

2025 STATE OF THE LAKE FORUM

September 16, 2025

Mill Brook Place, Coventry

Low Impact Development Panel

Lake Protection Strategies to Protect Water Quality

LOW IMPACT DEVELOPMENT PANEL

Lori Mathieu: Vice-Chair, Coventry Inland Wetlands Agency

- Introduce the mission of the Low Impact Development (LID) Work Group**
- Outline LID and Why its important for Coventry Lake and it's watershed**

Steve Trinkaus: P.E., Trinkaus Engineering, Southbury CT

- Highlight effective LID strategies for Lake water quality protection**

Savannah Kitchin: Zoning Enforcement Officer/Wetlands Agent, Town of Columbia CT

- Outline Columbia Lake watershed protection measures**

LID WORK GROUP

INFORMAL COLLABORATION: Volunteers, operating under Coventry Inland Wetlands Agency (IWA), launched in April 2025

MEMBERS: IWA; Planning and Zoning Commission; Conservation Commission; Lake Advisory & Monitoring Committee; North Central Conservation District; Dr. Robert Kortmann; Coventry Town Staff

ROLE: Analyze land use in Coventry Lake Watershed to propose LID strategies for its protection and preservation

VISION: Water quality of Coventry Lake and its Watershed will be protected and maintained at highest standards

MISSION: Seek adoption and implementation of effective Lake protection strategies, techniques and design criteria in Coventry land use planning

Low Impact Development

Lake Protection Strategies

Principles Focus - managing stormwater runoff and preserving natural features to maintain or restore the pre-development hydrologic regime

Mimicking Natural Processes – replicate natural hydrologic processing by managing rainfall at the source

Conservation of Natural Features – preserve existing vegetation and natural drainage patterns

Integrated Management Practices – use decentralized small-scale stormwater management practices integrating natural systems for infiltration

Sustainable Design – integrate green infrastructure and natural drainage systems

Collective Aim of Principles – Reduce the environmental impact of development in a lake watershed while enhancing lake water quality

How can Coventry be Proactive about Preventing further Coventry Lake Eutrophication?

- Can we decrease what Total Phosphorus (TP) falls from the sky on the lake from the atmosphere?
 - No, we can't. *BUT we can do things to prevent what falls from the sky on impervious surfaces from getting washed into the lake.*
- Can we decrease the Internal Load from the Sediments?
 - Yes, there are ways to do that. *BUT those actions are difficult, very costly, they require ongoing efforts (and costs), and they change the nature of the lake forever.*
- Can we control the Watershed TP Load?
 - Yes, that can be accomplished, BUT Will IT? Low Impact Development methods can help to control further eutrophication while respecting the reasonable use of private property.
 - First principle of Low Impact Development is to minimize disturbance of natural cover

* Slide Reference: Dr. Robert Kortmann, Coventry Land Use Forum presentation 6/30/25, "Low Impact Development Work Group", slide 15

Cumulative Impact

What is done on one 4/10 of an acre lot will not cause eutrophication.

BUT, multiply that by the hundreds of lots in the watershed. The “Cumulative Impact”.

“Cumulative Impact”

The Tragedy of the Commons describes a situation where individuals acting independently and rationally in their own self-interest deplete a shared resource. This occurs because the benefits of overuse are reaped individually, while the costs are shared by all.

* Slide Reference: Dr. Robert Kortmann, Coventry Land Use Forum presentation 6/30/25, “Low Impact Development Work Group”, slide 15

Steve Trinkaus, P.E.

Trinkaus Engineering, LLC

Effective LID Strategies to Protect Lake Water Quality

Savannah Kitchin

Town of Columbia Zoning Enforcement Officer and Wetlands Agent

**Town of Columbia's Low Impact Development Policies
& Regulations concerning the
Protection of Columbia Lake**

Columbia's Lake Management Advisory Committee (LMAC) and Development of Nutrient Allocation Plan (NAP)



LMAC was created in the 1990's, heavily involved in the creation of the Watershed Management Plan in 2000



Three watershed zones were identified as contributing stormwater to Columbia Lake

