



# **TMDLs: “One Size DOES NOT Fit All”**

## ***Lets Take an Observational Tour!!!***

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**PLEASE NOTE:  
I AM NOT A  
TMDL EXPERT!!!**

# TMDL - “Normal Pathway”

- State 303d
- New Permit
- Construct
- Problem Solved !!



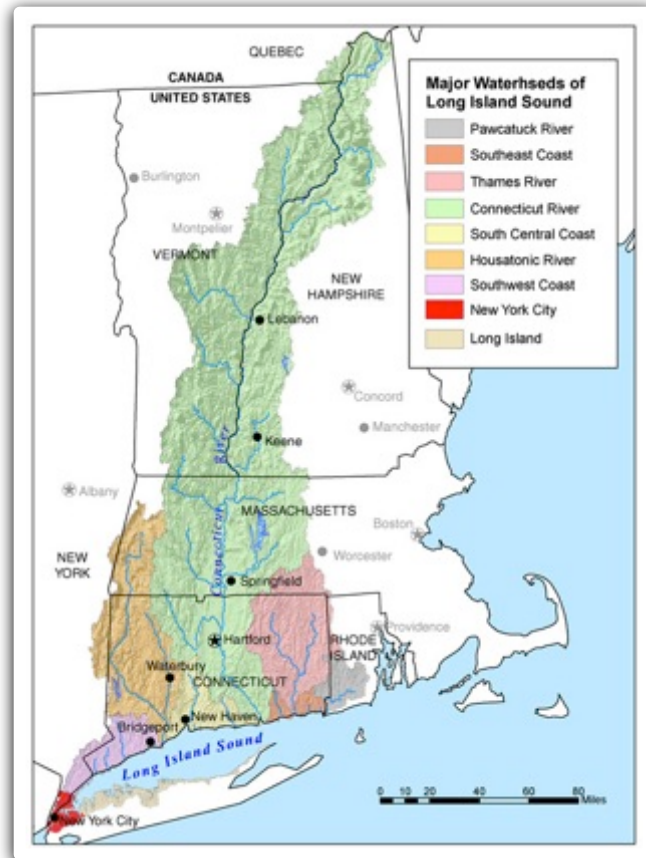
# Common Themes & Differences

- **Nutrients**
- **Legal Actions**
- **Complex, \$\$\$\$\$**
  
- ***Load Sources***
- ***Participation***
- ***Guarantees***



# TMDL "Tour"

## Long Island Sound

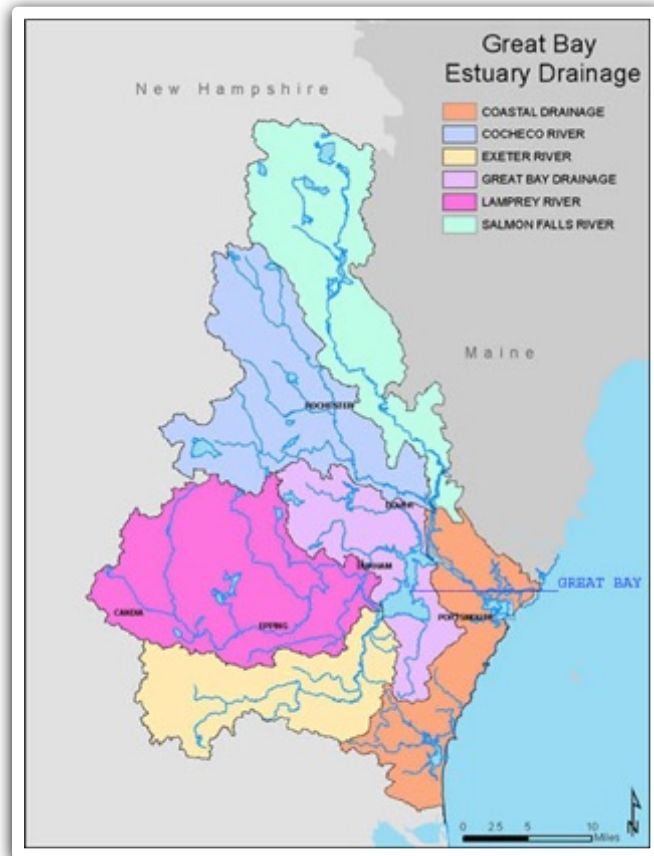


## Lake Champlain

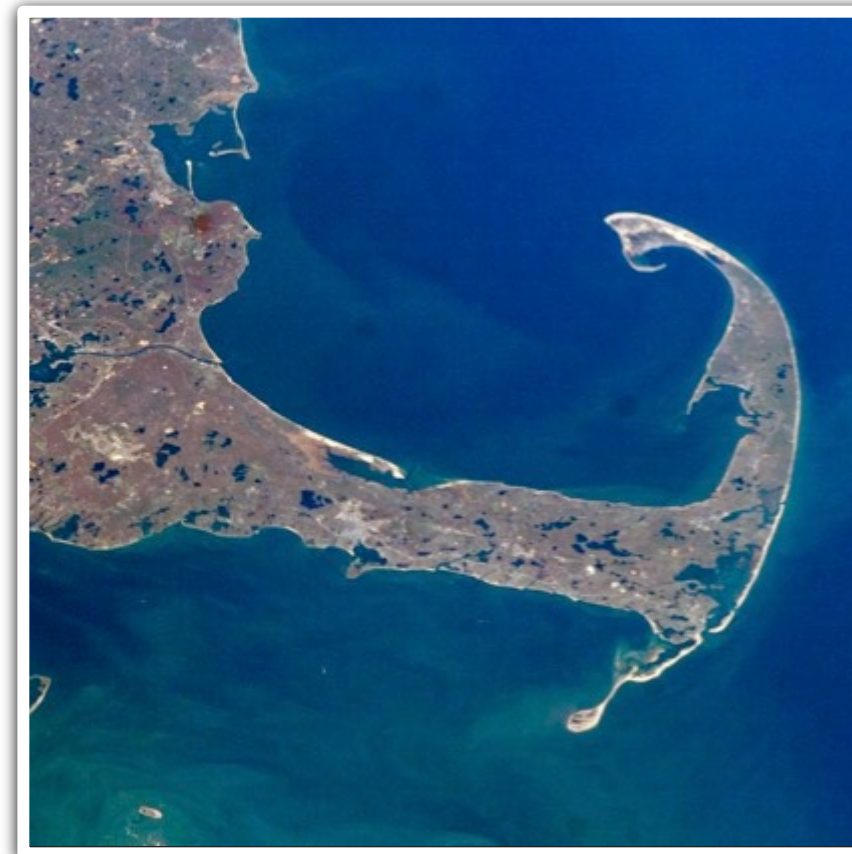


# TMDL "Tour" continued

## Great Bay, NH/ME



## Cape Cod



# Long Island Sound: #s & Facts

- 16,820 mi<sup>2</sup>
- 1,300 mi<sup>2</sup>
- 23,000,000
- > 100
- 1,000,000,000
- 8,900,000,000



# Why 2001 TMDL ???

- anoxia in LIS
- excess nitrogen and carbon
- law suits 1998 (and 2015)
- LISS





# LIS 2001 TMDL Components

## 5 Phases

- Cap 1990 loads
- Low cost retrofits
- 58% reduction TN CT/NY WWTPs
- Reduction 25% upper basin, 10% NPS, 18% atmospheric deposition
- “non-treatment: aeration, relocation outfalls, artificial wetlands, tide gates”



# LIS TMDL: Good Stuff & ?????s

- CT TN Trading & GP
- Met initial TN Goals
- Tracking NPS
- \$\$\$\$\$\$\$ spent WWTP
- Upper states ???
- New TMDL
- Recent EPA letter ??



