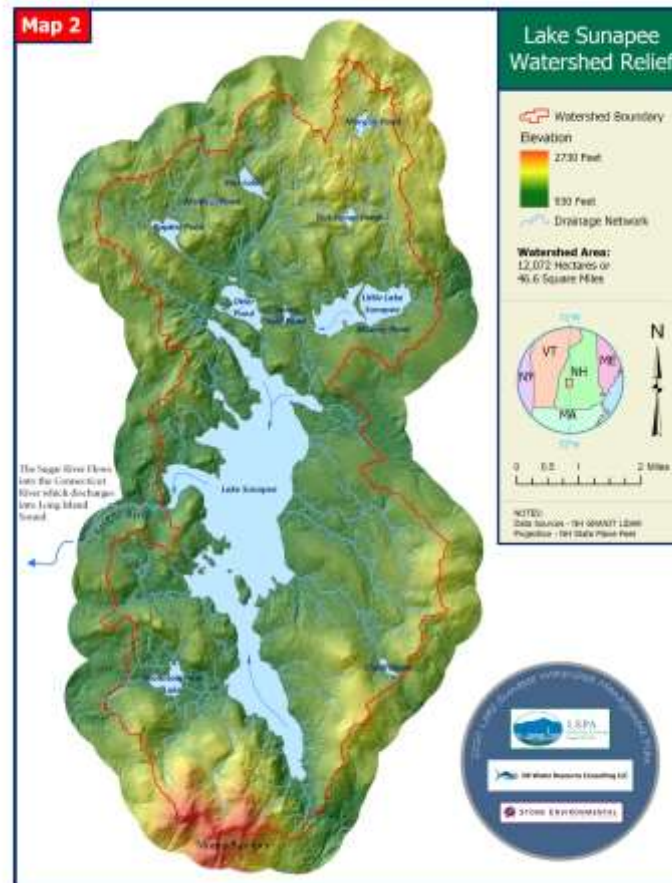


2020-30 LAKE SUNAPEE WATERSHED MANAGEMENT PLAN PROGRESS

February
2020-March
2022 Time
Period – 2
Years



ACTION PLAN – EDUCATION & OUTREACH

- LSPA met with various town boards and organizations describing plan
- LSPA provided annual reports to lakefront towns in 2020 & 2021 that included progress of plan
- **15** ads were published in the Kearsarge Shopper to date encouraging good land stewardship practices including:
 - Septic System Care
 - Proper Fall Cleanup (leaf dumping)
 - Pet Waste Cleanup
 - Lake Friendly Landscaping
 - Yard Chemical Applications
 - Lawn Fertilizers
 - Waterfront buffers



**Watershed Wednesday
with LSPA**



Think Your Yard or Garden Needs Extra Nutrients? Think Again!

Mother Nature has finally showered us with some rain, now think twice before applying fertilizer on your lawn and gardens. Instead:

- Use native plants—they require less maintenance
- Keep your grass longer to retain more soil moisture
- Recycle grass clippings and leave them on your lawn—it's free fertilizer
- Test your soil before applying anything—many NH soils have adequate nutrients

