

Lake Carmi Coordination Team Meeting
Thursday March 24 @ 4:30 PM
Meeting Minutes

- **Opening Remarks – FWC and Carmi Campers Association Leadership**
 - Rob- Ice is starting to get out, grateful for the turnout at these meetings
 - Pete- Thankful for the turnout, video of Hammond brook flowing brown from St. Patricks day.
 - Oliver - Goal of meeting: planning meeting for work this summer.
- **Updated Lake in Crisis Response Plan – Oliver Pierson (DEC)**
 - Update for executive summary and critical path projects
 - First update since 2018
 - Best effort to catalog projects going on
 - Oliver open to questions/comments/corrections
 - Final update will be posted on Carmi website once complete
 - Also working on updated Lake Carmi Clean Water progress report with data through 2021
 - Interactive web-based tool
 - Presentation to introduce the revised report
 - Ag, roads, natural resource, shoreland bmps. Overall more comprehensive report compared to previous report.
 - Estimated cost for gauges in feasibility study done by Stone Environmental discussed in the previous coordination meeting (Questions from Diane Larose and Albert Perry)
 - [Lake Carmi Tributary Flow Monitoring Feasibility Assessment FinalReport_vfinal \(002\).pdf\(Review\)- Adobe Document Cloud](#)
 - [Lake Carmi Crisis Response Plan 3.0 March 2022.pdf](#)
- **Introduction of Bryan Dore, EPA Region 1 office**
 - EPA region 1 out of Boston
 - Lake Champlain TMDL
 - Taking over for Erik Perkins
 - Been with Lake Champlain program for about 5 years
 - Focus on non-point source pollution
 - Looking to be informed and open to providing resources/assistance
 - Point source vs non-point source pollution
 - Non-point regulated differently than point source
 - Non-point source pollution areas, EPA takes different approach
 - Contact Info: dore.bryan@epa.gov 617-918-1211
- **Missisquoi Basin Act 76 Clean Water Service Provider Update – Dean Pierce (NRPC)**
 - Slideshow
 - Legal framework
 - Act 76
 - Provides long term funding source
 - Prioritizes non-regulatory projects
 - Sets up network of decentralized organizations
 - Basin Water Quality Councils

- CWSP responsible for establishing and maintaining partnerships and acting as conduit for funding and oversight and maintenance
 - Ensure consistency with Tactical Basin Plan
 - Funding granted according to pollution target/ responsible for meeting target
 - Adopt procurement policy
 - Adhere to management requirements
 - Councils
 - Representatives from different sectors
 - Provide localized water quality knowledge
 - Make decisions and prioritizations
 - Eligible projects (non-regulatory)
 - Stormwater developed lands
 - Floodplain restoration
 - Farmland buffers
 - Riparian buffers
 - Wetland restoration
 - Etc.
 - Target: 66% phosphorus reduction
 - TMDL assigns reductions across sectors
 - Pie chart on slides
 - Year 1 funding targets
 - Roughly 7 million estimate in funding for basin 6
 - 145 kg phosphorus reduction projected for year 1 across all sectors
 - Need projects of varying scale
 - Phases
 - 1: Web site, grant/contracting system, project tracking system, accounting, policies, guidelines, managing invoices
 - 2: training, meeting rules and policies
 - 3: **
 - Short medium and long term timeline**
 - Short term for BWQC
 - **more info in slides from Dean ([CWSP Carmi Presentation.pdf - Google Drive](#))
 - Marli Rupe: DEC working on information and specific numbers along with Agency of Ag
 - Guidance document in development
 - Funding: should be plenty of funding for entire basin and projects
 - Should be able to apply to critical path projects in lake in crisis report
 - FWC can play role in advancing projects by bringing them to council and advocating
 - MRBA and Friends of northern lake champlain are two watershed organizations seated on BWQC
 - Karen Bates: Check out web page for updated information ([Clean Water Service Provider | NRPC \(nrpcvt.com\)](#)).
- **Summer Lake Monitoring & Aeration – Oliver Pierson (DEC) & Andrew Schroth (UVM)**
 - Gearing up for similar summer to last
 - Tributary monitoring began last week (Rob Cormier) 18 samples of DP and TP
 - 4 components: tributary samples bi weekly DP and TP, Lay monitoring in lake for TP chlorophyll A and water clarity, Pete stangel samples various sites in-lake (DO, temp)

track progress along TMDL, Platform (potentially last summer for this – current funding tapped out)

