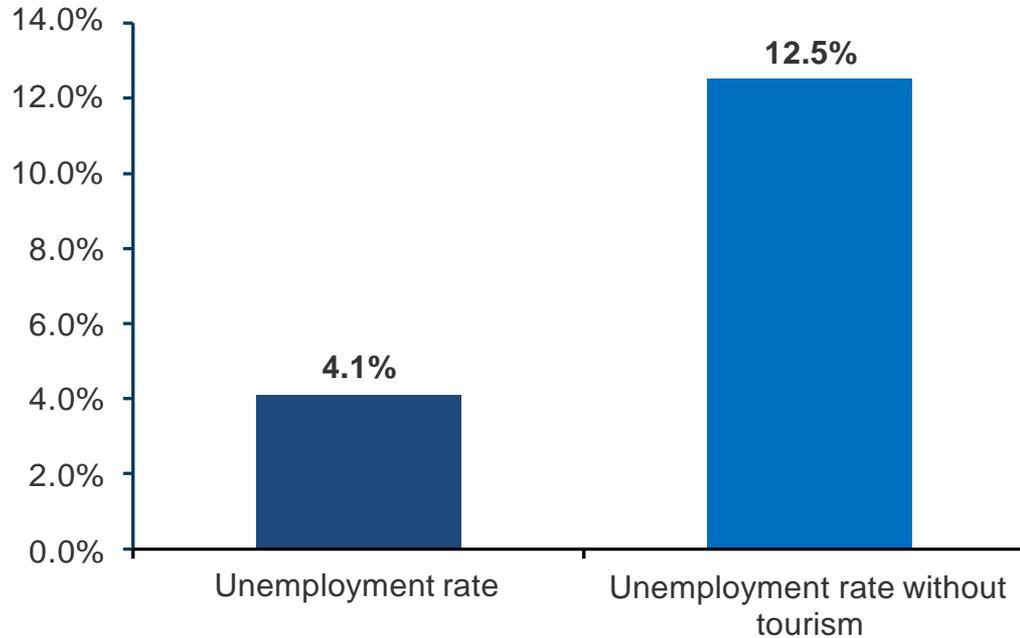
- Travel & tourism is a substantial and growing component of the New York State economy.
- Direct spending of \$71.8 billion generated nearly \$115 billion in total business sales including indirect and induced impacts.



Tourism is vital to the NYS labor market

Unemployment Rate in New York State

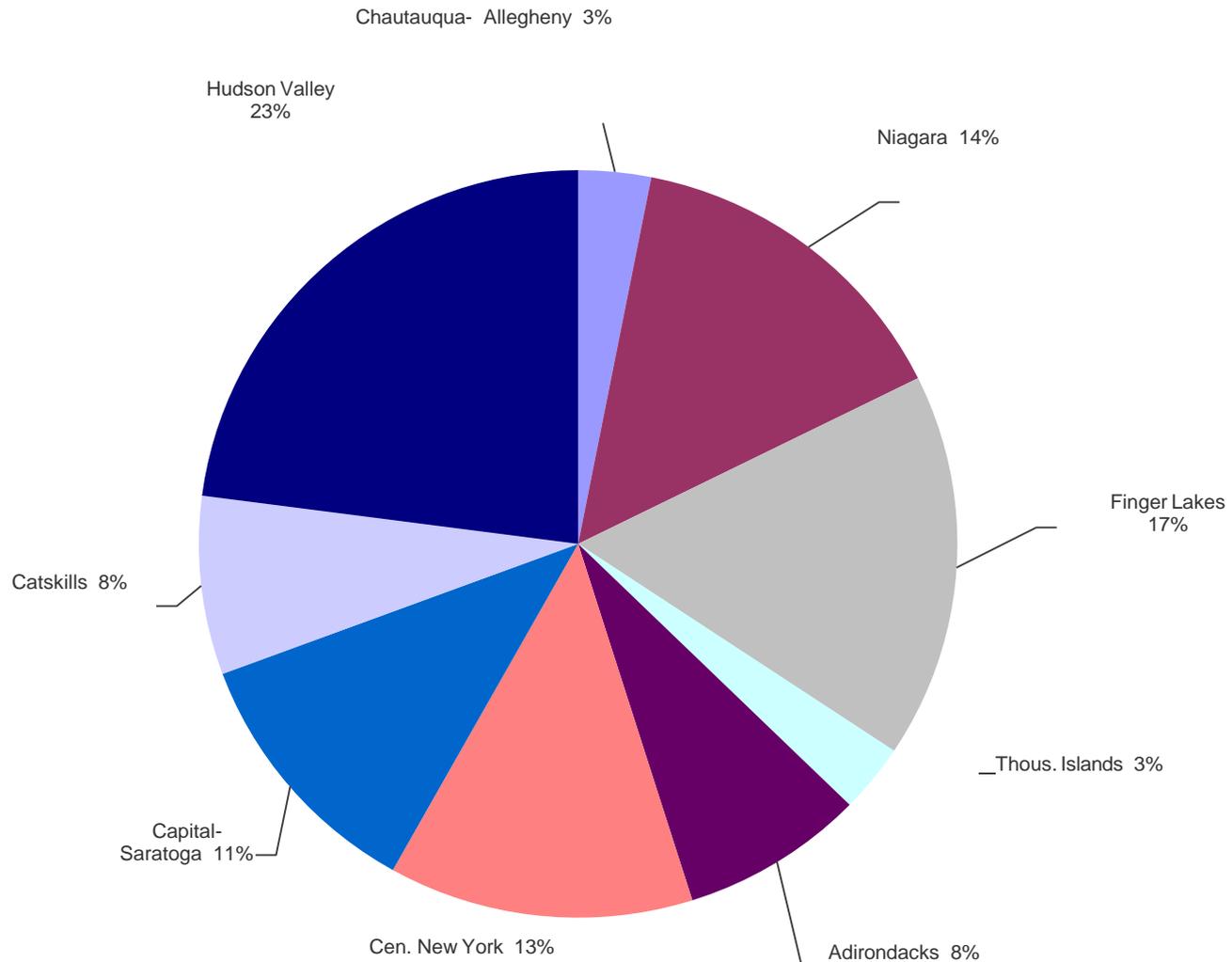
2018



Source: BLS, Tourism Economics

The unemployment rate in New York State was 4.1% in 2018. If the jobs sustained by travelers were eliminated, the unemployment rate would rise to 12.5%.

Upstate traveler spending by region—2018



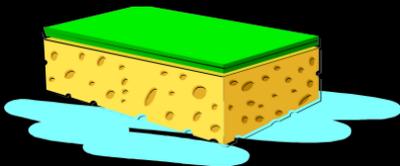
Regional tourism summary (2018)

Tourism Economic Impact Combined Direct, Indirect, and Induced

Tourism Economic Impact	Direct Sales, '000s	Labor Income, '000s	Employment, Persons	Local Taxes, '000s	State Taxes, '000s
1. Chautauqua-Allegheny	\$ 588,668	\$ 264,505	11,383	\$ 39,923	\$ 32,106
2. Greater Niagara	\$ 2,777,872	\$ 1,516,478	53,009	\$ 184,503	\$ 151,506
3. Finger Lakes	\$ 3,168,690	\$ 1,571,380	58,853	\$ 225,684	\$ 172,821
4. Thousand Islands	\$ 564,236	\$ 246,478	9,074	\$ 36,295	\$ 30,774
5. Adirondacks	\$ 1,490,681	\$ 705,605	21,089	\$ 101,585	\$ 81,302
6. Central New York	\$ 2,473,007	\$ 1,400,603	37,015	\$ 153,292	\$ 134,879
7. Capital-Saratoga	\$ 2,136,117	\$ 1,181,885	38,406	\$ 142,855	\$ 116,505
8. Catskills	\$ 1,468,595	\$ 674,800	19,526	\$ 96,621	\$ 80,098
9. Hudson Valley	\$ 4,365,871	\$ 2,256,370	62,262	\$ 307,421	\$ 238,116
10. Long Island	\$ 6,135,235	\$ 3,281,344	81,735	\$ 405,707	\$ 334,618
11. New York City	\$ 46,649,839	\$ 25,128,860	414,693	\$ 3,306,343	\$ 2,544,298
TOTAL	\$ 71,818,812	\$ 38,228,308	807,047	\$ 5,000,229	\$ 3,917,022



WATERSHEDS—THE FUNNEL, THE SPONGE, AND THE SLIDE



Who's 'in-charge' of watershed management?

