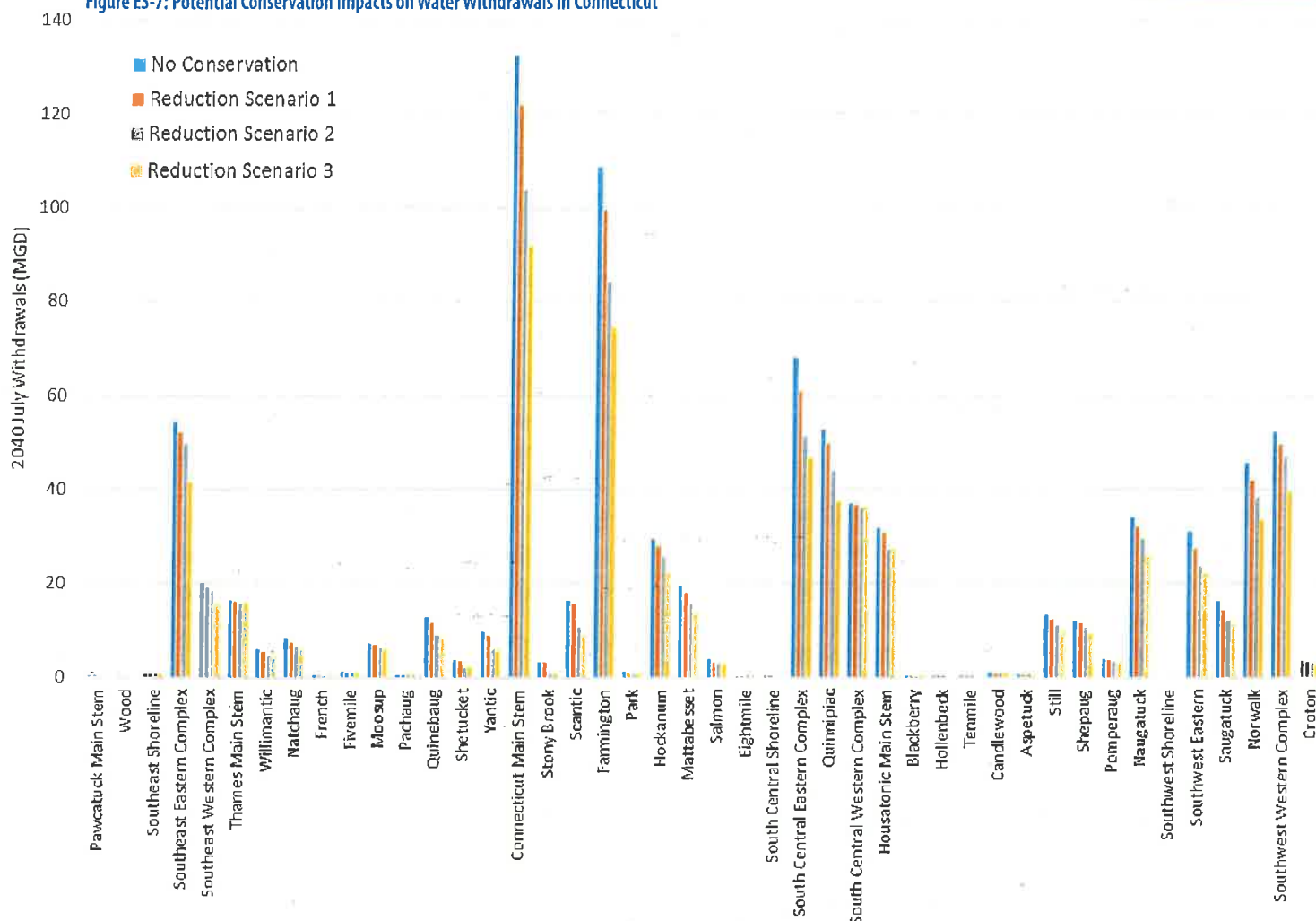


Figure ES-7: Potential Conservation Impacts on Water Withdrawals in Connecticut



- Evaluation of coastal flooding frequency, duration, and depth based on storm surge patterns and sea level rise.
- Evaluation of potential impacts to water supply in specific basins known to be at risk of not satisfying all future water needs (per the information in this report).
- Evaluation of potential longer-term climate trends, extending 50 or 100 years into the future – not as predictions, but as a way to bound the ranges of possible conditions for which adaptive and preemptive measures can be taken.
- Follow a growing nationwide trend of formulating preemptive responses to ANY future climate trend (sometimes referred to as “no regret” decisions), which will yield benefits regardless of the way the climate trends at low cost and

low risk. Examples may include system-specific drought indicators, early warning systems for floods, incentives for green infrastructure to promote recharge, reduce runoff peaks, and help control nonpoint source pollution.

