

Integrated Water Planning Management (IWPM) Updates: Water Quality Action Planning for Restoration and Protection of Connecticut Surface Waters

Water Quality Action Plans (WQAP) serve as a bridge to connect the Water Quality Standards (WQS), data, monitoring and other natural resource information to implementation through various DEEP programs including Permitting, Remediation, Non-Point Source Programs and Watershed Based Plans (Figure 1). Under the federal Clean Water Act, the 303(d) Program develops three types of Water Quality Action Plans. The primary planning tool of the 303(d) program is the development of Total Maximum Daily Load based plans (TMDLs) to restore and protect water quality.

TMDLs establish waste load and load allocations to restore water quality and can serve as a protection plan once standards are met. An Alternative Plan is a second type of restoration plan, where a direct to implementation approach can be used to address a water quality impairment through a Remedial Action Plan or a Permit. The last type of plan is a Protection Plan, which is developed to preserve water quality that is meeting Water Quality Standards in its current conditions.

Overview of Integrated Water Resource Management (IRWM 1)

The Environmental Protection Agency (EPA) and the States began a process called 303(d) Vision which was a 10-year planning approach that shifted the focus from the rate at which WQAPs were developed and focused more on state specific water quality priorities and using the right tool to restore or protect surface waters. CT called this approach Integrated Water Resource Management, now called Integrated Water Planning Management (IWPM).

In 2016, A workgroup within CTDEEP was initiated to gather various programs together to evaluate [EPA's Recovery Potential Tool](#) (RPS). Over 82 state specific indicators were created in house to represent the ecological, stressor and social water sources. Stressor indicators represented sources of potential pollution such as industrial discharges and sewage treatment plants impervious surfaces, and stormwater runoff. Ecological indicators included information that represented the health of fish and other aquatic life. Social values represented activities such as fishing, swimming, other recreation, and drinking water resources. All reports and documents can be downloaded from the [CT IWPM 1 webpage](#).

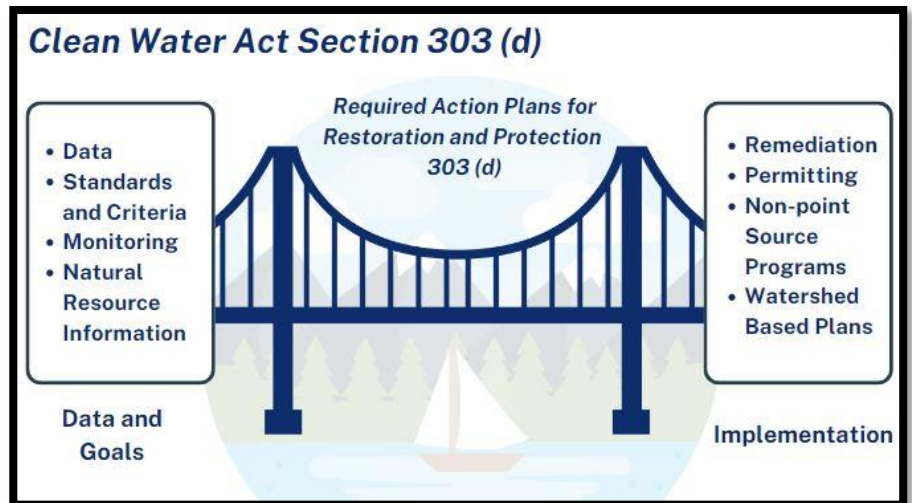


Figure 1. CT WQAP Bridge the Gap

This tool provided a basis for an impartial and analytical approach to identifying waters that would benefit from plan development. CTDEEP worked closely with existing / potential partnerships, active Environmental Groups and other stakeholders to choose priority topics and focus watershed areas using this methodology in IWPM 1.