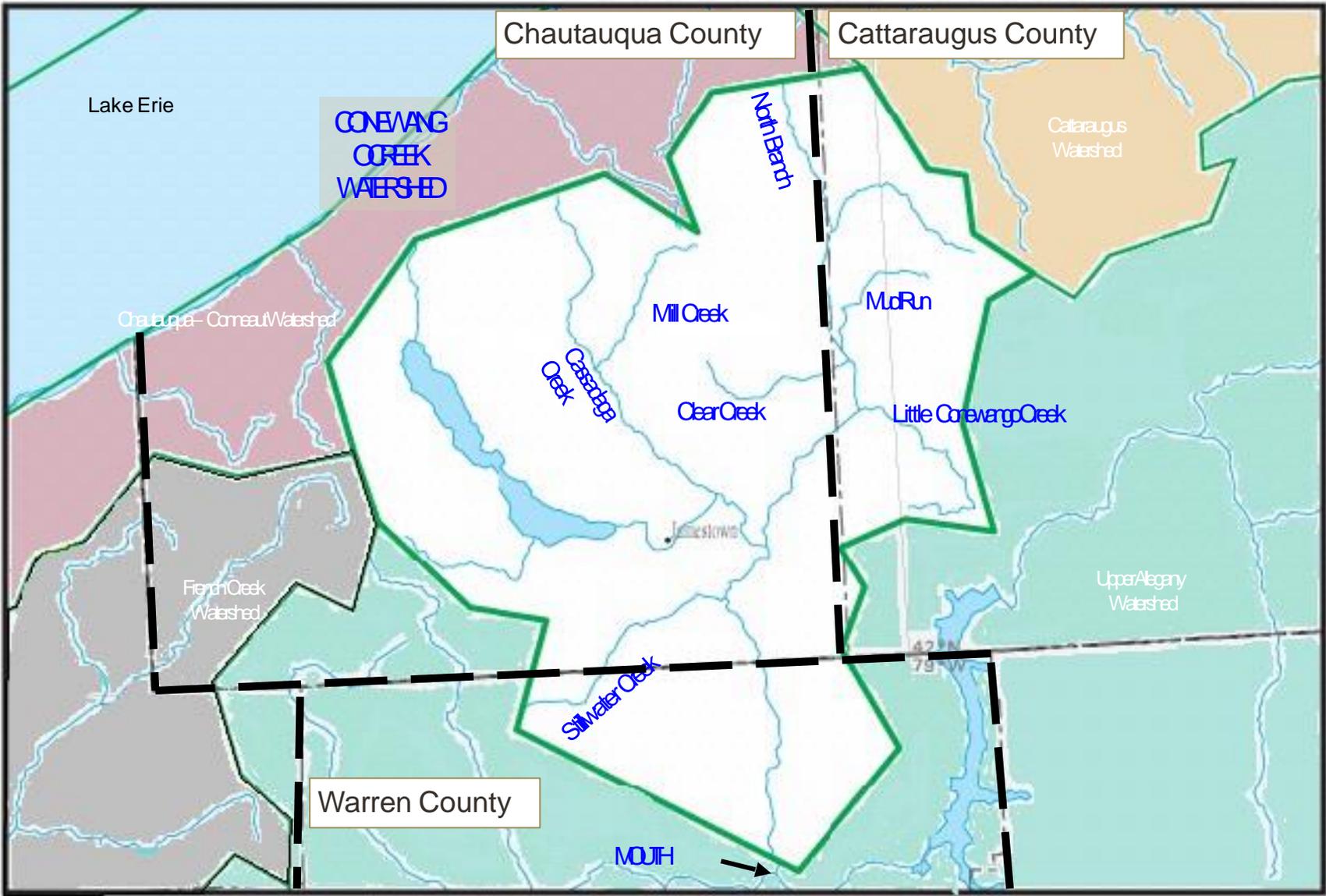


Photo: Rick Constantino

Who's 'in-charge' of watershed management?

- No One
- Mayors / Supervisors
- Business Owners
- Conservation Groups
- Planning / Zoning
- Highway Departments
- NYS DEC
- Private Landowners
- All Of The Above





Chautauqua County

Cattaraugus County

Lake Erie

**CONEWANG
CREEK
WATERSHED**

Cattaraugus
Watershed

Chautauqua-Cornell Watershed

North Branch

Mill Creek

McRun

Cassady
Creek

Clear Creek

Little Conewang Creek

Fitch Creek
Watershed

Upper Allegany
Watershed

Jamestown

Silverwater Creek

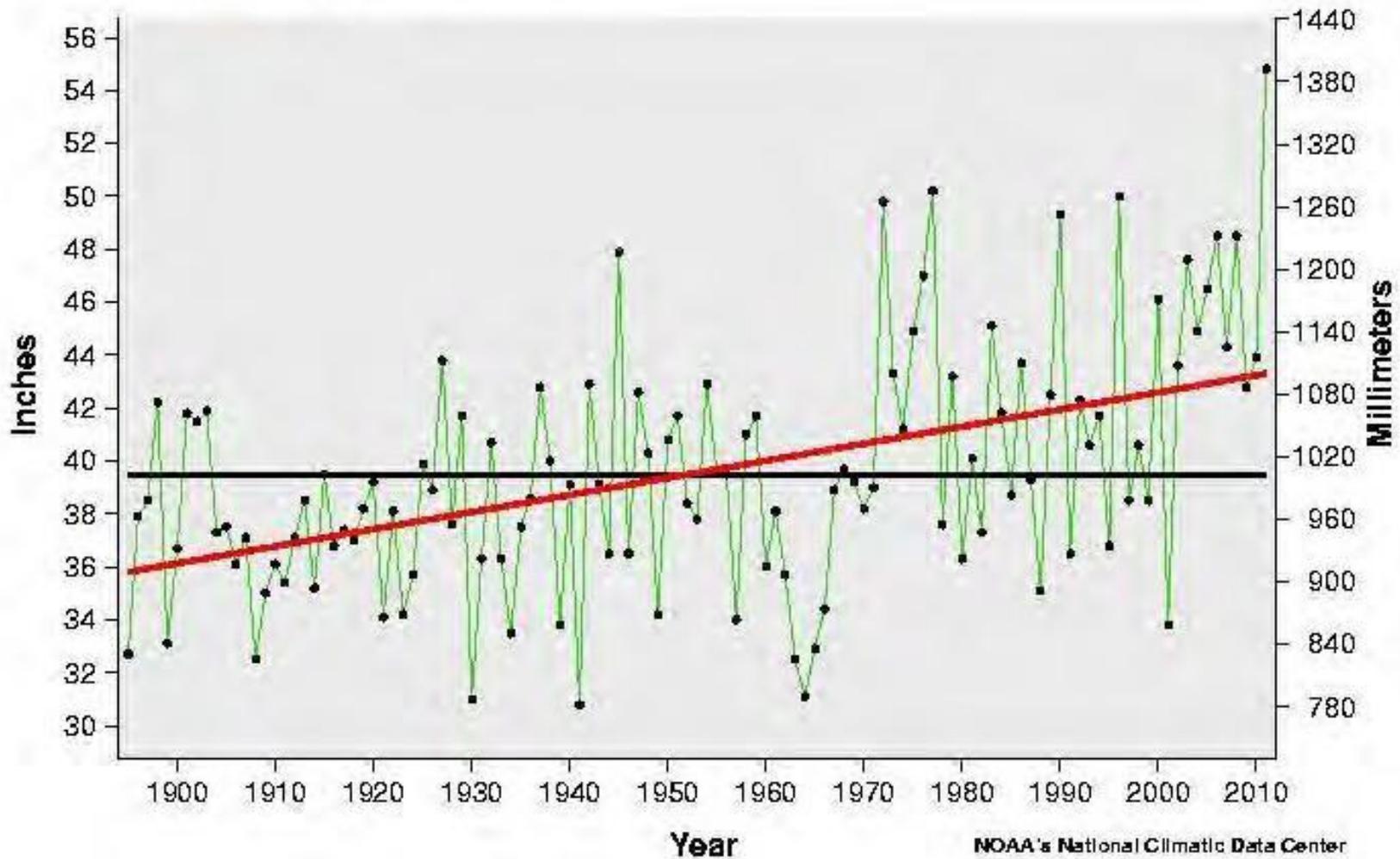
42 N
73

Warren County

MOJH

Annual 1895 - 2011 Average = 39.54 Inches
Annual 1895 - 2011 Trend = 0.65 Inches / Decade

- Actual Precipitation**
- Average Precipitation**
- Trend**



Getting Real About Rainfall Rates

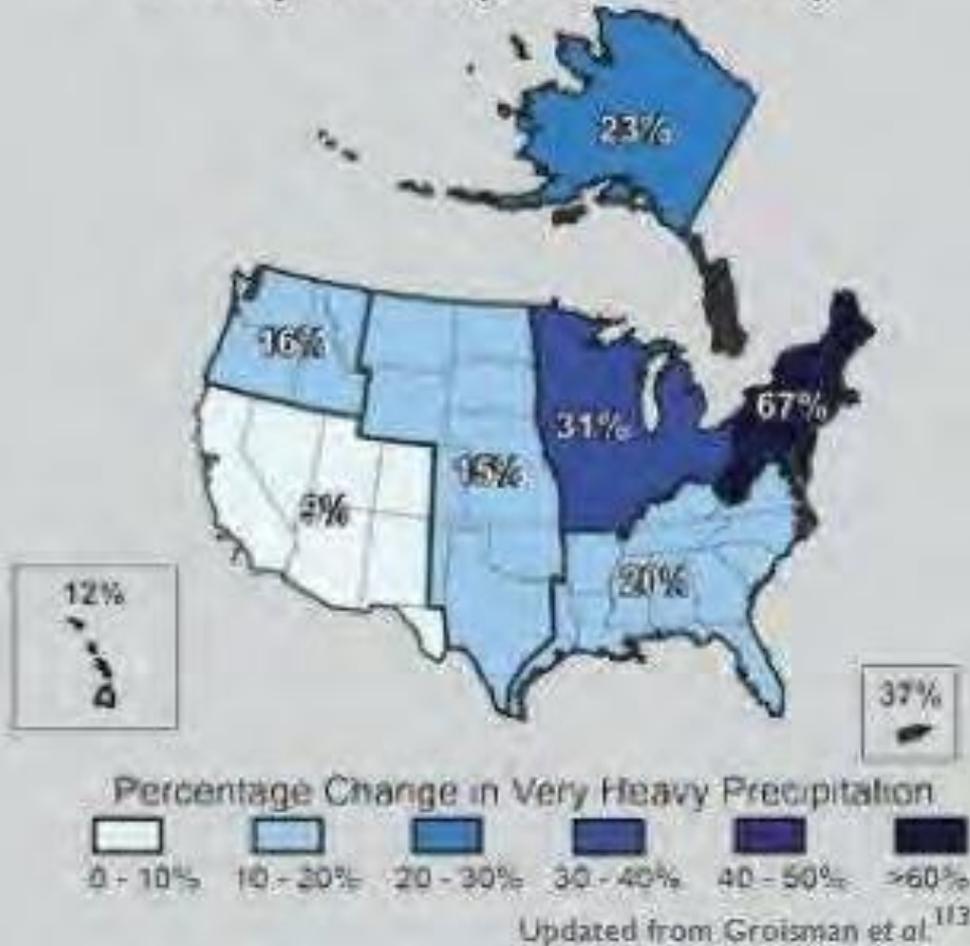
“We have seen a 67% increase in the number of 2-inch rainfall events occurring over a 48-hour period since the 1950s.”