Water Conservation: The technical analysis also estimated upper bounds on expected opportunities to conserve water in each basin, based on basin demographics, historic use patterns, and national standards for potential water savings over time through fixture replacement, tighter plumbing codes, and active response to drought conditions in the summer. Results are presented and discussed in Section 3.1.3. Figure ES-7 illustrates upper limits of potential reductions in water withdrawals for out-of-stream uses under three potential conservation scenarios; current federal guidelines for indoor water conservation (Scenario 1), aggressive conservation measures for indoor water use (Scenario 2), and

aggressive indoor conservation measures coupled with 20% reduction in outdoor water use in the summer (Scenario 3). Results suggest that water conservation could be an effective management tool to improve the balance between instream and out-of-stream water uses in basins where this balance may be difficult to achieve. The analysis focused only on household water conservation, and did not attempt to estimate savings in other uses, such as industrial, energy, agriculture, etc.

Policy and Water Management Background

To establish a platform for the recommendations in this Plan, Sections 2.2 and 3.2 of this report offer overviews of current programs, initiatives, regulations, and responsibilities for water management in Connecticut, as well as options for future water management strategies and the challenges that must be overcome. These overviews, originally presented and posted to the WPC website as

Table ES-2: Future Water Management Options to Help Achieve the Plan's Goals

Category	Options
Policy and Planning Options	Land use practices and protection
	Water conservation, incentives, rate structures
	Incorporation of existing local and state plans, such as water supply, energy, land conservation, etc.
	Regionalization of water supply and appropriate interconnections
	Identify funding mechanisms for Plan implementation and updates
	Develop monitoring plan for Plan implementation
	Statewide drought planning and mechanisms to enforce water restrictions
	Future Class B water for non-potable uses
	Water use accounting
	Groundwater and private well monitoring and protection
Technology Options	Technology and facility improvements/replacement
	Water Reuse and Greywater use
	Wastewater management
	Stormwater management
	Desalination
	Flood management
	Leak detection
	Real-time flow monitoring
Regulatory Options	Address registered diversions
	Implement instream flow regulations
	Changes to laws / regulations
Outreach Options	Public Education – Short and Long Term

individual white papers, are provided both to help educate readers, and to help evaluate how future water management can best be accomplished. Section 2.2.1 offers insight into the following:

- The roles and responsibilities of the four state entities who collectively manage and regulate water in Connecticut (DEEP, DPH, OPM, and PURA), as well as areas of overlap in their responsibilities. Like many states, Connecticut relies on more than one agency to regulate water management activities. The current regulatory framework for water management includes certain roles that function toward different objectives, and toward the overarching goal of the Plan, which is to satisfy all current and future water needs.
- The structure of the Water Planning Council and its supporting committees and work groups, all of whom are tasked with orchestrating the development of the State Water Plan
- Current water management programs in the state and the organizations responsible for their oversight.

This report also describes current land management practices and how they relate to water policies, watershed protection, aquifer protection, etc. Section 2.2.2 is devoted to this topic, as a platform from which to evaluate future management opportunities. Ultimately, water and land management policies are intrinsically linked in Connecticut: some water management policies and programs affect land management, and some land management policies and programs affect water management.

Section 3.2.1 offers an overview of the water management options identified by statute and by stakeholders for consideration in future decisions (see Table ES-2). Coupled with these options are the challenges that Connecticut will face when deciding upon and implementing new water strategies, and these challenges are discussed as contextual background in Section 3.2.2, and listed below in Table ES-3.