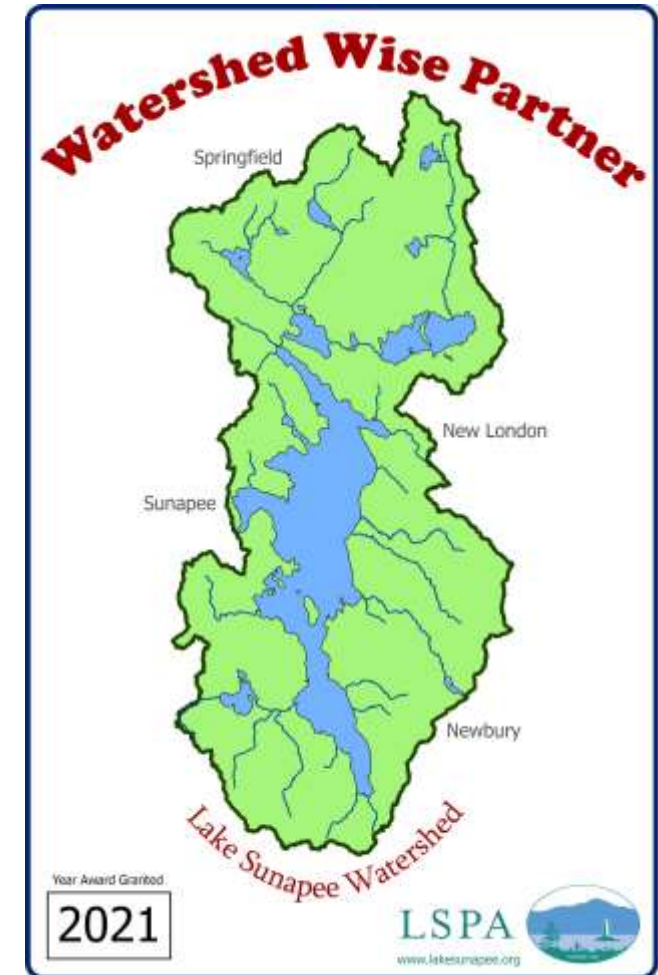
**Fertilizers in our waterbodies = algal blooms.
We don't want our lakes to turn green
like our grass!**

ACTION PLAN – EDUCATION & OUTREACH

- Created Summary Booklet of WMP in 2020 – Posted on LSPA Website and copies made available to public
- Launched Watershed Wise program in 2021 – 18 Participated in program
- 5th Grade Environmental Camp – Kearsarge Students (annual event)
- Hosted Watershed Discovery Sessions in 2021 reaching around 160 5th Grade Students in the area
- Hosted 4th grade stream ecology sessions in 2021 at the Fells reaching 40 students (annual event)
- The Watershed Committee has been encouraging waterfront towns to find ways to ensure compliance of existing erosion and stormwater ordinances



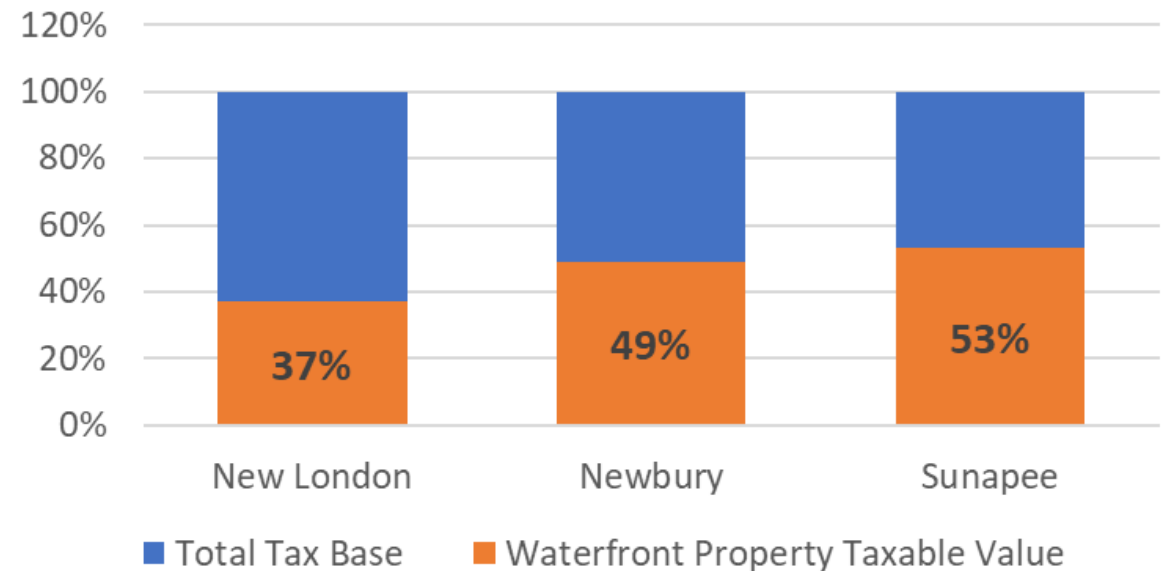
Slow It Down, Spread It Out, Soak It In



ACTION PLAN – RESEARCH

- Economic Impact Literature was reviewed by CSC student in 2020.
- Watershed Committee Subgroup completed an economic report summary in 2021 highlighting annual tax revenue from waterfront properties.
- Information learned is to be used in future outreach efforts.