Climate Change Facts, Dept. of Earth & Atmospheric Sciences, Cornell University

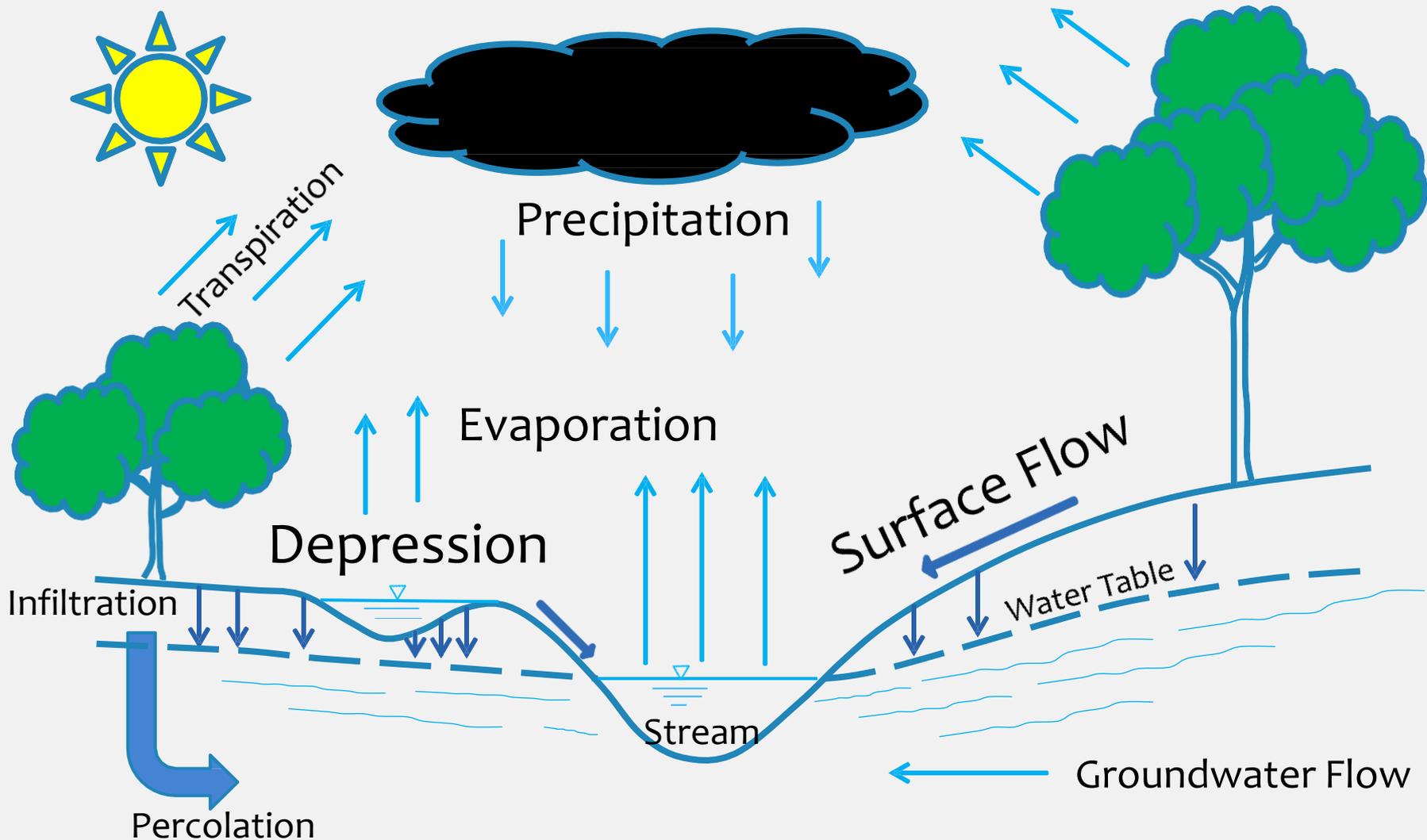
Storms are *more frequent* and *more extreme* than they used to be. Have you noticed?

Increase in Rainfall Rates, Nationwide

Increases in Amounts of Very Heavy Precipitation (1958 to 2007)

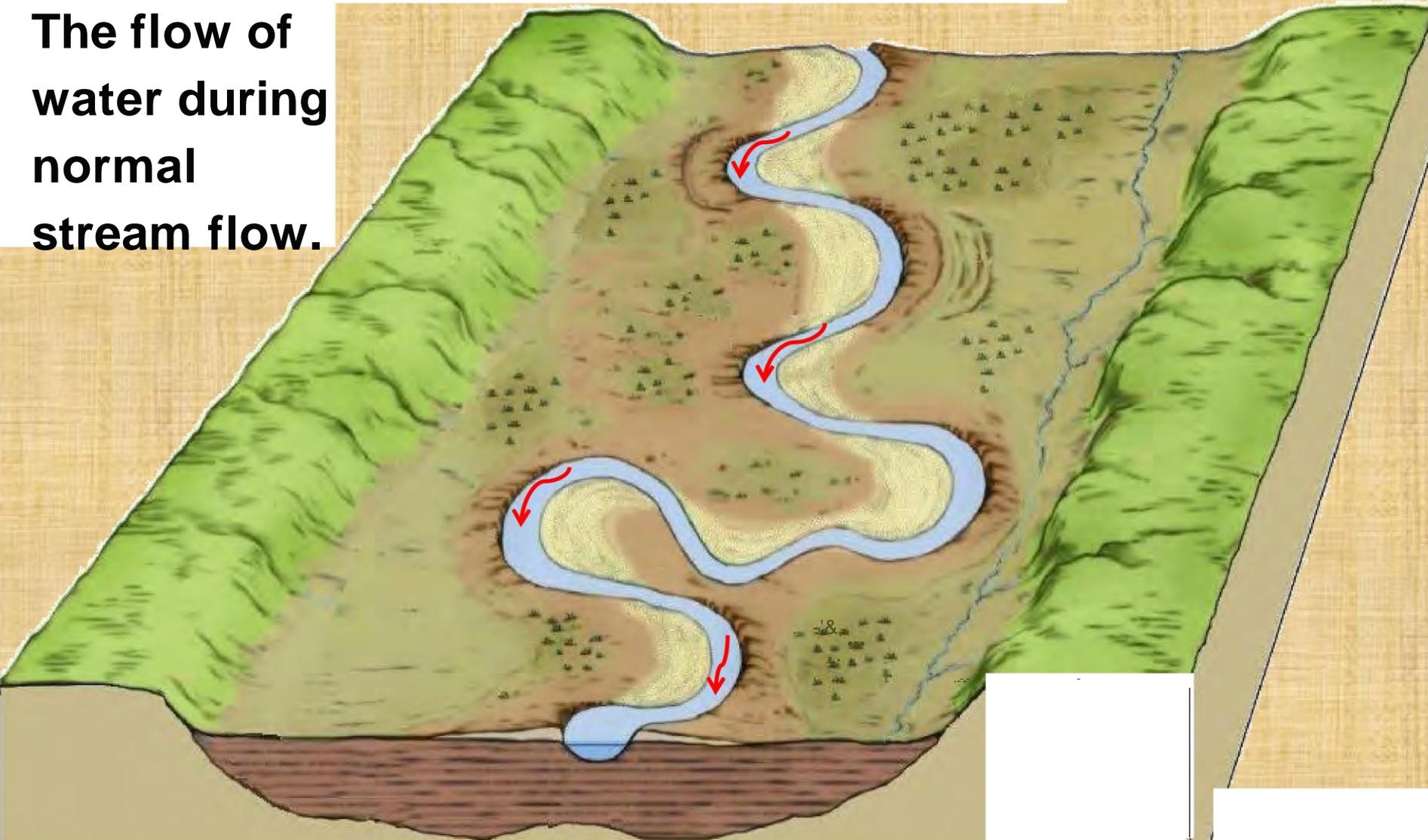


The map shows the percent increase in very heavy precipitation events (defined as the heaviest 1 percent of all daily events).