Table ES-3: Future Water Management Challenges

Overarching Challenges Inherent in the Connecticut Regulatory Framework* (Section 1 of this Report)	Challenges Unique to Certain Water Uses or Sectors* (Section 2 of this Report)
Connecticut's Established Home Rule	Water Allocation (registered diversions, small unreported uses, etc.)
Levels of Authority during Plan Implementation	Adoption of Instream Flow Requirements as an Ecological Water use
Connecticut's Prohibition of Class B waters for human consumption	Public Water Supply Issues (Coordination with WUCC process, Barriers to regionalizing small supplies, changes in future consumption)
Public Perception and Uncertainty (including lack of a "conservation ethic" in Connecticut)	Watershed and Groundwater Protection Where Incentives are Lacking
Funding Constraints	Water System Vulnerabilities and Security Issues
Data Gaps	The Food-Energy-Water Nexus
Understanding Economic Impacts	Emerging Contaminants
	Aging Infrastructure
	Funding for Water Reclamation
	Constraints on Water and Sewer System Expansion

*The Challenges are not presented in any specific order of importance, and this report explains that many of these challenges also have beneficial histories that will extend into the future for the benefit of Connecticut's citizens and environment.

New Policy Recommendations

With the above information as background, stakeholders formulated policy recommendations aimed at guiding future legislative, regulatory and planning decision for water throughout the state. These recommendations do not solve all of Connecticut's water problems, nor do they elevate or diminish the value of any particular water use relative to other uses. Rather, these policy recommendations should become guiding principles in future decision making for:

- Future water legislation
- Future regulations on water allocation and management
- Future decisions on specific water projects
- Future activities to help keep Connecticut's water planning process thorough, consistent and data-driven

The policy recommendations in this plan are presented in Section 5.2. They were drafted, reviewed, revised, and agreed upon by the WPC Policy Subcommittee under the guidance of the Plan's consulting team. They were all drafted in response to stakeholder directives from the series of workshops conducted during the one-year planning process. Their themes are listed in no particular order of priority or importance, and include the following:

- Land Use Practices and Protection Related to Water
- Water Quality Impacts of Land Use
- Water Conservation
- Consistency with Existing State Plans (for example, the State Plan of Conservation and Development)
- Monitoring for Plan Implementation
- Agricultural Practices
- Unused Registered Water Diversions
- Implementation of Minimum Stream Flow Regulations
- Outreach, Education and Public Engagement
- Regionalization of Water
- Class B Water for Non-Potable Use
- Data
- Coordination with Water Utility Coordinating Committees (WUCCs)

A separate policy paper was drafted for each of these themes (See Section 5.2.3). Each paper includes many specific recommendations, from which the Policy Subcommittee culled the following suggestions as the most important policies for focus within the next several years as the Plan is introduced:

Top 10 Consensus-Based Policy Recommendations:

1. Water management should follow scientific examples.
2. As possible, remove obsolete water registrations.
3. Encourage innovation in agricultural water practices.
4. Water data (or access to it) should be centralized in a single database and/or portal to other sources.
5. Consider Class B Water for individual non-potable uses if environmentally prudent and cost-effective, using guidelines to be developed by the WPC for review of Class B water for non-potable uses using the Triple Bottom Line philosophy (environmental, social, and economic metrics).
6. Develop an education and outreach strategy focusing on water conservation topics.
7. The WPC should provide ongoing review of other Connecticut state plans in order to identify and address inconsistencies.
8. Encourage regional water solutions where they are practical and beneficial.
9. Reaffirm support for the protection of Class I and II land contributing to water supply. Expand protections to other watershed lands and land that feeds aquifers used for public water supply or by private wells.
10. Create a data-based water education program aimed at the general public and municipal officials.

Pathways Forward for Continuing Discussion

Not all water issues were resolved (or expected to be resolved) by stakeholder consensus during the one-year planning process. Those that were are listed and explained with policy recommendations in Section 5.2. Issues for which consensus requires additional work before recommending policies that are mutually agreeable to the Water Planning Council member agencies and their stakeholders are discussed in Section 5.3.

Planning is an ongoing process. Many issues identified by the State Water Plan statute or by stakeholders during the planning process yielded productive dialogue, but not necessarily a clear consensus on policy recommendations. Rather, needs were identified for additional information, possible partnerships, and opportunities for facilitated consensus-building before recommendations can be made with broad stakeholder support. For each of these issues, the State Water Plan has prepared a series of Next Steps, or “Pathways

Forward,” which are intended to help the WPC and its stakeholders advance each unresolved issue closer to consensus. Even if consensus cannot be fully achieved, these next steps could help educate decision makers on the benefits and disadvantages of future water management strategies, so that legislative and regulatory decisions can be more informed than they would be today.

