

Woodstock Conservation Commission Special Meeting

Topic: Little River Water Quality and Implementation Actions Update.

Date: July 20, 2016

Time: 1 – 3 PM

Location: Woodstock Town Hall

Attendance: Bet Zimmerman Smith, Woodstock Conservation Commission (WCC) and Roseland Lake abutter; Grace Jacobson, WCC; Jean Pillo, WCC and Eastern Connecticut Conservation District (ECCD); Norm Rogers, Putnam Water Pollution Control Authority (WPCA); Pat Bernardo, Suez/Town of Putnam; Jean Cass, ECCD volunteer; Patrick Smith, ECCD volunteer and Roseland Lake abutter; Woodstock Residents: David Faist, Roseland Terrace and ECCD; Eric Thomas, CT DEEP Watershed Management Program; Eric McPhee, CT Dept. of Health (DPH) Drinking Water Division; Pete Semenych, Putnam Fish and Game Club; Maureen Marcoux, Northeast District Department of Health (NDDH); Sam Alexander, Northeast Connecticut Council of Governments (NECCOG), Rick Canavan, CME Associates; Marc Cohen, Atlantic States Rural Water and Wastewater Association (ASRWWA); Rick Harless, Roseland Park Caretaker; Delia Fey, Woodstock Town Planner.

Note: In addition to those present, the meeting notification was sent to the Woodstock Planning and Zoning Commission, Inland Wetlands Commission, Agriculture Commission, Open Space Land Acquisition and Farmland Preservation Committee, Board of Selectman, Department of Public Works, the Quasset Lake District, and the Putnam Town Manager and the Putnam Department of Public Works and WPCA.

Current Little River watershed water quality status:

The most recent Water Quality Assessment Report prepared by the CT DEEP is 2012. (The 2014 report is due for completion in the fall of 2016. The 2012 Report lists:

- Roseland Lake (Woodstock) as polluted with excess nutrients;
- Muddy Brook upstream of Roseland Lake, Peckham Brook and Little River (below the water diversion in South Woodstock) as impaired for recreation due to high Escherichia coli (E.coli) concentrations; and
- Muddy Brook in North Woodstock as impaired for aquatic life use support (ALUS).

Anticipated changes including the following:

- TLGV volunteer monitoring data submitted to DEEP will likely add Peake Brook to the list for high E.coli in the 2014 Water Quality Assessment Report.
- TLGV volunteering monitoring data confirmed that the Little River in Putnam is still not meeting water quality goals.
- Muddy Brook in North Woodstock may come off the DEEP list due to a lack of current data.

- North Running Brook had been listed as impaired for ALUS in previous reports but has been delisted after nutrient management projects were completed at an upstream farm.

The USDA Natural Resources Conservation Service (NRCS) has included Little River as a priority watershed in the National Water Quality Initiative program for several years. NRCS and their partners work with agriculture producers and landowners to implement voluntary conservation practices that improve water quality in high-priority watersheds while maintaining agricultural productivity. The goal of NWQI is to implement conservation practices in sufficient quantity in a concentrated area so that agriculture no longer contributes to the impairment of water bodies within these priority watersheds.

The Little River watershed north of the Putnam drinking water intake in South Woodstock is classified as a public drinking water supply watershed area. Industrial and sanitary waste water discharges are prohibited in this area. Therefore, all pollution is from non-point sources.

Several planning documents focused on water quality in Little River have been prepared:

- *2001 Woodstock Plan of Open Space and Conservation* (Woodstock Conservation Commission)
- *2006 Little River Sourcewater Protection Plan* (ASRWVA)
- *2009 Muddy Brook and Little River Water Quality improvement Plan* (ECCD)
- *2015 Woodstock Plan of Conservation and Development* (Town of Woodstock Planning & Zoning Commission)

Implementation of planning documents update:

TOWN OF WOODSTOCK

- Little River was granted greenway status in 2006 as a part of a resource conservation strategy. There has been a significant increase in dedicated open space in the watershed and along the river as a direct impact of that designation.
 - Wyndham Land Trust – Little River Greenway Preserve
 - Town of Woodstock was donated open space containing critical watershed land along Little River associated with the Senexet Village development.
 - Wyndham Land Trust – Zeelandia Preserve on the north end of Roseland Lake, 2 building lots on south east end off of Dunleavy Road.
 - Roseland Park – 9.8 contiguous acres donated with Muddy Brook frontage.
 - 30 acres on Roseland Park Road, contiguous to Roseland Park acreage, were purchased and are being managed as a private wildlife refuge.
- The Town of Woodstock created an Open Space Land Acquisition and Farmland Preservation Committee (OSLAC), and established an open space funding account.
- With assistance of the Woodstock OSLAC, 7 farms have sold their development rights within the Little River watershed upstream of the water treatment plant.