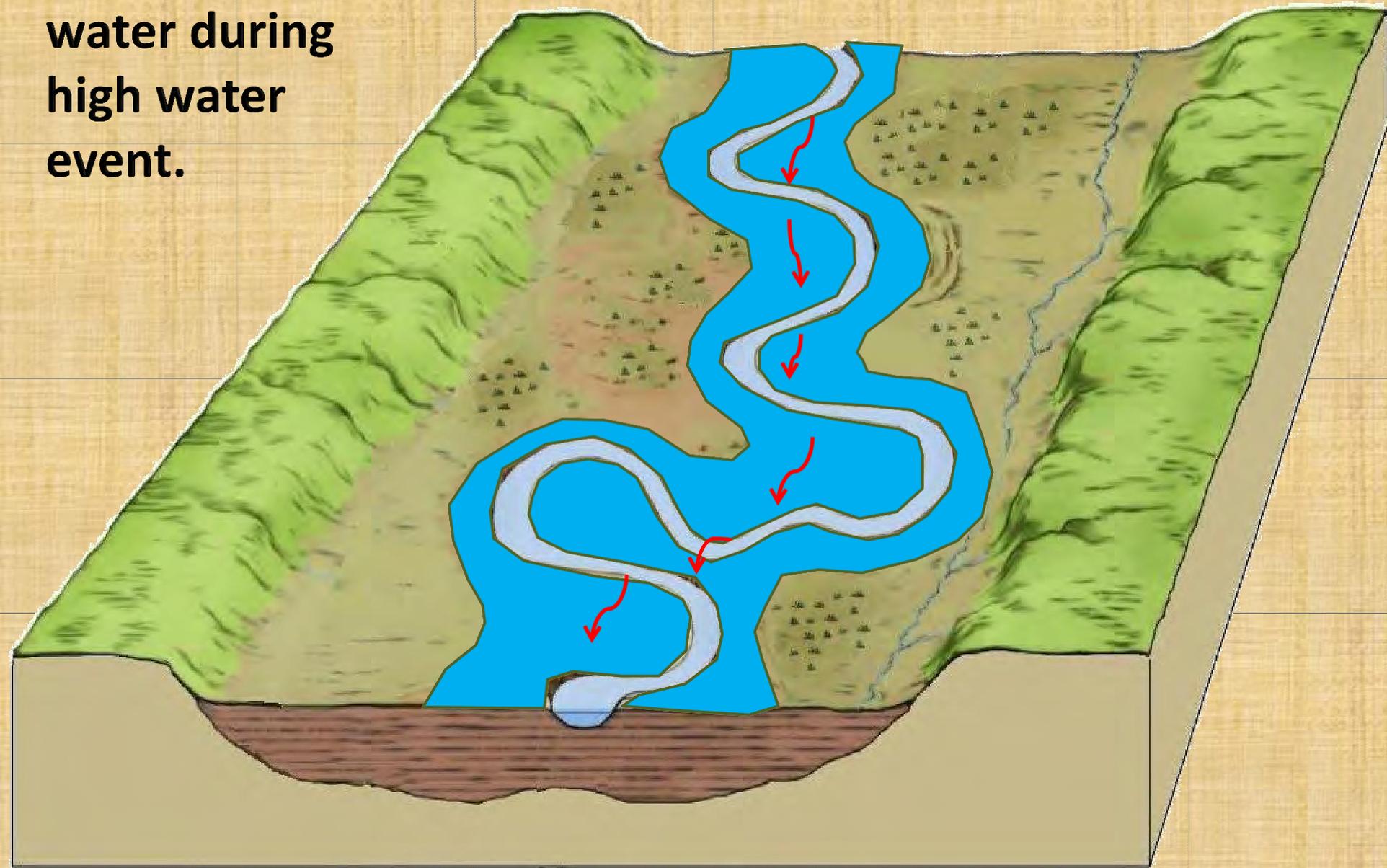


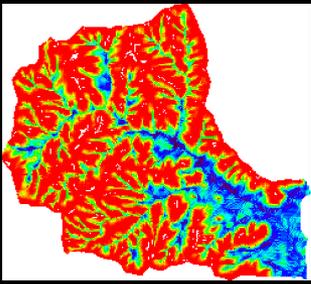
Water Cycle

The flow of water during normal stream flow.



**The flow of
water during
high water
event.**



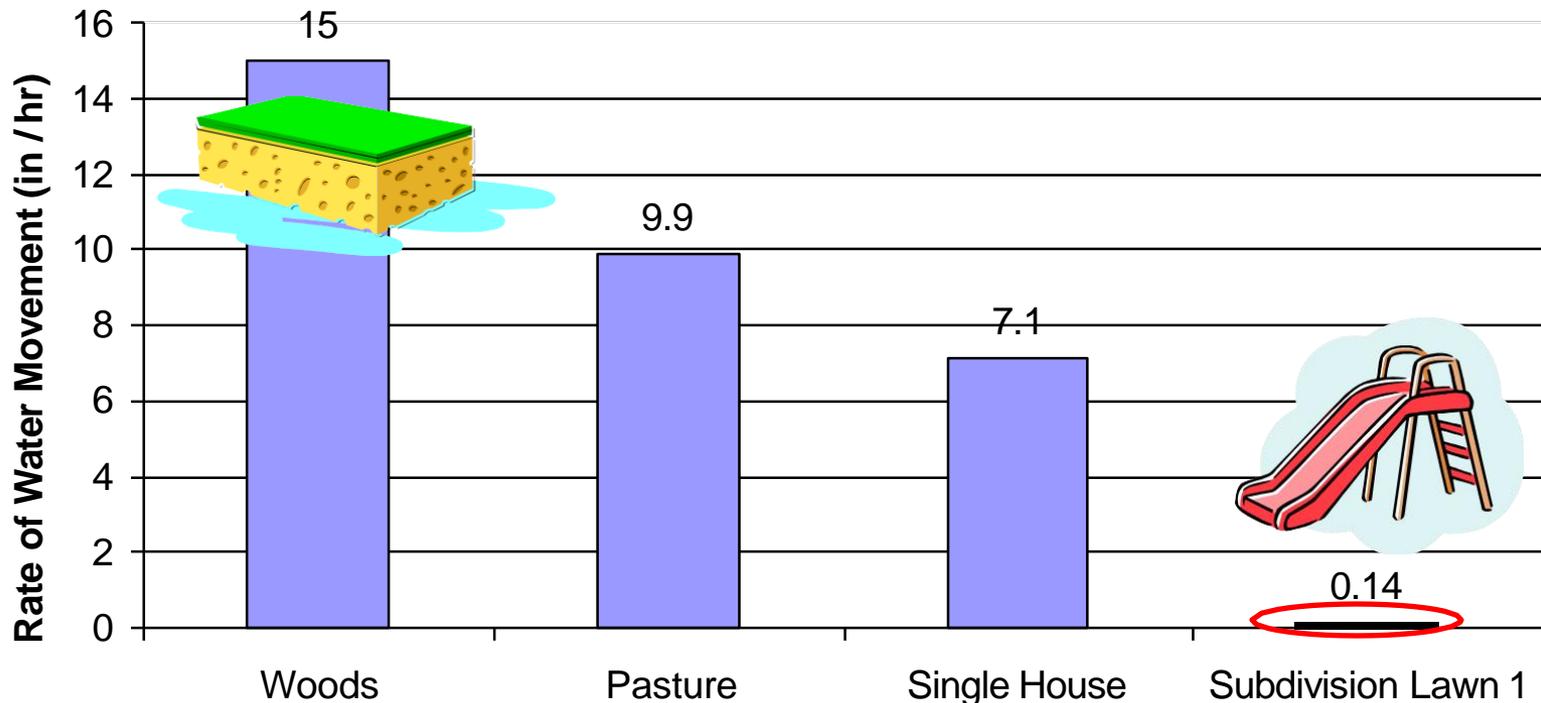


Compaction Effects

Water Movement Into Soils in Various Settings

Ocean County, NJ

Avg. Annual Precipitation = ~ 50 inches



Cumulative Effects

SCENARIO A:

Development Proposal:

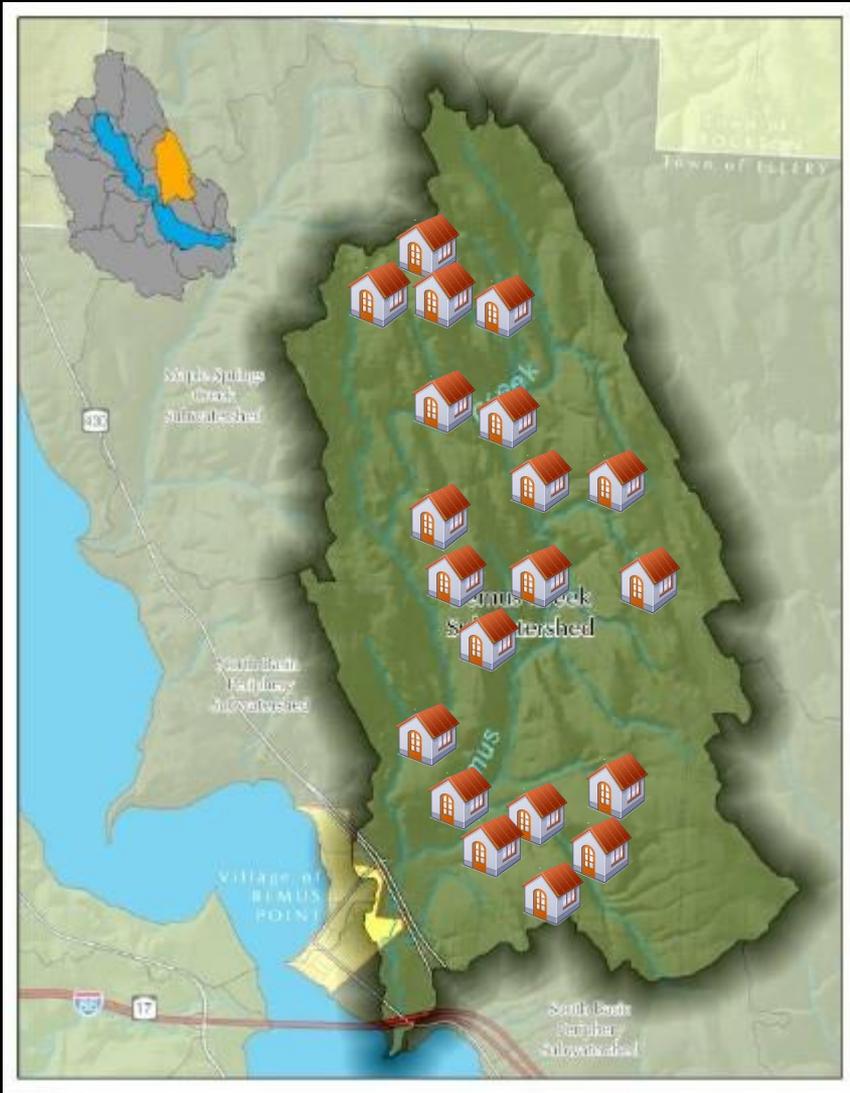
- 20 New Homes - 20 acres
- All within the same watershed
- Constructed in 2015

Triggers:

- SEQR
- NYS DEC SWPPP

Municipal Discussions?