The next steps are offered as suggested ideas, to be advanced or initiated at the discretion of the WPC based on its priorities and available resources. None of the suggestions are mandates or requirements, and they do not represent recommendations for changes in policies, laws, or regulations. They are intended to serve only as menus of ideas that can improve the clarity with which the WPC advances (or elects not to advance) these issues in the future.

For each issue that requires additional steps if consensus is to be reached, the Pathways Forward include 3 types of recommendations:

- **Additional Information Needs** – intended to provide stakeholders with more complete data, opinions, case studies, and impact assessments with which to continue the dialogue.
- **Possible Partnerships** – which may provide both an impetus and a mechanism for accomplishing fact-finding, pilot studies, or even implementation of progressive water management techniques.
- **Opportunities for Consensus Building and/or Communication** – intended to gather public input and support, or facilitate formal dialogue between stakeholders or interested participants in an implementation effort.

Unlike the policy recommendations, where the intent is for the legislature to adopt the draft policies as guiding principles for future laws and regulations, these next steps are suggested

opportunities specifically for the Water Planning Council. As needed, legislative authorization and/or funding may be needed to take certain steps. In other cases, the intent of these steps is that they be implemented under the authority and discretion of the Water Planning Council. They are intended to serve as reasonable opportunities that the Water Planning Council could undertake in the future to clarify certain issues or draw stakeholders closer to consensus for future policy recommendations.

Some of the issues that require further information and outreach are also included in the recommended policies. This is because the approach to certain aspects of these issues was agreeable to the stakeholders, while other aspects require more time and information. The list of Pathways Forward topics, included in Section 5.2, are listed in Table ES-4.

Table ES-4: Categorization of Pathways Forward

Theme	Category	Specific Options and Challenges	
Water Management Options	Policy and Planning	Conservation and Incentives	Developed with Stakeholders (Section 5.3.2.1)
		Regionalization and appropriate interconnections	
		Identify funding mechanisms for Plan implementation	Developed with WPC (Section 5.3.2.2)
		Statewide drought planning	
		Future Class B water for non-potable uses	
		Water use accounting	
	Technology	Groundwater and private well monitoring and protection (grouped with Watershed/Aquifer protection, below)	Grouped into "Overcoming Future Challenges" (Section 5.3.2.3)
		Technology and facility improvements/replacement	
		Water Reuse and Greywater Use	
		Wastewater management (combined with Reuse, above)	
		Stormwater management	
		Desalination	
	Regulatory	Flood management	
		Address registered diversions	
Future Challenges	Inherent in CT Reg. Structure	Changes to laws / regulations	
		Levels of authority for implementation	
	Specific to Certain Uses	Understanding Economic Impacts	
		Watershed/aquifer protection where incentives are lacking	
		Vulnerability and security issues	
		Food-Energy-Water Nexus	
		Emerging contaminants	
		Aging infrastructure	
		Constraints on system expansion	
		Climate Change	
		Water Quality Impairments	

Plan Implementation

Lastly, Section 6 of the Plan offers guidelines for implementation. These include an enabling framework that allows the WPC to make decisions on recommending or implementing next steps, seek funding, and formulate new policy recommendations for legislative or regulatory consideration. The guidelines also offer suggestions for ways in which the WPC can effectively work to resolve ongoing water conflicts in the future, whether the conflict is localized or universal throughout the state.

Funding

Section 6 also provides a comprehensive list of possible funding sources for Plan Implementation, including both state and federal programs and their potential relevance to the recommendations in this Plan as it moves forward. A table of examples is also provided, which shows how specific recommendations for water conservation may qualify for certain funding programs.

Tracking Progress

Section 6 also offers guidelines for tracking the implementation of the Plan against its own goals and the 17 requirements of the originating statute (see earlier text box). The Plan addresses in some way all 17 of the requirements, but full satisfaction of the intent of the statute will come partially through the implementation phases of the Plan, not just the planning process to date. To enable this, the Plan should serve as a unifying platform for scientific information, guiding principles, and roadmaps toward consistent future decisions.