# Lake Champlain

## Numbers

- 8,234
- 571,000
- 67%
- 200,000
- > 3,800,000,000

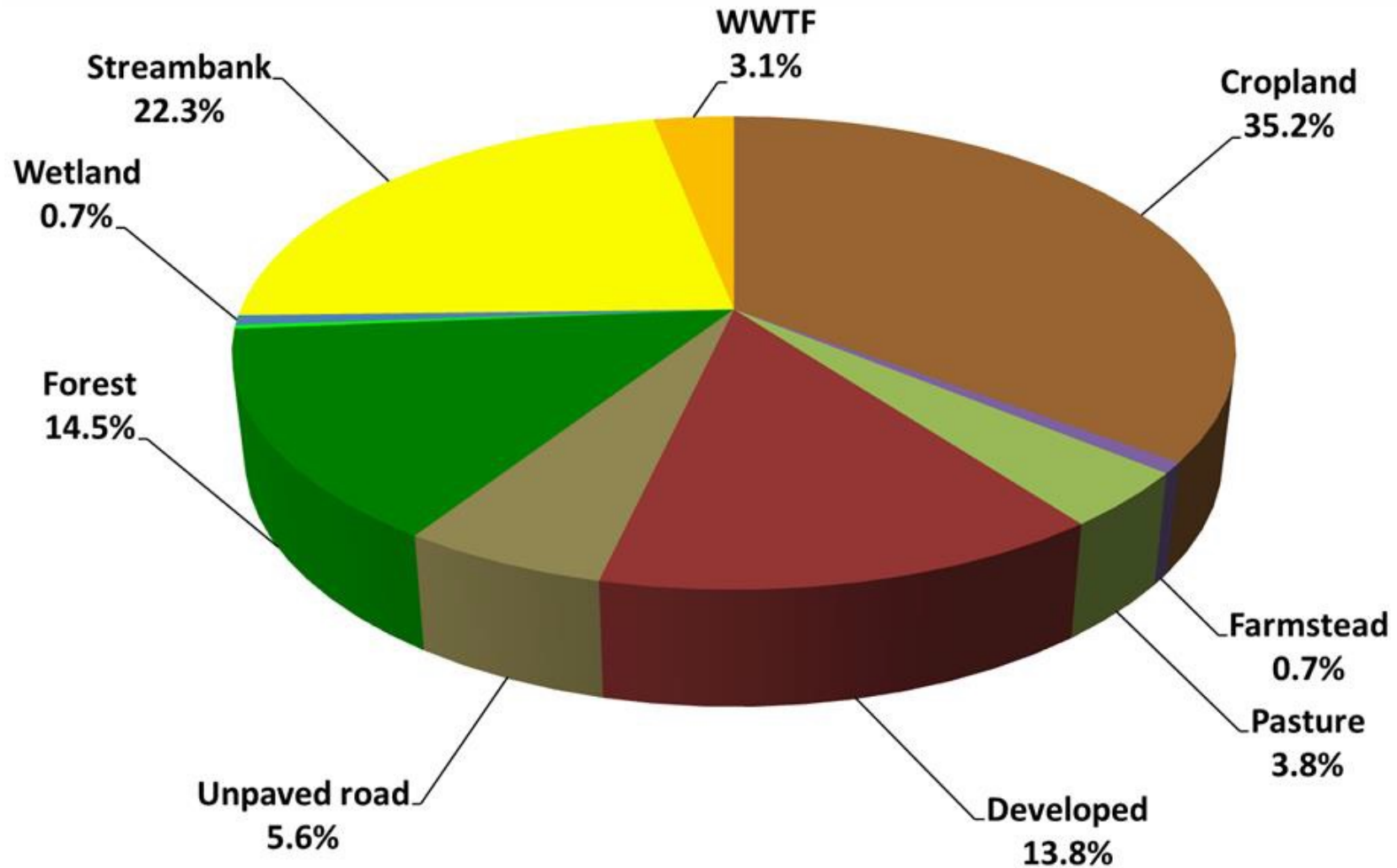


What's at stake ?????