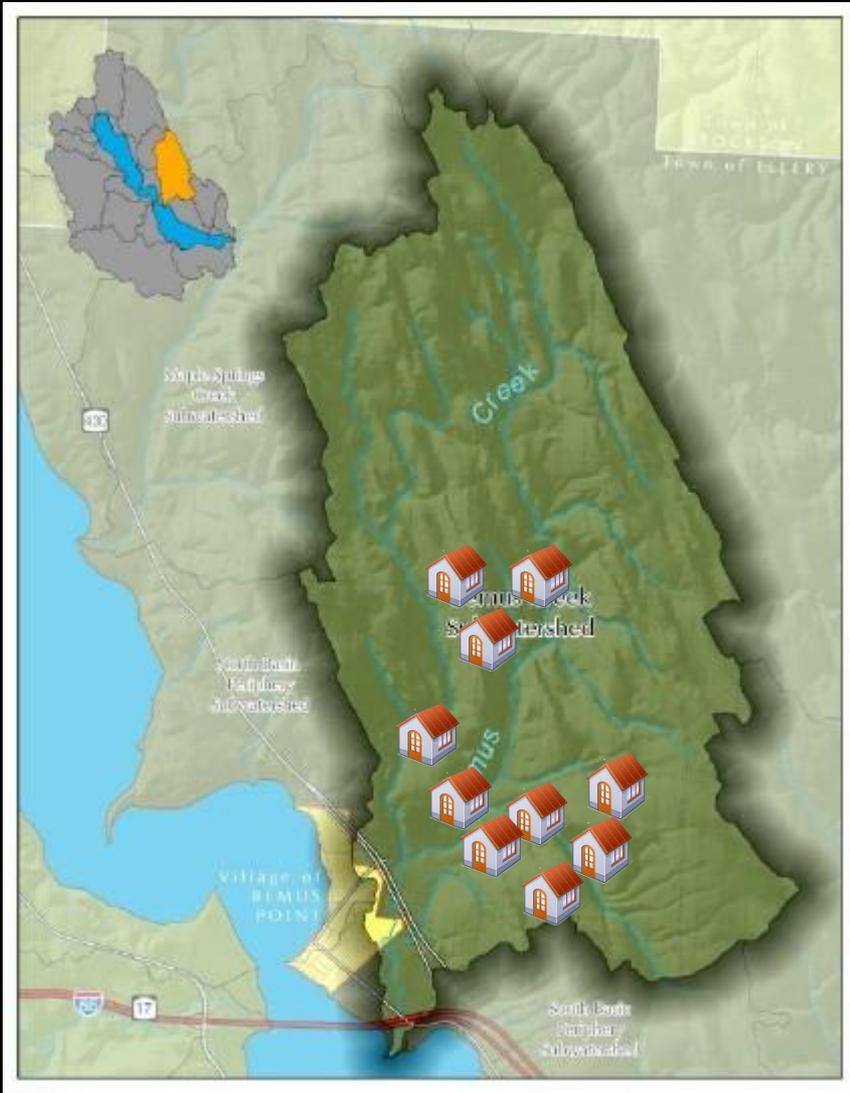
- Wastewater Management
- Emergency Services, etc.



Cumulative Effects

SCENARIO B-1 (2015):

- 10 Existing Homes – 10 acres



Cumulative Effects

SCENARIO B-2 (2017):

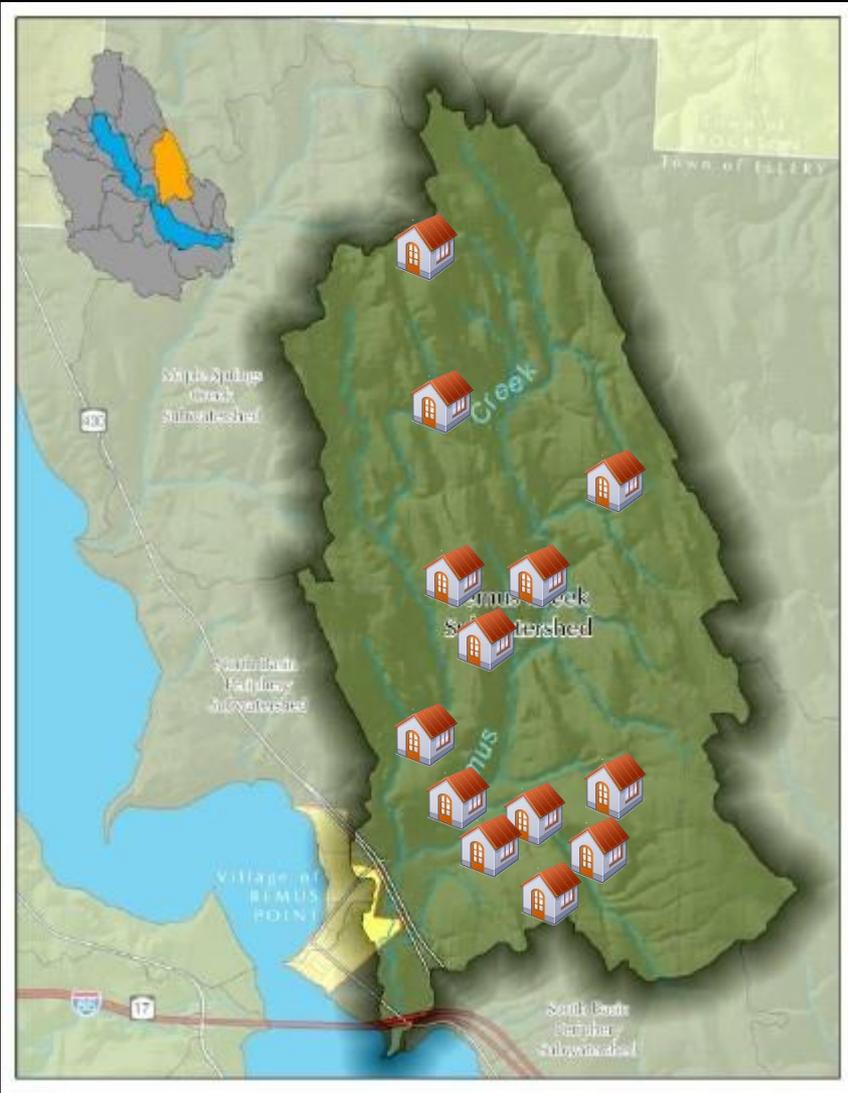
- 10 Existing Homes – 10 acres

No Proposal:

- 3 Additional Homes - 3 acres
- All within the same watershed

Triggers:

Municipal Discussions?



Cumulative Effects

SCENARIO B-3 (2020):