Annual Tax Revenue from Waterfront Properties



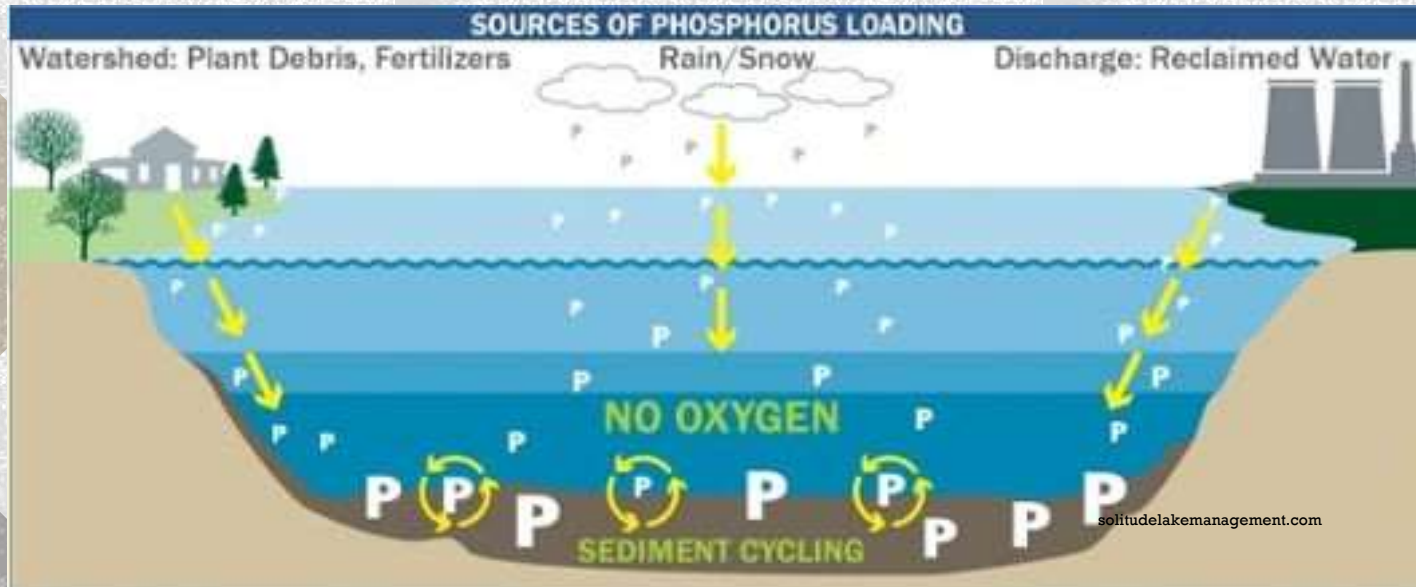
ACTION PLAN – RESEARCH

- Phosphate Study completed by CSC student in 2020 to determine if phosphate free products (laundry & dish detergents, surface cleaners) are indeed free of the element.
- Results indicate liquid products were relatively free of phosphorus. Results for powder and pod cleaning products were inconsistent using two different measurement methods.
- Additional study was recommended to clarify results on these latter products.