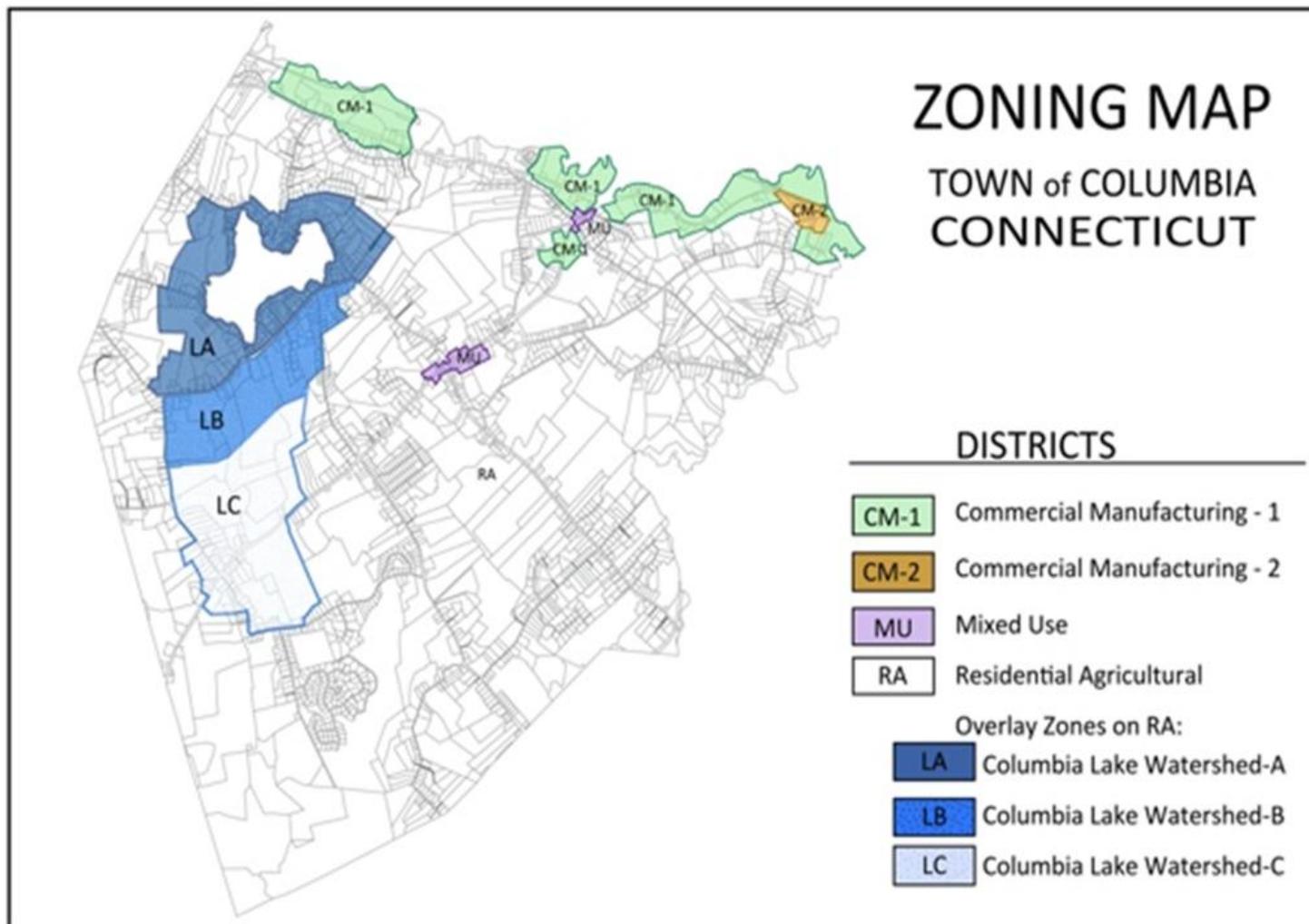


The Nutrient Allocation Plan uses Phosphorus coefficients to identify stormwater outputs and find Best Management Practices for mitigation.