Future Roles of the Water Planning Council

To date, the Water Planning Council has been tasked by statute to oversee the development of the State Water Plan. To effectively implement the Plan by promoting consistent use of its data and recommendations, the WPC has proposed that its future roles include:

- Early Review of Proposed Water Legislation: WPC can help move legislations forward in three ways:
 - Offer consensus support from the four member agencies
 - Suggest clarifications using the Plan's information
 - Recognize potential conflicts or disagreements early so that they can be addressed
- Develop proposed legislation as needed
- Hire a Water Plan "Chief" to oversee the implementation of the Plan and serve as a liaison between the WPC, public, and legislature.
- Offer three forms of conflict avoidance and resolution:
 - Mediation using a non-regulatory appointee
 - Non-binding arbitration for willing parties
 - Binding arbitration for willing parties or as deemed necessary by the legislature
- Seek and secure funding for the Plan's recommendations
- Prioritize and initiate next steps outlined in the Plan
- Potentially add a fifth non-regulatory member to the WPC to avoid tie votes
- Obtain statutory authority as necessary for:
 - Implementation when funding is available,
 - Appointment of a mediator and a Water Plan Chief
 - Arbitration authority at the discretion of parties in conflict.
- Continue to oversee the subcommittees if necessary (the Water Planning Council will determine the necessity and frequency of meetings for the Policy and Science and Technical Subcommittees, though the Advisory Group will continue forward, likely with additional members):
 - Policy Subcommittee, on issues pertaining to future legislation and additional policy recommendations that may result from future consensus building

- Science and Technical Subcommittee, on issues related to basin evaluation and modeling, counsel on data collection, use, and access, etc.
- Advisory Group, on issues pertaining to Plan Implementation

Possible Legislation

The Plan does not recommend specific legislation, but its policy recommendations are intended to help formulate consistent future legislation aimed at preserving and improving the balance of water uses throughout the state. Several examples of potential legislation that stakeholders envision might arise from the implementation of the Plan include:

- Retiring obsolete diversion registrations determined not to be needed now or in the future
- Water conservation laws or incentives in concert with ongoing utility initiatives
- Private well testing program
- Statutory authority for the Water Planning Council, as outlined above

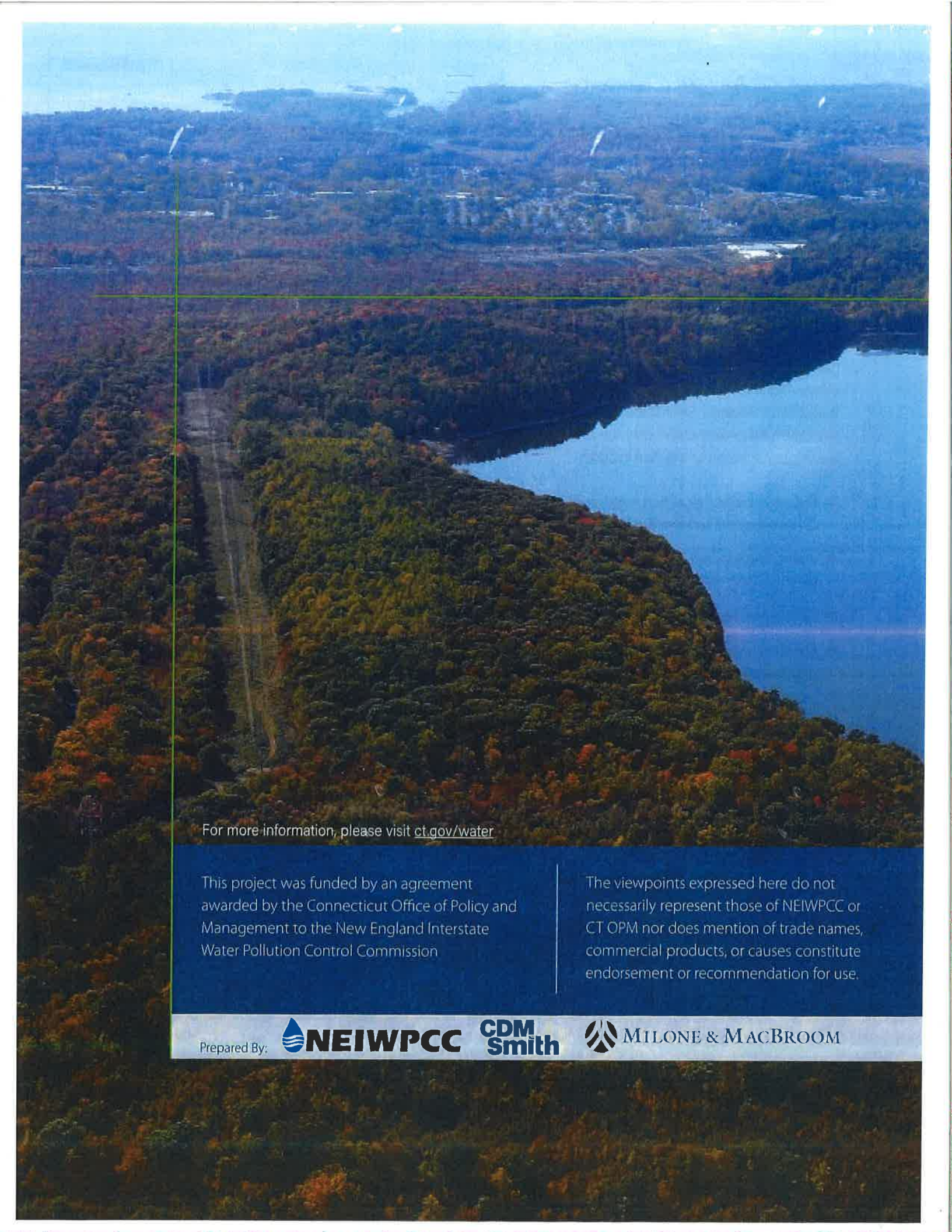
Near-Term Steps (within the first several years)