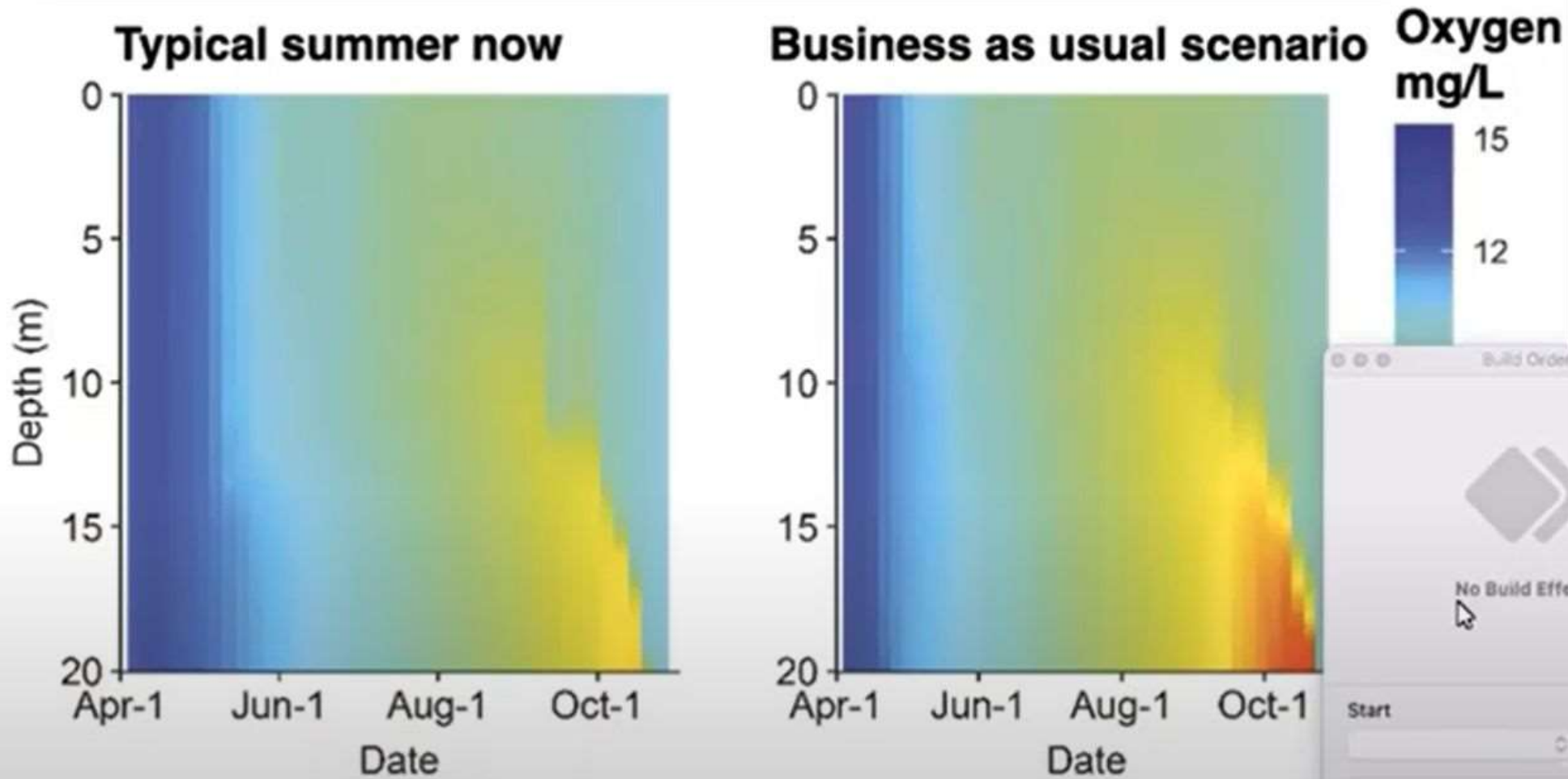


ACTION PLAN – RESEARCH

- Completed preliminary analysis of lake bottom sediment in 2021 (Lake Sunapee). Full testing to be done in 2022. Results will help us better understand existing phosphorus content and binding capacity of lake sediments. This will help determine potential internal release rates in low oxygen conditions that may occur in future.