- The 2015 Woodstock POCD Update recommends incorporating LID methods in new construction which should minimize environmental impact as well as protect water quality.
- Woodstock Planning and Zoning Commission has updated the town zoning regulations. Zoning Regulations have incorporated stormwater pollution, soil erosion and sediment control regulations following the Best Management Practices such as Low Impact Development measures to minimize runoff and pollutants that create or exacerbate problems on or off-site and to retain stormwater in the vicinity of the development as much as possible which will help to recharge groundwater.
- Woodstock Subdivision Regulations require 50% of the buildable land go into conservation with a minimum building lot size of 0.75 acres but an overall density of 2.5 acres per dwelling in the overall subdivision or the alternative of a fee in-lieu of open space.
- The WCC participates in Celebrating Agriculture Day and tables an educational display annually.
- The WCC manages an educational website www.WoodstockConservation.org.
- The WCC reviews land use change applications for compatibility with A Plan of Open Space and Conservation and prepares recommendations for the Planning and Zoning Commission to consider as part of the information used to make their decisions.
 - The WCC developed a Development Review Checklist that the PZC requires be submitted with any land use change application, making developers aware of natural resources on the property prior to developing the land.

CTDEEP

- The CT DEEP DEEP Wetlands Habitat and Mosquito Management treated invasive *Phragmites* along the shores of Roseland Lake in 2004 – 2005 and retreated areas where *Phragmites* was making a comeback in September 2015.

NRCS

- The NRCS supported 8 nutrient management projects and assisted farmers to switch to healthy soil practices on 2500 acres of crop land in the last 10 years.

ECCD

- ECCD, with funding assistance from EPA Clean Water Act funds through the CT DEEP, has 6 completed nutrient management projects on farms and is in the process of completing a 7th project upstream of the Little River water treatment plant.
- ECCD has participated in numerous water quality and pollution prevention education events in Woodstock, including Celebrating Agriculture Day, a lake management workshop, rain garden workshops and has done guest presentations for Environmental Science Classes at Woodstock Academy and a Roseland Lake presentation at a New Roxbury Land Trust annual meeting.
- ECCD partnered with various organizations to install a rain garden/riparian zone on the stream adjacent to the Woodstock Golf Course.

TOWN OF PUTNAM

- The Town of Putnam removed the remnants of the dam at Murphy Park. The dam had previously impounded Little River and was used as a designated swimming area for decades until the flood in 2005 breached the dam.
- The Town of Putnam, as part of the Little River Water Diversion Permit, installed a stream flow gage downstream of the water treatment plant to monitor river flow and better determine when to switch to other water sources when flows reach certain triggers.
- The Town of Putnam installed a connection with the Connecticut Water to purchase water when needed to maintain stream flow in Little River below the water treatment plant diversion.
- The Town of Putnam developed more wells in their well field to use as an alternate source of water when needed.
- The Town of Putnam contracted with Suez to manage their drinking water treatment and sewage treatment plants.
- Suez is developing a Water Supply Plan for the Town of Putnam. Expected draft completion within a few weeks.

OTHER

- Aquatic Plant surveys were completed in Muddy Pond and Roseland Lake by the CT Agriculture Experiment Station.
- The Trustees of Roseland Park are improving land management around Roseland Lake.
 - Autumn leaf management practices have been improved (no longer blown into lake)
 - Invasive plant management at the north end of the park under an anticipated NRCS grant will allow for better stormwater management of that parcel
 - The Woodstock Golf Course is switching turf grass management practices at holes 1 & 2 to reduce nutrient loading into the unnamed brook that drains into Roseland Lake.
- A website at roselandlake.org was created by a local volunteer. It contains general information about Roseland Lake (including water quality and copies of relevant reports, and recommendations for improving water quality management.)

There are several ongoing and/or upcoming implementation projects in the watershed:

- ECCD is collecting current water quality data as part of a Roseland Lake Nutrient Loads Modeling Project. Current data will be used to develop a Roseland Lake and Watershed Management Plan.
- ECCD, working with UCONN, will be testing two types of Edge of Field water quality monitoring methods in Woodstock to determine if there is a more affordable method to determine nutrient and soil loss from a farm field.

- ECCD and NRCS will be cooperatively working on installing another nutrient management project on a farm in South Woodstock.
- The NRCS is continuing their Healthy Soil Initiative, including workshops to teach farmers the values both economically and environmentally of no-till farming and use of a variety of cover crops.
- Conn College (under Dr. Siver) involved in a study to determine impacts to algae distribution in Roseland Lake before and after copper sulfate treatments.
- The Town of Putnam is continuing efforts to expand and improve well fields (e.g., Manganese treatment, increase capacity) as an alternative public water supply source to Roseland Lake.