After extensive outreach and public comment the final focus topics of IWRM 1 (figure 2) included:

- Protection Plan development
- Alternative Restoration Plan development
- Lake Nutrient TMDL development
- Embayment Nutrient Plan development
- Bacteria TMDL development

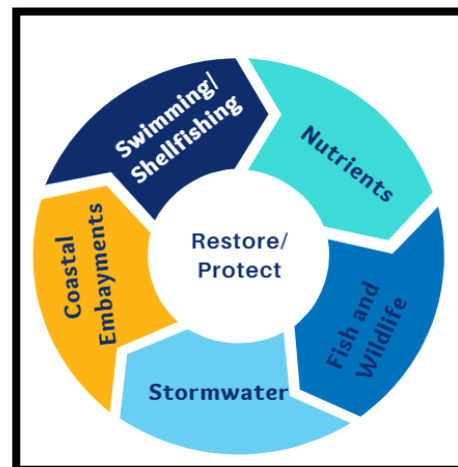
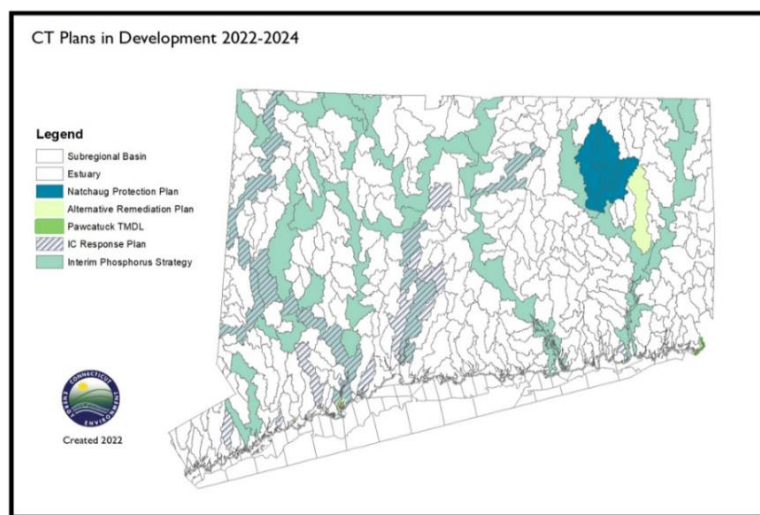
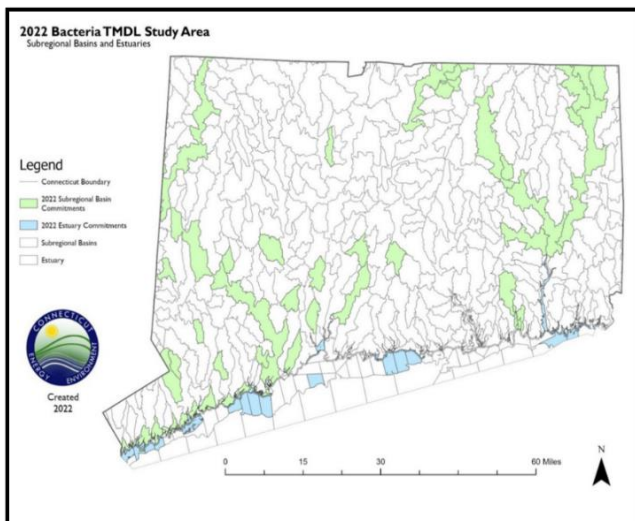


Figure 2. IWPM 1 Focus Topics IWPM

Current WQ Plans in Development under IWPM 1

The Water Quality Program has over 80 segments in TMDL development as well as several Alternative Restoration Plans (straight to implementation) including the Impervious Cover Watershed Response Plan (pollutants in urban stormwater), remediation projects on the Mill River (chromium and lead in sediment), Housatonic River (PCBs and metals), Little River, Papermill Pond, Versailles Pond for (PCBs and mercury), Stillman Pond (cadmium and PCBs in sediment), the Interim Phosphorus Strategy Implementation Plan. Additionally, work is in progress to update the Rainbow Brook and Seymour Hollow TMDL (ethylene and propylene glycol) and finally, development of the Natchaug Protection Plan, which is currently in internal review. Figures 3 and 4 identify those plans by watershed.