Warming conditions will decrease oxygen in bottom waters, negatively affecting fish habitat



Slide From Dr. Cayelan Carey's March 9th, 2022 Presentation "The Past, Present and Future Water Quality of Lake Sunapee"

ACTION PLAN – RESEARCH

*Raking leaves
produces NO air or
noise pollution.*

- A literature review on the impact of airborne dust from leaf blowers was conducted by a CSC student in 2020. LSPA was interested in knowing if this activity contributes to phosphorus loading of waterbodies.
- Results of review found no studies pertaining to phosphorus loading but did find numerous studies linking air pollution with the use of gas-powered leaf blowers.
- Contributes to CO² concentration in atmosphere

**POLLUTION
FROM
1
HOUR**



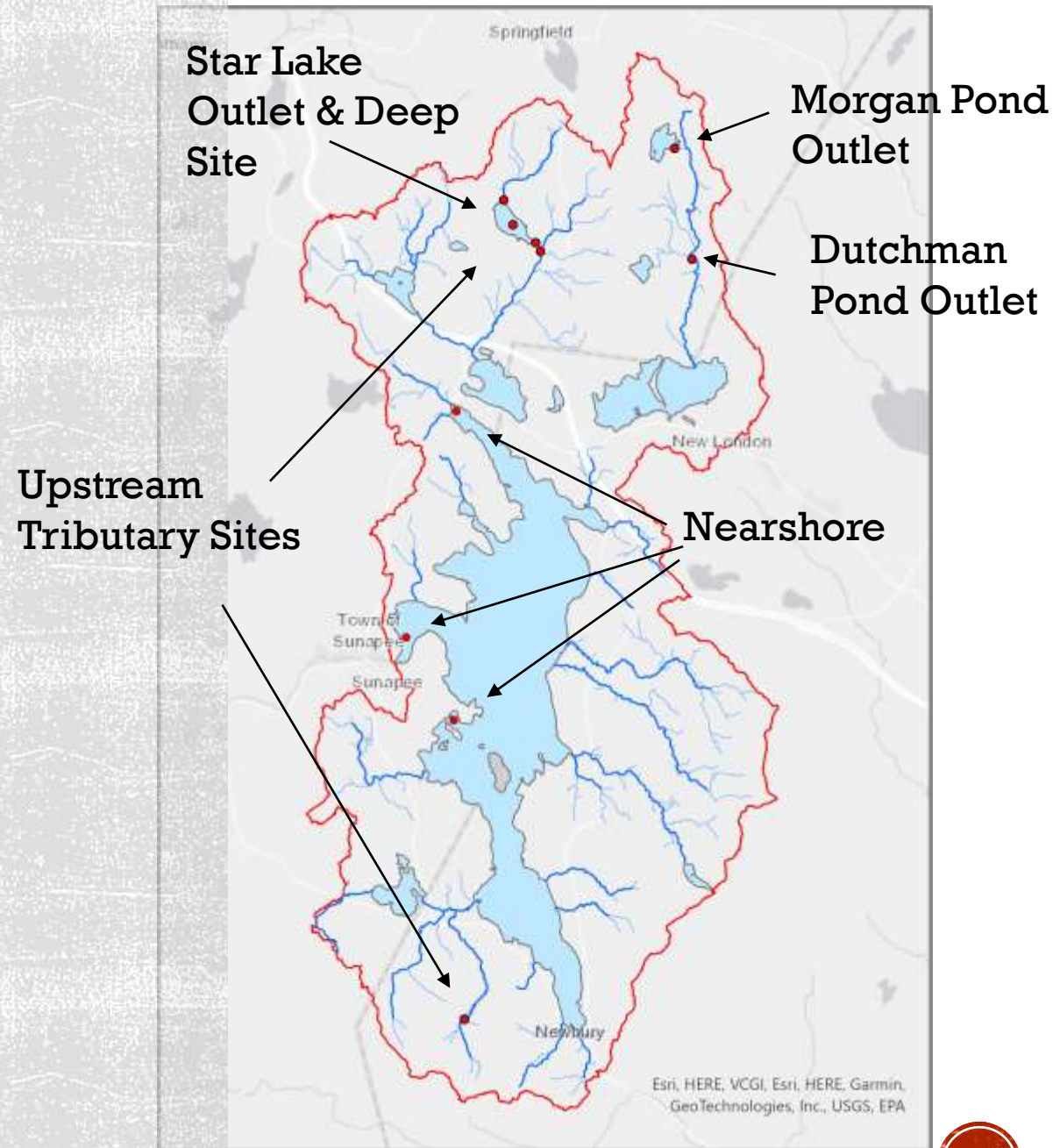
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**POLLUTION
FROM
1,100
CAR MILES**