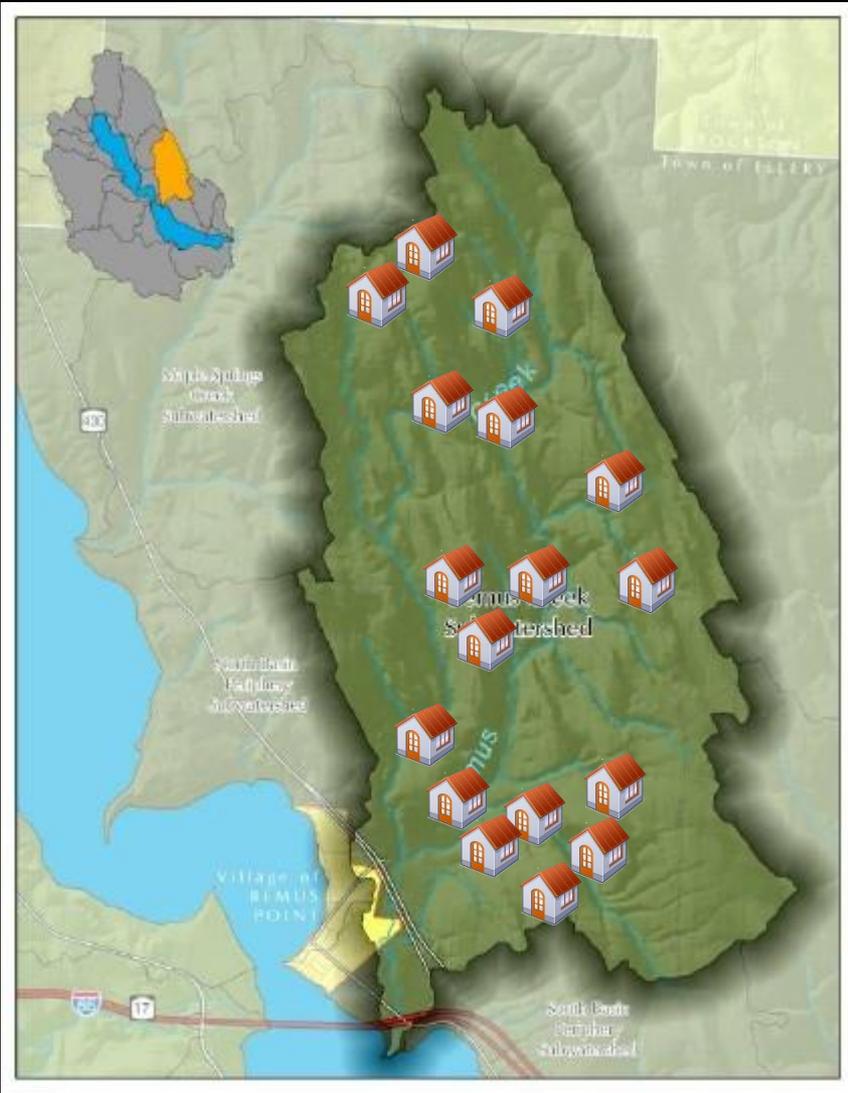
- 10 Existing Homes – 10 acres

No Proposal:

- 4 Additional Homes - 4 acres
- All within the same watershed

Triggers:

Municipal Discussions?



Cumulative Effects

SCENARIO B-4 (2023):

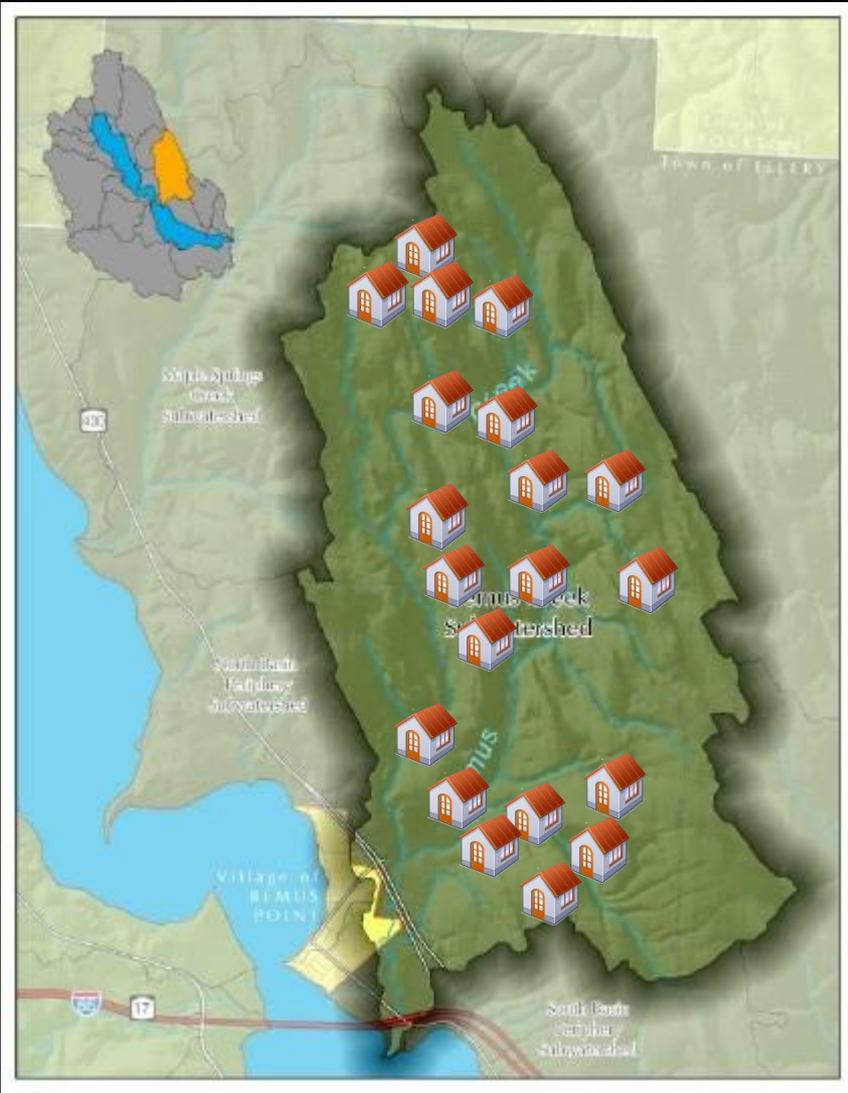
- 10 Existing Homes – 10 acres

No Proposal:

- 3 Additional Homes - 3 acres
- All within the same watershed

Triggers:

Municipal Discussions?



LAND USE



Municipal Costs



Municipal Costs



Rebuilt 5 times
In 3 years: \$15,000



Stabilized in 2005:
\$3,500

Municipal ~~Costs~~ Benefits



Rebuilt 5 times
In 3 years: \$15,000



Stabilized in 2005:
\$3,500

Until present:
\$0



Syracuse, 2011: 2 inches, 30 minutes, \$50 million in damages

The Eight Tools of Watershed “Investment”



8. Watershed Stewardship



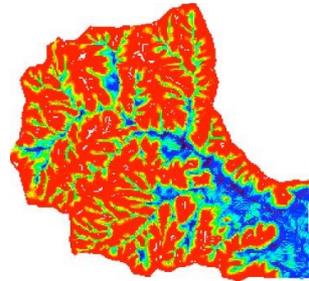
1. Watershed Planning



2. Land Conservation



7. Non-Stormwater Discharges



3. Aquatic Buffers



6. Stormwater Management



5. Erosion & Sediment Control



4. Better Site Design



Who's 'in-charge' -- of watershed management?

- Mayors / Supervisors
- Business Owners
- Conservation Groups
- Planning / Zoning
- Highway Departments

- **NYS DEC**
- **Private Landowners**
- **All Of The Above**



Proactive Planning
Be Prepared to React









Incentivizing the Private Sector

BINGHAMTON, NY

Location: Broome County, NY
Area: 11.14 square miles
Founded: 1867
Population: 46,551



SHARING THE COST

50/50 ... of green stormwater projects
with residents and businesses

**STORMWATER
MANAGEMENT FUND**

NFWF sponsored program where the City splits the cost of GI projects with developers and landowners up to \$25,000 for going above and beyond the required level stormwater management



**GREEN STORMWATER
AND LANDSCAPING
MATCHING FUND**



Local foundation sponsored program where the City provides matching funds for residents, nonprofits, and small businesses who want to install small-scale GI practices such as rain gardens, rain barrels, shade trees, and pervious paving

Incentivizing the Private Sector

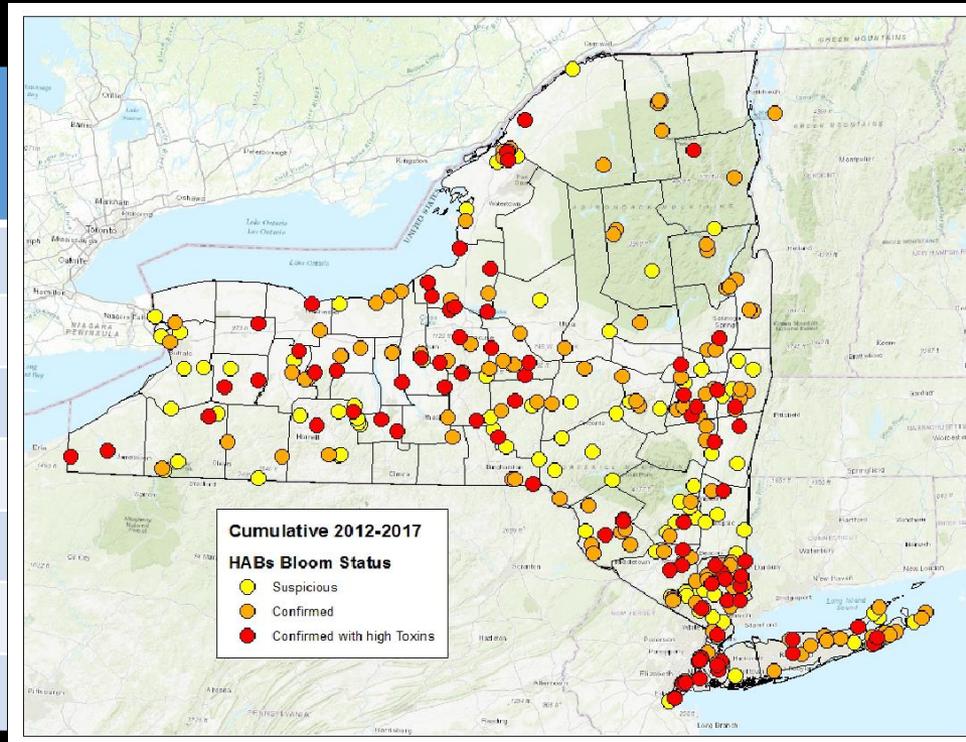
Upper Susquehanna Coalition: berm removal, constructed wetlands, buy-backs, streambed restoration...