FOLLOW-UP: Special concerns/suggested future ACTION ITEMS to follow the meeting.

ALL

- There is a need to improve targeted education and outreach regarding riparian buffers along lake shores and streams.

TOWN OF PUTNAM:

- Timing of algaecide treatments in Roseland Lake and Shepherd's Pond should be carefully managed to maximize effectiveness and minimize algaecide usage and creation of additional layers of dead or dying algae that contribute to nutrient overload.
 - If treatment occurs during a blue green algae bloom, there is a potential to kill the cells and release a toxin into the water.
 - No measurements are taken before treatment to determine the type/concentration of algae prior to treatment. DPH has a program for water utilities to test water for cyanotoxins. It was recommended that Putnam follow up with DPH to learn more about this program and consider this monitoring, especially after algaecide treatments. DPH requires standard operating protocols be followed in collection and delivery of water samples to their lab in Rocky Hill.
 - Putnam should follow up with Solitude Lake Management to verify that copper sulfate treatment general permit requirements are being met (e.g., are they restricted to treating only ½ of the lake at a time?)
 - Putnam should arrange to have posting done/notification to abutters when Roseland Lake is being treated.
- Some farms are unable to participate in nutrient management projects because they cannot afford the cost share requirement for the project. To reduce costs at the water treatment plant, it may be more cost effective to reduce upstream pollution rather than pay increased treatment costs. Putnam may consider developing a "grant match" pool

of funding (e.g., via a surcharge to users as payment for ecosystem services) to support upstream water quality improvements.

- Preservation of undeveloped land upstream of the water treatment plant will also keep water treatment costs lower in the future as well as encourage stormwater infiltration into the ground. Groundwater levels impact stream flow. Putnam may consider the purchase of conservation easements (or land) on critical watershed land upstream of the water treatment plant as a means of maintaining base flow in Little River in drought periods.
- Suez will incorporate information obtained at the meeting into the Putnam Water Supply Plan.
- Complete annual watershed survey.
- Suez – representing the Town of Putnam, is part of the State of Connecticut Water Utility Coordinating Committee. They are involved with water assessments and water supply plans in exclusive service areas within 3 corridors in CT. The plan will emphasize more emphasis on environmental aspects. Woodstock has not been represented at these meetings and it was recommended the town send a representative.

ROSELAND TERRACE ASSOCIATION, Inc.

- Dave Faist offered to act as the communication liaison with the Roseland Terrace Community regarding Roseland Lake and water quality issues. They can serve as a conduit for information about vegetating riparian zones, etc.

NDDH:

- NDDH will continue to follow up on any septic system problems reported by homeowners.

CTDEEP:

- The CTDEEP will follow up on whether any user is pulling more than 50,000 gallons per day out of Muddy Brook (which requires a permit.)

CTDPH:

- DPH Drinking Water Division will continue to liaison with Woodstock and Putnam officials regarding regulations and potential assistance and will process water samples for cyanotoxins at the state lab in Rocky Hill on request. Most water treatment is likely to remove algae, but may not remove algal toxins. There is technology available that can do that.

ROSELAND PARK & GOLD COURSE:

- Roseland Park has offered to host future meetings of partners focused on water quality issues in the Roseland Lake watershed. No follow up meetings were planned at this

time, but ECCD will be organizing another meeting within the next 6 months after the water quality monitoring is complete and the Roseland Lake Management Plan has been drafted.

WCC & NECCOG:

- WCC GIS capabilities are out of date. The Town switched to using online GIS services through NECCOG. The open space layer on that site is out of date, and other layers used by the WCC Development Review Committee are not currently available on that site.
 - o WCC is updating the open space database (completion planned in 2016) and will be working with NECCOG to update the map.
 - o WCC hopes to be able to work with NECCOG to add additional natural resource layers on their GIS map for use during the DRC process (such as locally important ag soils)

WCC & ASRWVA:

- ASRWVA will be working with the WCC to develop aquifer overlay information and draft suggested land use regulations to protect water quality in the largest sand and gravel aquifer in town that underlies part of Little River in South Woodstock.

WCC:

- GIS Training using online sources will expand the number of WCC members and other town officials able to use the online tools while considering land use applications.
- Bet Zimmerman Smith will contact Roger Wolf of CTDEEP Wetlands Habitat and Mosquito Management department to inquire if follow up treatments for *Phragmites* can be arranged and if there is a cost for that treatment, and will provide a map of surviving stands.
- Improve interdepartmental communications with in the Town of Woodstock regarding open space and conservation goals.

Woodstock DPW:

- Review stormwater management from town roads.
- Address drainage (unmaintained swale along parking lot) from elementary school.

Meeting minutes (draft) were prepared by Jean Pillo and Bet Zimmerman Smith. These meeting minutes are not considered final until approved by the WCC.