The Plan recommends the following near-term steps toward implementation (suggested within the next few years, but clearly dependent on available time and resources):

- Consider the hiring of a Water Plan Chief to oversee all aspects of Plan implementation and help ensure consistent interpretation of its information and recommendations.

- Begin outreach program, especially to parties who did not participate actively in the development of the Plan, including municipal officials, state lawmakers, etc.
- Identify basins for which simulation modeling could help improve the balance of water uses (possibly from the high-priority basins identified in the Plan), and identify funding mechanisms for initiating basin studies. A recommended tool (SWAM) or similar software modeling tools, as well as an example of how simulation modeling can effectively evaluate state-wide policies within the regional basins at a more local level is included in Section 3.1.6).
- Consider the establishment of volunteer River Basin Commissions (as needed, and only where existing basin-wide groups, regional planning authorities, or COGs do not purport to function at the desired scale) to prioritize local issues in river basins and apply the data and principles in the Plan to recommend action to the WPC (following examples from other states)
- Formulate plans for centralized data portal and assign this to a specific agency or organization
- Seek funding for policy recommendations that require financial support (outreach, data collection and consolidation, etc.)
- Review the Plan recommendations to determine if and when to propose specific legislation. This may involve briefings with law makers and/or collaborative working sessions.

The Plan should serve as a unifying platform for scientific information, guiding principles, and roadmaps toward consistent future decisions.

An aerial photograph showing a dense forest of trees with autumn foliage in shades of green, yellow, and orange. A road or path winds through the forest, leading towards a body of water on the right. In the background, there are rolling hills and some distant buildings under a clear sky.

For more information, please visit ct.gov/water

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The viewpoints expressed here do not necessarily represent those of NEIWPCC or CT OPM nor does mention of trade names, commercial products, or causes constitute endorsement or recommendation for use.

Prepared By:



MILONE & MACBROOM

Draft: Farm Text Amendment 9-20-17

Sponsored by: E.L. Conservation of Nat. Resources Comm.

Definition:

1.24 Farm- Except as otherwise specifically defined, the words “agriculture” and “farming” shall include cultivation of soil, dairying, forestry, raising or harvesting any agricultural or horticultural commodity, including raising, shearing, feeding, caring for, training and management of livestock, including horses, bees, poultry, animals and wildlife, and the raising or harvesting of oysters, clams, mussels, other Mollusca shellfish or fish; the operation, management, conservation, improvement or maintenance of a farm or its buildings, tools and equipment, or salvaging timber or cleared land of brush or other debris left by a storm, as an incident to such farming operations; the production or harvesting of maple syrup or maple sugar or any agricultural commodity, including lumber, as an incident to ordinary farming operations or the harvesting of mushrooms, the hatching of poultry, or the construction, operation or maintenance of ditches, canals, reservoirs or waterways used exclusively for farming purposes; handling, planting, drying, packing, packaging, processing, freezing, grading, storing or delivering to storage or market, or to a carrier for transportation to market, or for direct sale any agricultural or horticultural commodity as an incident to ordinary farming operations, or, in the case of fruits and vegetables, as an incident to the preparation of such fruits or vegetables for market or for direct sale. The term “farm” includes farm buildings, and accessory buildings thereto, nurseries, orchards, ranges, greenhouses, hoop houses and other temporary structures or other structures used primarily for the raising and, as an incident to ordinary farming operations, the sale of agricultural or horticultural commodities. The term “aquaculture” means the farming of the waters of the state and tidal wetlands and the production of protein food, including oysters, clams, mussels, and other molluscan shellfish, on leased, franchised and public underwater farm lands.