- Andrew Schroth on Platform
 - Hoping for fully functioning aeration system
 - Not collecting water samples or sediment
 - Sensor in the lake measuring an array
 - Web page will be functioning to monitor in real-time
 - Hoping to have draft of report on 2021 data next week
- Oliver: Aeration system
 - 3 seasons of operations, technical issues each year
 - Hoping 2022 to have fully functioning system throughout season
 - Cooling issues have been worked out, John Tucci has been responsive
 - Likely due to heat and drought conditions in 2021
 - Watching for thresholds set with Fish & wildlife for turn on timing
 - Thanks to Town of Franklin for helping fund electricity costs
- **UVM Extension-led Manure Injection & Other Ag Work in 2022 – Jeff Sanders (UVM) & Marli Rupe (DEC)**
 - Jeff Sanders:
 - Have done a bunch of work with data in Carmi Watershed over the past several years
 - Continue to focus on manure injector (repaired late 2021)
 - Injector has not yet been tested since repairs due to timing (winter)
 - Funding available to hit targets (700-800 acres of land injected)
 - LCBP funds to look at high forage diets included farms within the watershed
 - Reduce grain use to reduce phosphorus
 - Pay for phosphorus program
 - Farmers paid for reducing phosphorus
 - Jeff said 2 farms enrolled in the watershed
 - Paul Stanly: Nitrogen fertilizer prices are through the roof. Injection is gaining more interest and will likely become mainstream. Increase focus on nutrient management plan (monitor placed in tractor with farmer).
 - Jeff: looking into methods for nitrogen retention. Additionally, one of the largest farms in the watershed has been completely converted to organic (300-400 acres). Another point: studies indicate soils in Lake Carmi are above average in terms of soil health tests, sampled roughly ten fields (both hay and corn). More data will be provided when available.
 - Manure digester non-operational (would require around 100K to get it operational)
- **Groundwater Monitoring Update – Jon Kim (DEC)**
 - Final Report around June 30th
 - Trying to determine influence of ground water on phosphorus levels in the lake
 - Building 3d framework for lake basin: bedrock geologic mapping, samples from wells and streams, putting in shallow water monitoring wells
 - Contact tracing approach for phosphorus: every sample of water evaluated through tracers, thinking about other potential external sources (ex. Ag, bedrock, soils)