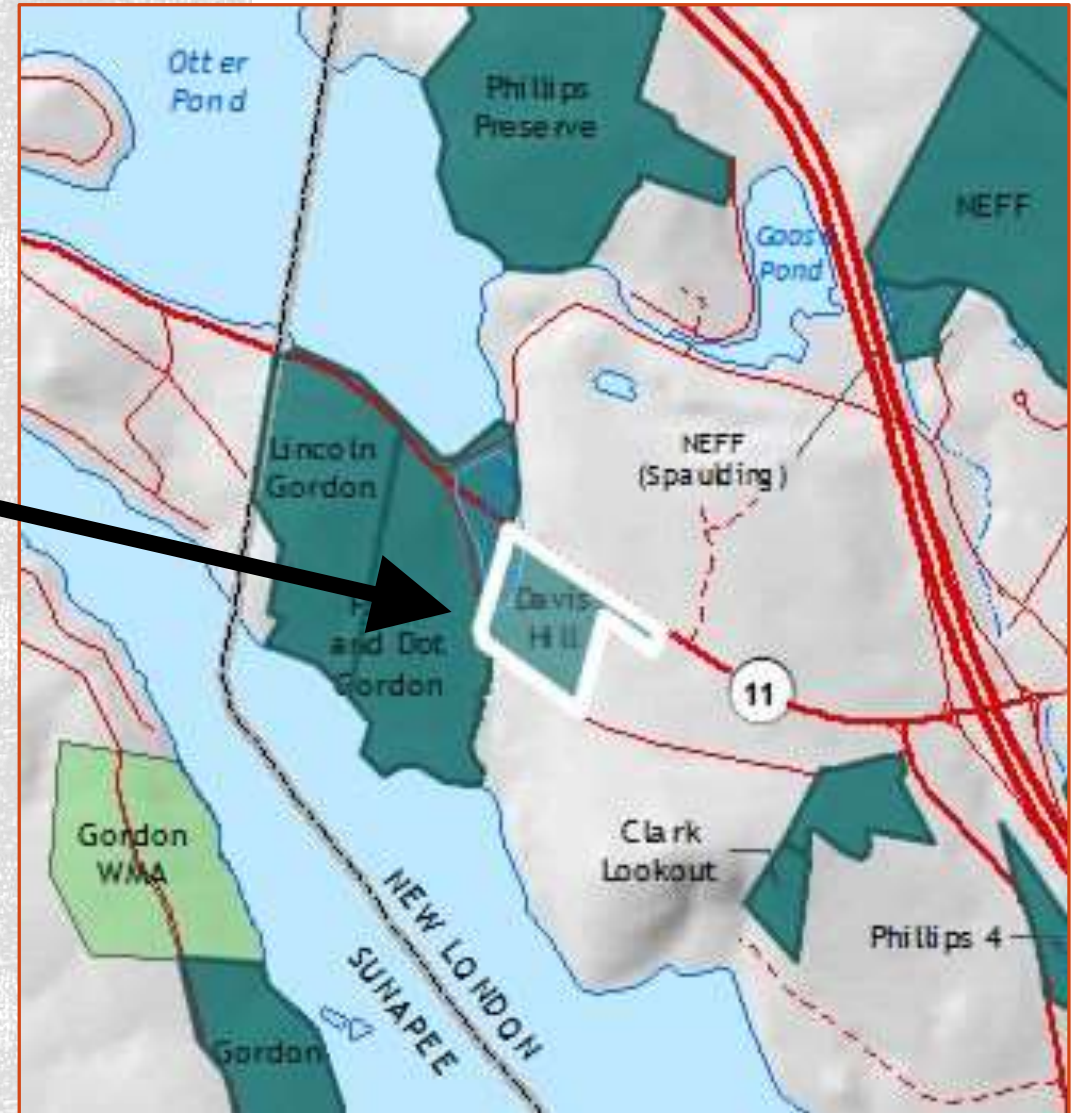
ACTION PLAN — MONITORING

- Expanded Water Quality Program — added or reactivated 3 nearshore stations, 1 deep site station (Star Lake) and 6 tributary stations
- Helps us better understand where phosphorus loading is occurring
- Data used to improve future modeling efforts



ACTION PLAN – LAND CONSERVATION

- 16 Acre Davis Hill Road Property, Placed under Conservation Easement in April 2021
- This conserved parcel offsets phosphorus loading by 0.5 kg (1.1 lbs) per year contributing to the 100 kg/year reduction/offset goal that we hope to achieve by 2030



WATERSHED PROJECTS - PROGRESS

- ⑧ **Projects Completed – Met nearly 20% of BMP phosphorus reduction goal**
 - Newbury – Bridge Replaced in 2020 Over Bay Point Road (Chandler Brook)
 - Mt. Sunapee Facility Garage Area BMP Restoration – 2020, ongoing
 - Springfield – Deer Hill Road Turnout & Sediment Traps
 - Sunapee – 5 sites addressed, 4 by Highway Department During Road Maintenance Schedule – Burkehaven Hill Road, Lake Ave in GM, Garnet Hill near Dewey Beach, Westwood Road; and 1 private – Driveway Erosion
- ④ **In Progress – Phase 1 and 2 Grant Project Sites**
- ⑤ **Ongoing – Partially completed or needs routine maintenance (Yacht Club)**
- ④ **Projects Abandoned –**
 - NHDOT Sites (Did not think proposed approaches were needed at this time)
 - NL Shopping Plaza Detention Pond Restoration – material buildup and outlet need addressing



GOAL - TOTAL IN-LAKE PHOSPHORUS REDUCTION/OFFSET OF 7.5% OR 100 KG PER YEAR