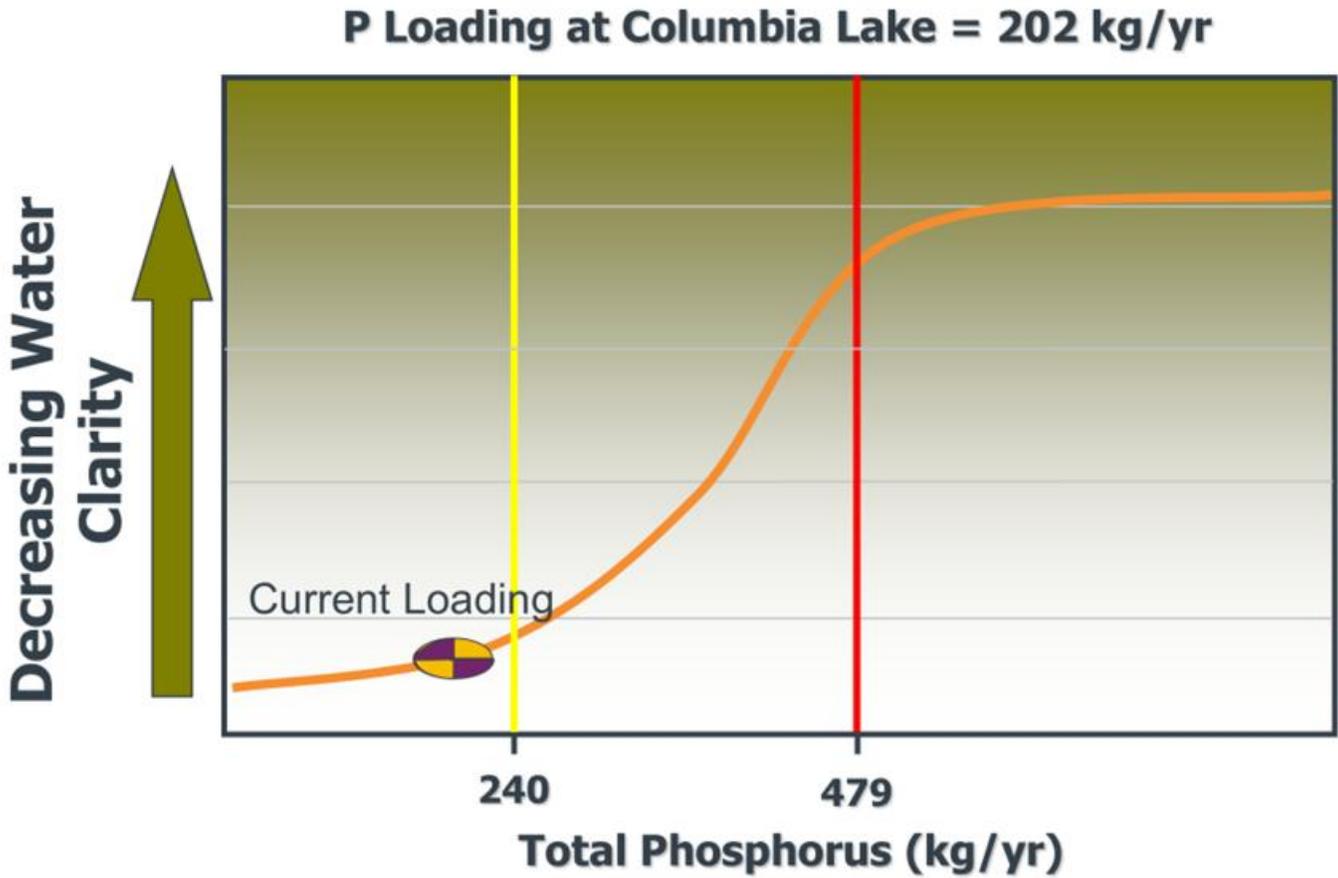


Future Plans: Reevaluate the Watershed Management Plan, monitor invasive species, consider a deep-water release pipe, implement education and boat inspection programs.

Town of Columbia Lake Watershed Zones



CURRENT ISSUE ~ Phosphorus Load Increasing



**Over 85%
from
stormwater!**

LID Panel Q&A

Thank You!

To receive periodic LID Work Group updates, please provide your email address

LID Webpage with related information:



<https://www.Coventry-ct.gov/179/Inland-Wetlands-Agency>