- P found in shallow and deep water
 - Evidence of ground/surface water interaction
 - Why this is considered:
 - Studies indicate groundwater has been a factor in cyanobacteria blooms elsewhere
 - Funding from LCBP/EPA, AAFM, Middlebury college (thesis)
 - Currently have one set of samples
 - Bedrock at carmi similar to that of other sites that have been studied
 - Shown to produce chemistry elsewhere
 - Showed maps of bedrock surrounding carmi in slides
 - Ground water flowing to lake same as surface water
 - Monitoring wells at 7 sites around lake (cores from each analyzed in detail)
 - Reservoir of phosphorus found in cores that could be mobilized by groundwater
 - Groundwater at 4 wells clearly flowing towards lake
 - Graph shown depicting average phosphorus concentration at each type of sample site
 - Tributaries 20-150 ppb phosphorus
 - More info on slides*
 - Working on getting p loads from ground water along with surface water
 - Groundwater entering lake both shallow and deep has a natural source of phosphorus. This will need to be factored in when considering reductions along with all other sources of phosphorus.
- **Cami Watershed BMP Monitoring Grant – Staci Pomeroy (DEC) and Lauren Weston (Franklin NRCD)**
 - Staci:
 - Examining agricultural and natural resources BMPS
 - Grant agreement currently being put in place
 - Lauren:
 - District Manager FNRC
 - FNRC, FWC and Fitzgerald Environmental
 - Plan is to do agricultural (non RAP), stream and shoreland BMPs
 - Build prioritization Matrices
 - Involve community to develop list of priorities for new bmp implementation
 - Examine existing BMPs as well
 - **Alum Treatment in Lake Carmi? – Rob Evans (FWC & CCA) and Oliver Pierson (DEC)**
 - Rob: Can we begin to take a look at what Alum might look like and if it could potentially be a solution at some point.
 - Oliver:
 - Watershed sources of phosphorus were high enough that alum would not be an effective solution
 - Other locations where it has had success had significant reductions of phosphorus input prior or small enough to make an impact
 - Alum has been shown to successfully control legacy phosphorus
 - Funds have previously been allocated towards installing the aeration system
 - Data from previous few years have indicated watershed projects have been successful at reducing some phosphorus (mainly TP)

- If aeration system continues to fail, could potentially lead to increased consideration of an alum treatment at Lake Carmi
 - Alum would cost between 1-7 million dollars for Lake Carmi
 - Alum may be harder to permit in the future due to regulations
 - For now, continue to monitor aeration systems and effectiveness of practices currently in place.

- **Lake Carmi ongoing private roads and driveways project – Karen Bates (DEC) & Linda Blasch (NRPC)**
 - Met with NRPC
 - Assessment completed, know where work will take place
 - Spoke with landowners to determine feasibility/willingness to partake
 - Additional money through EPA to do additional work
 - Most roads identified located on west side of lake
 - Pete: connected Linda with Black Woods Road Association
 - Get updates from Linda to include in minutes

- **FWC Priority Projects for 2022 – Tucker Wehner**
 - Several Project Development Block Grants Underway
 - Three Projects through Northwest Regional Planning Commission
 - Project 1
 - Project development to address sediment entering lake directly from Dewing Shore Road with stormwater
 - Project 2
 - Project Development to create a riparian buffer design/planting project along Dewing Brook
 - Goal to reduce potential erosion and increase shading to reduce algae blooms
 - Project 3
 - Look into potential for a wetland restoration on the South end of the lake
 - Watershed United Vermont Project Development Block Grant
 - Project development to address stormwater erosion on both ends of the Route 236 Culvert on Marsh Brook
 - Received funding through LCBP to purchase two fish finder/gps trackers with the purpose of locating aeration system diffusers/ensure they are functioning properly
 - We will be working alongside FNRCD and Fitzgerald Environmental on the Agricultural, stream and lake wide best management practice assessment and design RFP
 - We will continue tributary sampling for Dissolved and Total Phosphorus
 - Sampling began already thanks to Rob Cormier and will continue
 - We will also continue focusing on tracking and reporting cyanobacteria blooms

- **Any Other Business**
 - Paul Stanley: Asked about mediation project. Would like to meet with Karen to discuss potential possibilities. Potential support from FWC or other organization.
 - Oliver: hopefully this is one we will have a mediator with a clear goal of bringing folks together.

- In case you missed it: Local Led conservation survey is open to help inform where NRCS funds go in the future for our region:
 - <https://docs.google.com/forms/d/e/1FAIpQLSczwzpTzJcRXegym5Oxl1RPeevQKh30ReqfNwgLFcHq9vCeTw/viewform>
 - Locally Led Conservation Survey & Northwest Zone Public Local-Led Conservation Meeting
 - The Natural Resources Conservation Service and the Franklin, Grand Isle, and Lamoille County Conservation Districts are seeking your ideas to focus our outreach activities and cost share programs o...
- Next Meeting is Thursday June 2, 2022 @ 4:30 PM, maybe in person