- As of March 2022, we have achieved about **8%** of our phosphorus reduction goal from completion of projects and conserved land.
- Looking at ways to estimate reductions from land use regulation and outreach efforts – likely use assumptions.
- Not hitting Land Conservation Target – need additional 600 acres conserved to meet goal

Table 21 - Summary of Estimated Phosphorus Loading Reduction/Offsets

| Category | Estimated Annual P Load Reduction /Offset (kg) | Estimated 10 year P Reduction/Offset (kg) | Notes | |
|--|--|---|---|--|
| Education and Outreach | 1 | 10 | Estimate includes voluntary action, septic upgrades and homeowner projects. Could be substantially higher. | |
| Research | na | na | Critical to understanding watershed and lake processes. | |
| Further Evaluation | na | na | Estimated reductions are presented in Best Management Practices Section (to be identified) below. | |
| Monitoring | na | na | Data required to evaluate long term changes | |
| Land Conservation | 2 | 20 | Offset of P loading is 0.26 kg/yr (keeping land in forest rather than residential) for full buildout period. This equates to an offset of 0.08 kg/ha/yr for the next 10 years. Estimate based on 25ha/yr protected or 250 ha over 10 years. | |
| Land Use Regulation, Zoning and Ordinances | 1 | 10 | Estimate | |
| Best Management Practices | Identified | 4 | 40 | See Appendix H - BMP Tables |
| | To be identified | 2 | 20 | Sites identified through further evaluation tasks. |
| Total Reductions/offsets: | 10 | 100 | | |