Figures 3 and 4. CT WQAPs IWPM 1

Stormwater and Non-Point Source Management

Under IWPM 1, CT DEEP developed a [Watershed Response Plan for IC](#) to bring awareness of the harmful impacts that stormwater can have on water quality. This included 16 appendices for watersheds where the impervious cover is over 12% or more and were chosen as examples of waterbodies that have been negatively impacted by impervious cover. [The Stormwater and Water Quality Webpage](#) houses the 169 Town Factsheets for CT municipalities that were developed to identify potential stormwater impacts to water quality for each individual town. The Water Quality Group worked with the CTDEEP Stormwater Permitting Group to include provisions in the permit to address the impacts from stormwater on water quality in surface waters in CT.

Environmental Justice Communities

Under IWPM 1 Water Quality Action Plans that were developed or drafted included an Environmental Justice (EJ) section which focused on areas of EJ concern, key landmarks (such as schools and parks), Distressed Municipalities, Low Income Area Census Blocks and Tribal Sovereign Lands. CT used federal EJ indicator information when selecting CT waters for plan development.

Swimming and Shellfishing

Under IWPM 1 Water Quality Action Plans were developed for swimming and shellfishing under the Statewide Bacteria TMDL. CT developed an all-waters approach where all waterbodies are covered under the bacteria TMDL regardless of their assessment status.

Nutrients in Lakes and Embayments

Under IWPM 1, The Water Quality Program established a translator for narrative nutrient criteria for lakes and embayments. A Statewide Nutrient TMDL was developed with the Bantam Lake TMDL as the 1st TMDL Appendix and included a Watershed Based Plan Addendum, which is a 9-element implementation plan. This plan is the first of its kind in CT. The Water Quality Program also worked closely with the Watershed Program to develop an approach to create embayment TMDLs for nutrients supporting Long Island Sound commitments for the Pawcatuck River and Little Narragansett Bay, the Mystic River, and Norwalk, Saugatuck, and Southport Harbors.

Fish and Wildlife Health

Under IWPM 1, The Water Quality Program focused on fish and wildlife toxicity and is updating a TMDL for Bradley Airport streams including Rainbow and Seymour Hollow Brooks for ethylene and propylene glycol. Additionally, there was collaboration with CTDEEP's Remediation Program on Ecological Risk Assessment projects that impacted surface water quality, including projects for Alternative Plan development for Stratford Army Engine Plant (Stratford), Exide (Fairfield), International Paper (Sprague), and the General Electric site in Bridgeport.

List of Relevant Webpages

- [CT Integrated Water Planning and Management Phase 1](#)
- [CT Integrated Water Planning and Management Phase 2](#)
- [CT Integrated Water Planning and Management Phase 2 Factsheet](#)
- [CT Total Maximum Daily Load](#)
- [CT Integrated Water Quality Report](#)
- [Environmental Protection Agency 303 \(d\) Vision](#)
- [CT Water Monitoring and Assessment Program](#)
- [CT Water Quality Standards and Classifications](#)

Resources

1. CTDEEP TMDL webpage: www.ct.gov/deep/tmdl
2. CTDEEP *Integrated Water Resource Management* webpage, <https://portal.ct.gov/DEEP/Water/Water-Quality/Integrated-Water-Resource-Management>
3. EPA TMDL Vision CWA Section 303 (d) webpage, <https://www.epa.gov/tmdl/new-vision-implementing-cwa-section-303d-impaired-waters-program-responsibilities>
4. Link to the *Connecticut Water Quality Standards*: https://portal.ct.gov/-/media/DEEP/water/water_quality_standards/wqsfinaladopted22511pdf.pdf