# Lake Champlain TP 2002 TMDL

- VT WWTP load = 55.8 mt/yr
- Developed land surfaces = 94.0 mt/yr
- USEPA approved VT & NH TMDL
- Agreement with Quebec
- CLF law suit 2008- no “MOS or RA”
- USEPA disapproved TMDL in 2011
- New TMDL & state implementation plan underway

# Lake Champlain TP load



## 2015 LC TMDL Key Points

- 34% overall TP reduction
- WWTP get limits (VT did not want any)
- “Scenario Tool”
- Missisquoi & St. Albans Bays
- RA: Act 64, modeling, scenario tool, tracking system
- Considered climate change

# 2015 Vermont LC TP TMDL Implementation Plan

- **Great local involvement**
- **Phase 1: policy & regulations**
  - **General permits, ag rules, river & logging rules, FUNDING !**
- **Phase 2; basin specific plans (2016-2020)**
- **TP Sources: municipal sw, unpaved roads, unstable streams, logging, agriculture**
- **20 year implementation schedule**

# Great Bay, NH & ME

- 1,023
- 52 (42/10)
- 18
- 2007, 2009, 2014
- 0.3 & 0.45
- 1989
- 1974





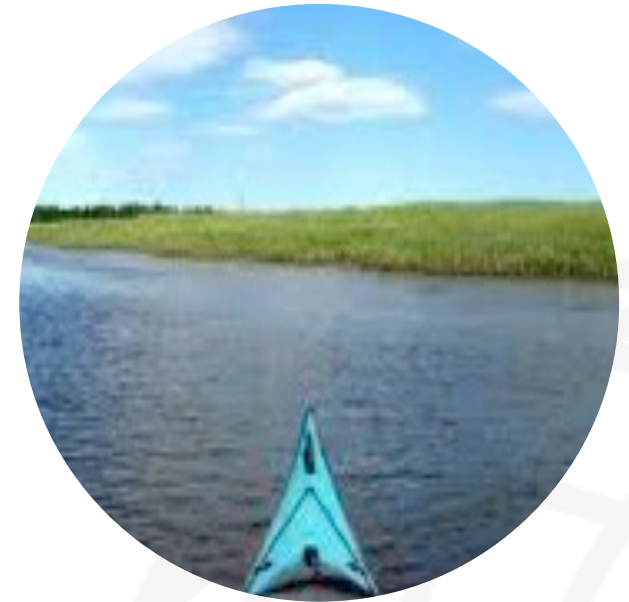
# Great Bay TMDL: it's not !!!

## TIMELINE/EVENTS

- 2007: Exeter permit, CLF TN comment
- 2009 TN “criteria”
- GB Coalition
- Ongoing lawsuits
- 2012 permits (Exeter & Newmarket) w/ 3.0 mg/l TN
- 2013-2014 “Peer Review”

# Great Bay Today

- 3 WWTP projects
  - ACOs for 2
- TN criteria & NPDES permits “resting”
- Litigation ???
- No TMDL yet
- “WISE” & Oyster River plans are exciting !!



# Cape Cod: What's the Problem ???

- Nitrogen !!!
- Septic systems
- One aquifer
- Planning but no action
- Billions \$\$\$ to solve problem
- Without clean water take down the bridges !!!



# MEP, TMDLs & CWMPs

- **2001 MEP began studies & models**
  - 70 estuaries
  - Site specific data
  - Linked watershed embayment model
- **MADEP TMDLs**
- **CWMPs**
- **Sewer or nor sewer ??**



## 208 Plan: savior ???

- **CLF law suit vs. USEPA**
  - Failure to comply with CWA sec. 208
- **CCC update 208 in 2013**
  - \$3.35 M funding
- **53 watersheds !!!**
- **Public involvement**
- **Approved by Governor & USEPA in 2015**