25.5 TABLE OF MINIMUM CONTROLS:

Agricultural or Farm / All Rural Residential Districts

1. Use shall be on a lot not less than two (2) acres.

Farm Events accessory to Agricultural or Farm Use RU-40, 80 + 120

1. A Farm owner or operators of a farm to Agricultural or Farm Use having more than TEN (10) acres of land may obtain a Special Permit to conduct the allowable Farm Events set forth as follows:

2. a. Dinners At The Farm: A Farm dinner event with a maximum of 200 persons that occurs for no more than five (5) nights per calendar year, subject to the requirements set forth below.

b. Farm Education Events: Small events, classes and dinners with a maximum of twenty-five (25) persons that occur a maximum of twenty (20) times per calendar year subject to the requirements set for below.

c. Agri-tourism Events: accessory use activities to include: indoor and outdoor acoustic and light amplified music/entertainment, movies, fundraisers, apple and berry picking, trail rides, field trips, instructional classes, educational events and farm to table dinners.

3. General Provisions Applicable to Farm Events.

a. Events shall be limited to the areas as shown on an approved Special Permit, or ANNUAL SPECIAL PERMIT, including outdoor and indoor areas of the Farm Property.

b. In no case shall the activities be conducted closer than 350' TO A NEIGHBORING DWELLING NOR 150' FROM A NEIGHBORING PROPERTY LINE.

c. All outdoor activities shall cease no later than 10:00 pm., EXCEPT AS PROVIDED HEREIN.

d. Outdoor lighting shall not shed light beyond the boundaries of the subject property.

e. No two Farm Events will take place simultaneously with each other.

f. The Farm Events must cease operation and the special Permit shall terminate should the Agriculture and Farm use cease on the property.

g. The following limits shall apply to events:

i. PROPERTY of 5-20 ACRES SHALL HAVE A 50 PERSON MAXIMUM;

ii. PROPERTY GREATER THAN 20 BUT LESS THAN 50 ACRES SHALL HAVE A 100 PERSON MAXIMUM;

iii. PROPERTY OVER 50 ACRES SHALL HAVE A 200 PERSON

MAXIMUM;

iv. FOR FARMS THAT WILL HAVE OUTDOOR MUSIC EVENTS AN ANNUAL SPECIAL PERMIT IS REQUIRED.

4. Dinners at the Farm.

A. Following issuance of a Special Permit, a Farm owner or operator may host a Dinner at the Farm event which may be held for a maximum of FIVE (5) NIGHTS.

b. The maximum number of guests at a Dinner at the Farm shall not exceed two-hundred (200) persons.

c. A designated off-street Parking area, which is temporary in nature, of sufficient size and suitability to accommodate the maximum number of persons attending the Dinner at the Farm event shall be provided and shall be shown on the Special Permit. Such Parking Areas may be sited on an adjacent property with written consent of the property owner.

d. Tents and portable restrooms may be utilized on the grounds.

e. Outdoor amplification of music shall be LIMITED AT THE DISCRETION OF THE ZONING COMMISSION BUT SHALL NEVER EXCEED FIVE (5) EVENTS PER YEAR AND SHALL BE LIMITED TO 10:00 a.m. - 9:30 p.m.

f. Non-musical outdoor amplification shall cease by 10:00p.m. and shall be subject to the provisions of the town of EAST LYME noise control Ordinance, as may be amended from time to time.

5. Farm Educational Events

a. A Farm owner or operator may obtain a Special Permit to host Farm Education and Health and Wellness Events, such as cooking classes, seminars, programs, Farm to Table Dinners, movies at the Farm up to a maximum of twenty (20) Farm Educational Events per year.

b. The maximum number of guests at an event shall not exceed twenty five (25) persons.

c. A designated on-site, Off-Street Parking Area shall be shown on the approved Special Permit.