Image courtesy Alliance for the Bay

HABs in New York 2012-2017

Year	Suspicious	Confirmed	High Toxins	Total
2012	20	29	9	58
2013	17	37	22	76
2014	19	51	23	93
2015	40	62	35	137
2016	41	95	38	174
2017	48	85	35	168
12-17	75	133	77	340



Stormwater Management Plan

1. Inventory ditches, culverts, bridges, drainage, pipes and outlets
2. What condition (probability) are they in?
3. How critical (impact) are they?
4. Rank & Prioritize
5. Capital Improvement Plan

Good condition?



What's the Impact?



		Impact				
		Trivial	Minor	Moderate	Major	Extreme
Probability	Rare	Low	Low	Low	Medium	Medium
	Unlikely	Low	Low	Medium	Medium	Medium
	Moderate	Low	Medium	Medium	Medium	High
	Likely	Medium	Medium	Medium	High	High
	Very likely	Medium	Medium	High	High	High



“Floods are acts of God, but flood losses are largely acts of man”





08/28/2011





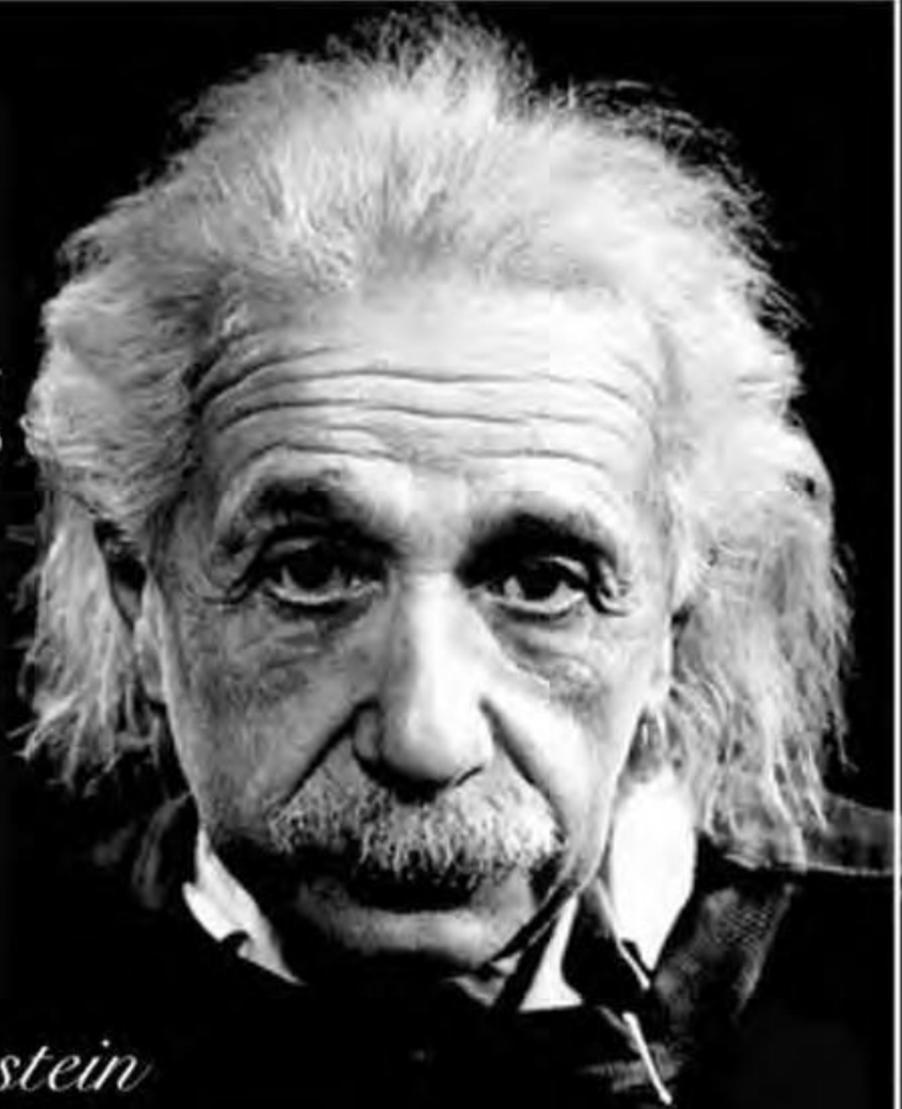
Freshtown
FRESH PRODUCE

US Spices

08/28/2011

Insanity:
doing the same thing
over and over again
and expecting
different results.

- Albert Einstein







Village of Walton - before

4-07-09

What happens when streams are reconnected to their natural floodplains?



Village of Walton - after







Map Coordinate



CHAMBERS

STONEYBROOK

SING SING

3279

3275

3270

508

516

520

532

544

548

Map Coordinates: X:



Zoom Out

Full Extent

Identify

Show Advanced Tools

3794

26

17

19

25

4779

2

31

3754

26

3752

7

36

3748

3744

3736

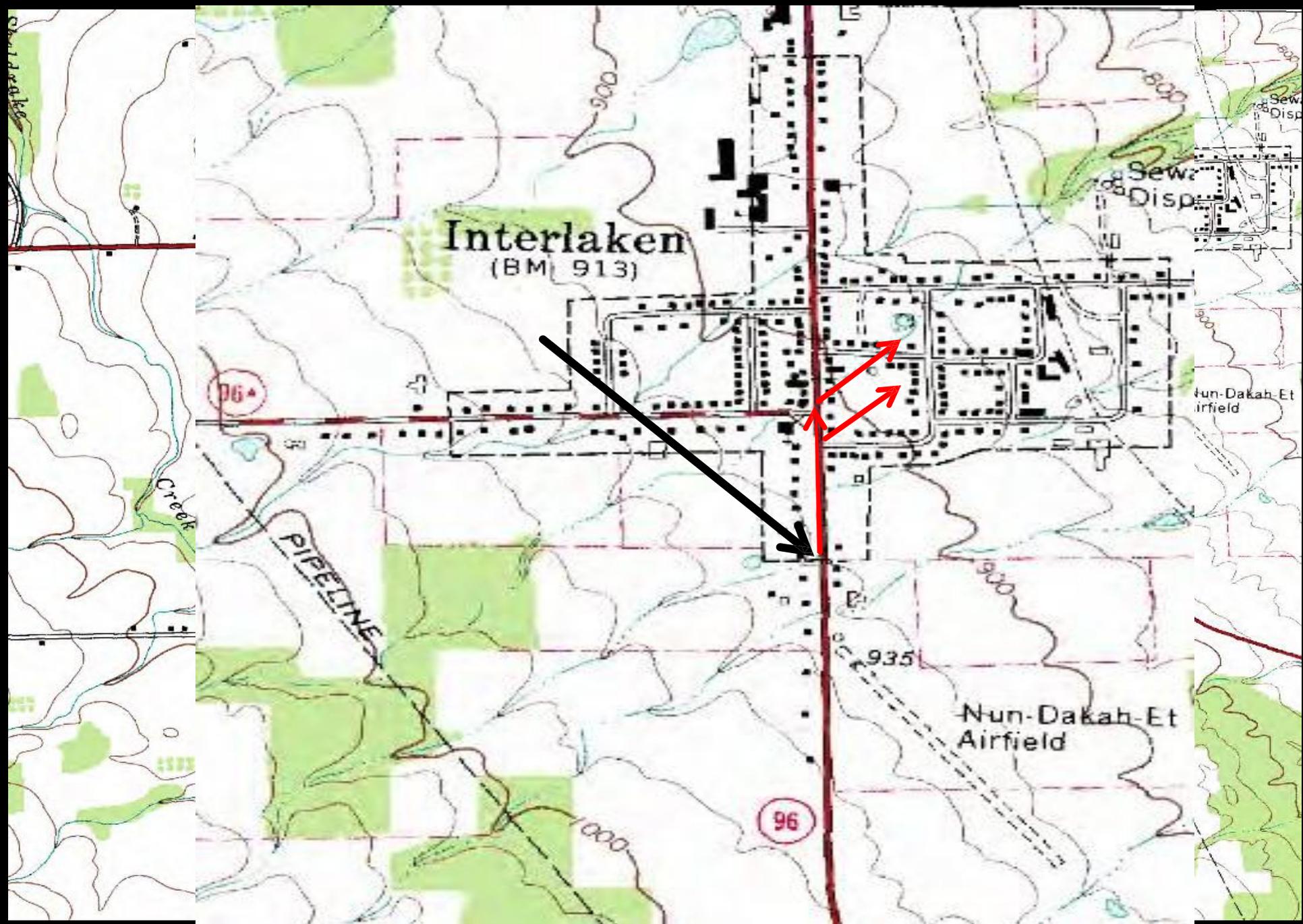
Map Co

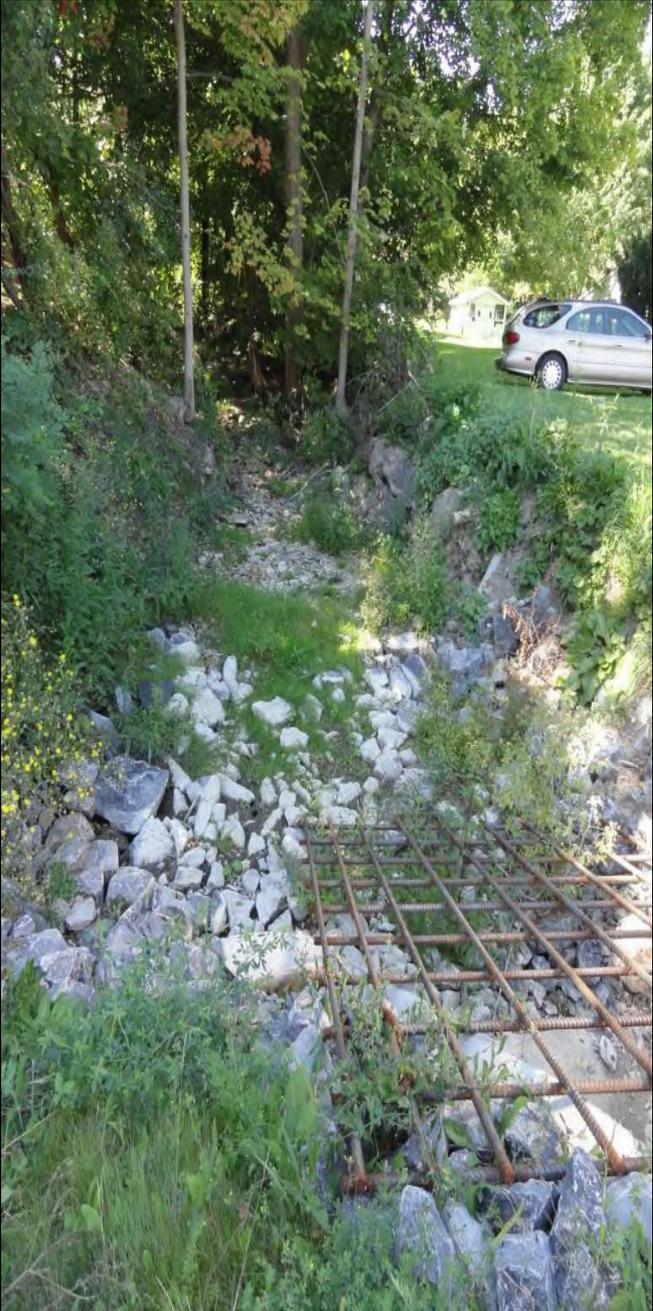


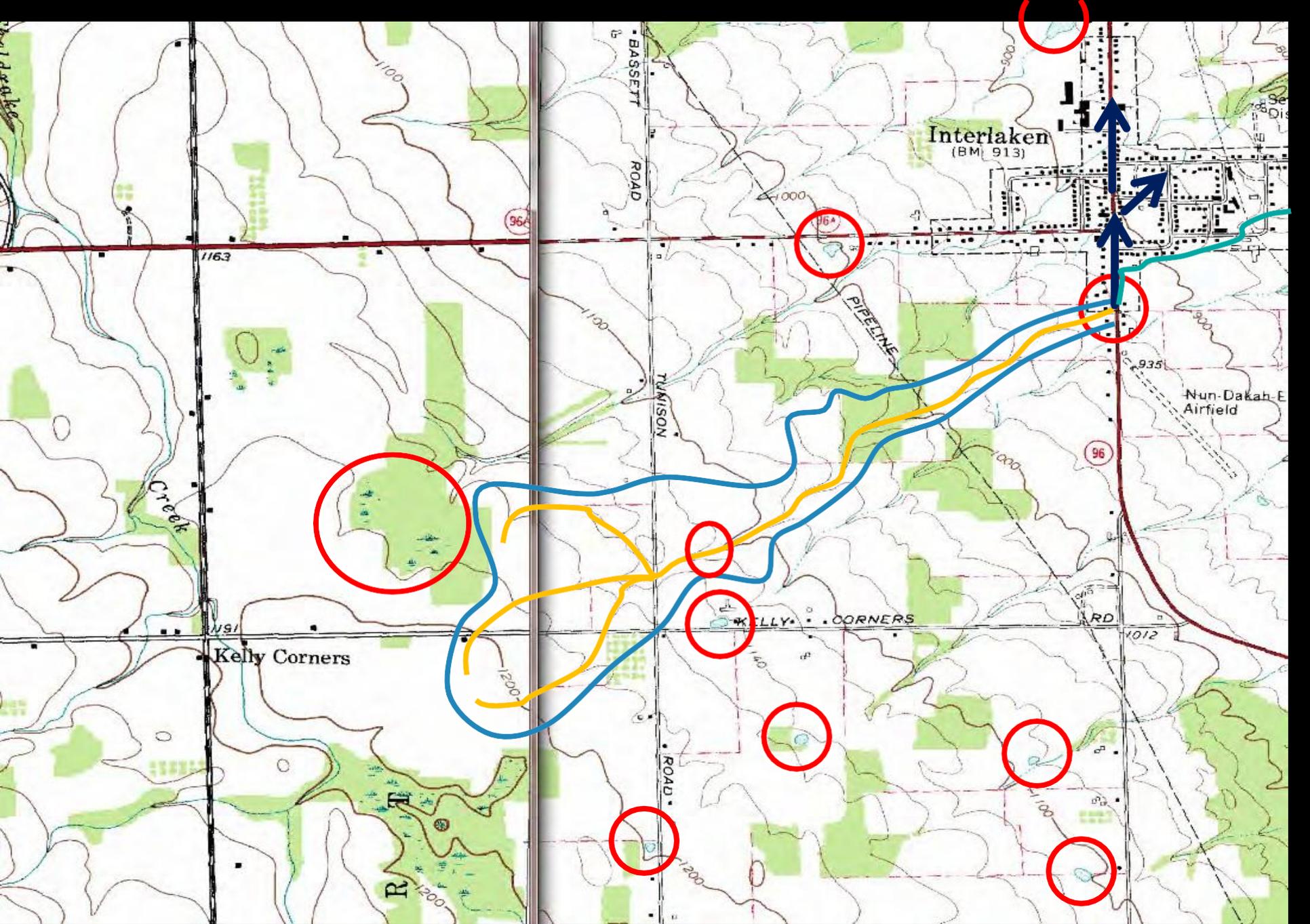
VILLAGE OF INTERLAKEN

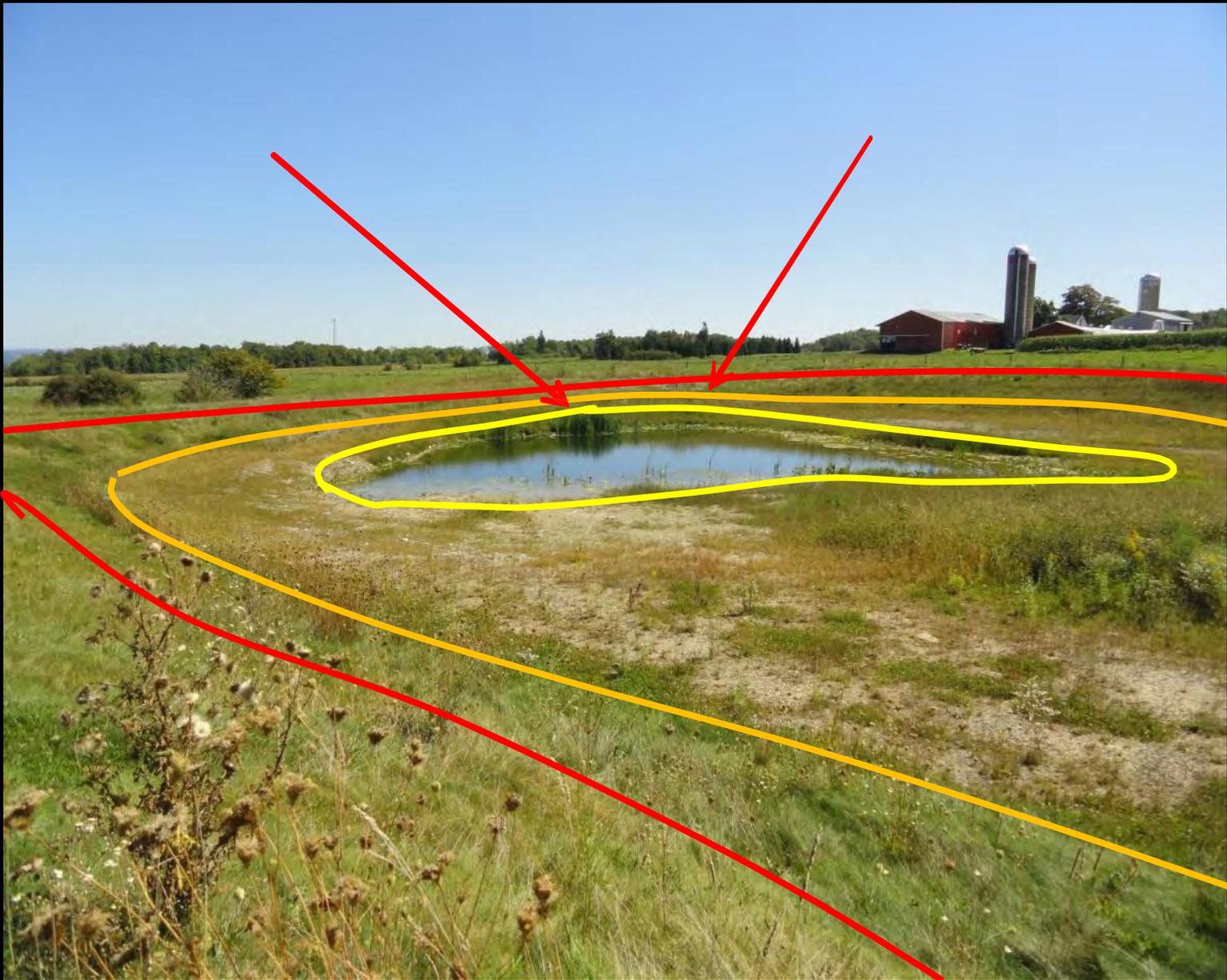
Flooding











Phew!



Khrist Dodson

kadodson@syr.edu

315-443-8818