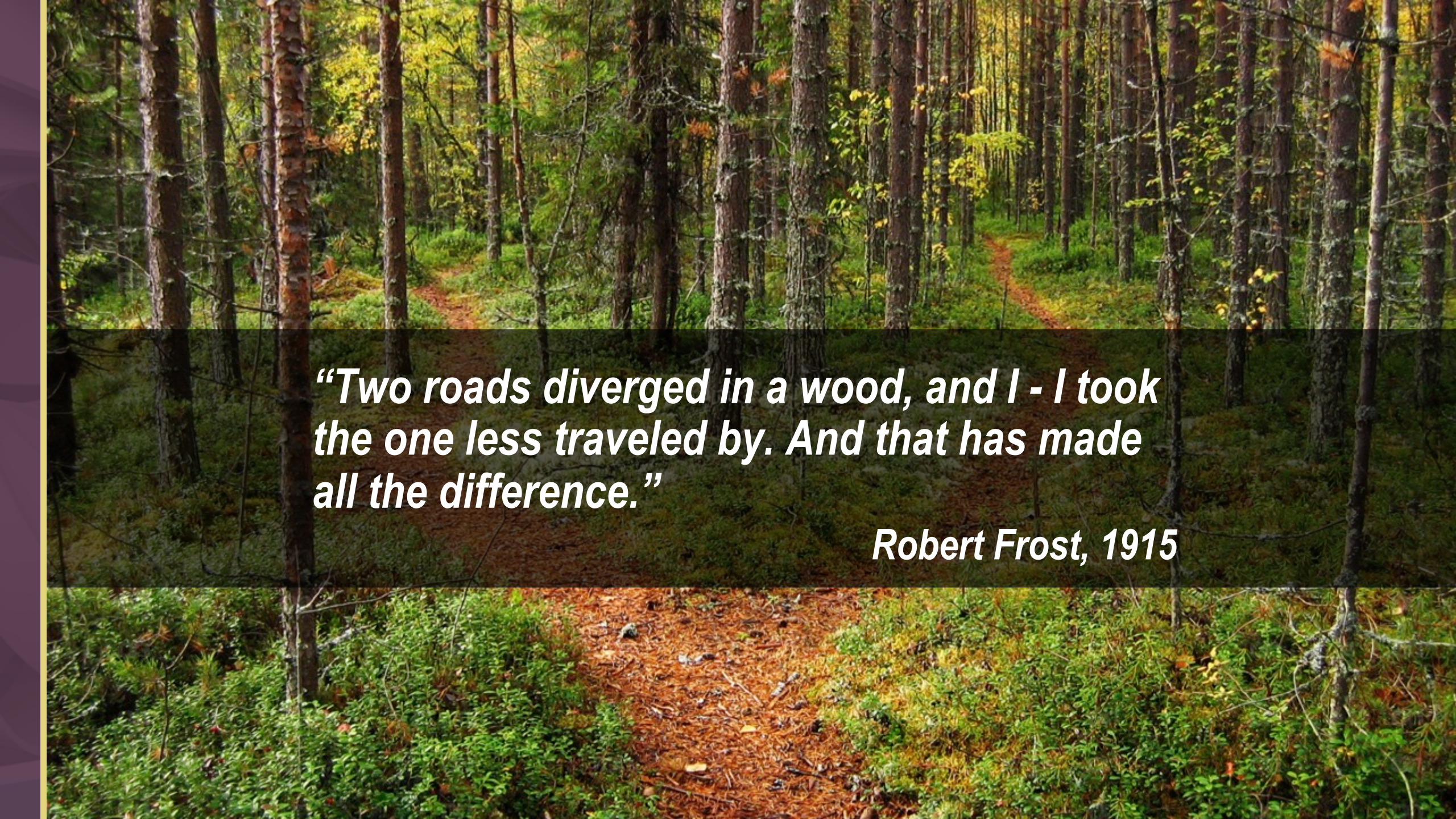
# 208 Plan: Key Features

- Choices to towns
- Regulatory reform
- Watershed permit 2016
- Waste Treatment Management Agencies
- Technologies Matrix
  - 67 options !!!
  - PRBs, inlet widening, WWTP



# SO WHAT HAVE WE LEARNED??

- **Nutrients are big problem !!!**
- **TMDLs alone don't work !!!**
- **There is a lot at stake**
- **Need \$\$\$\$\$\$**
- **Legal actions seem to get ball rolling**
- **Public needed to be involved**
- **One size really does not fit all !!!**



*“Two roads diverged in a wood, and I - I took  
the one less traveled by. And that has made  
all the difference.”*

*Robert Frost, 1915*





**Thanks for joining the tour!!!  
Questions, Ideas, Comments????!!!!**

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