

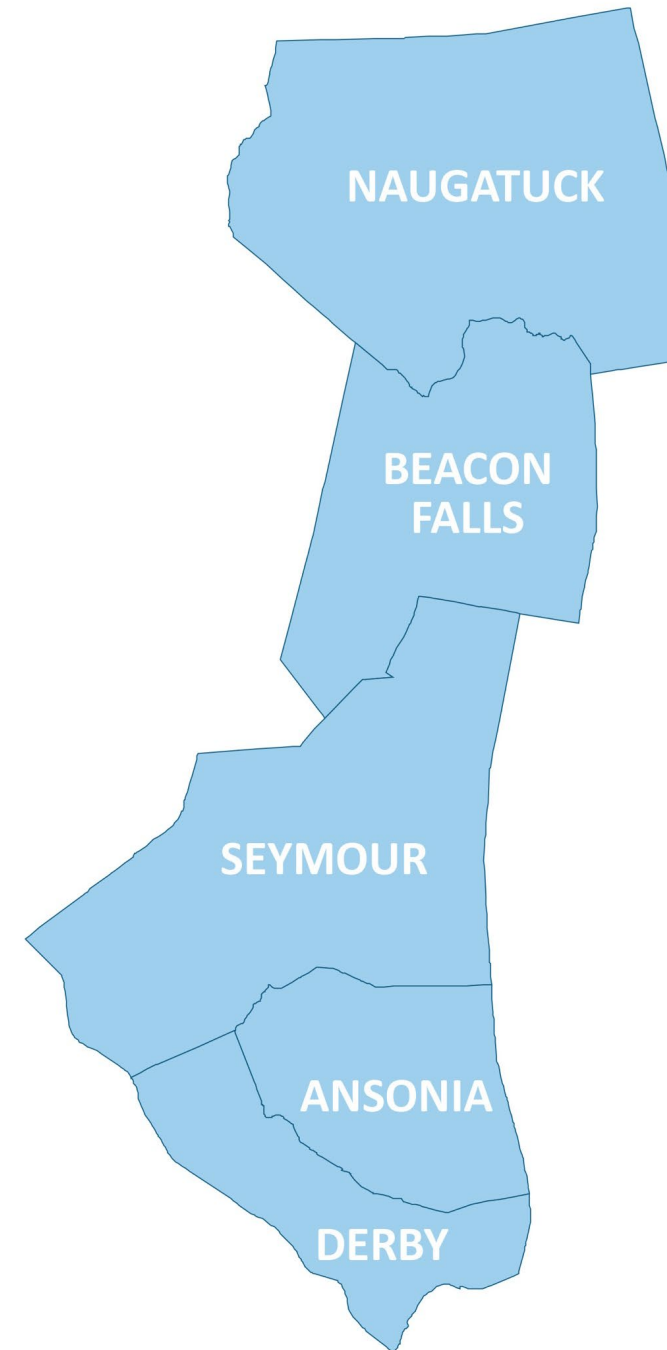
Regional Wastewater System Study

Naugatuck Valley Council of Governments

Workshop #3: Financial Analysis

November 9, 2021

EDWARD J. COLLINS, JR. CENTER FOR PUBLIC MANAGEMENT
JOHN W. McCORMACK GRADUATE SCHOOL OF POLICY AND GLOBAL STUDIES
UNIVERSITY OF MASSACHUSETTS BOSTON



Agenda

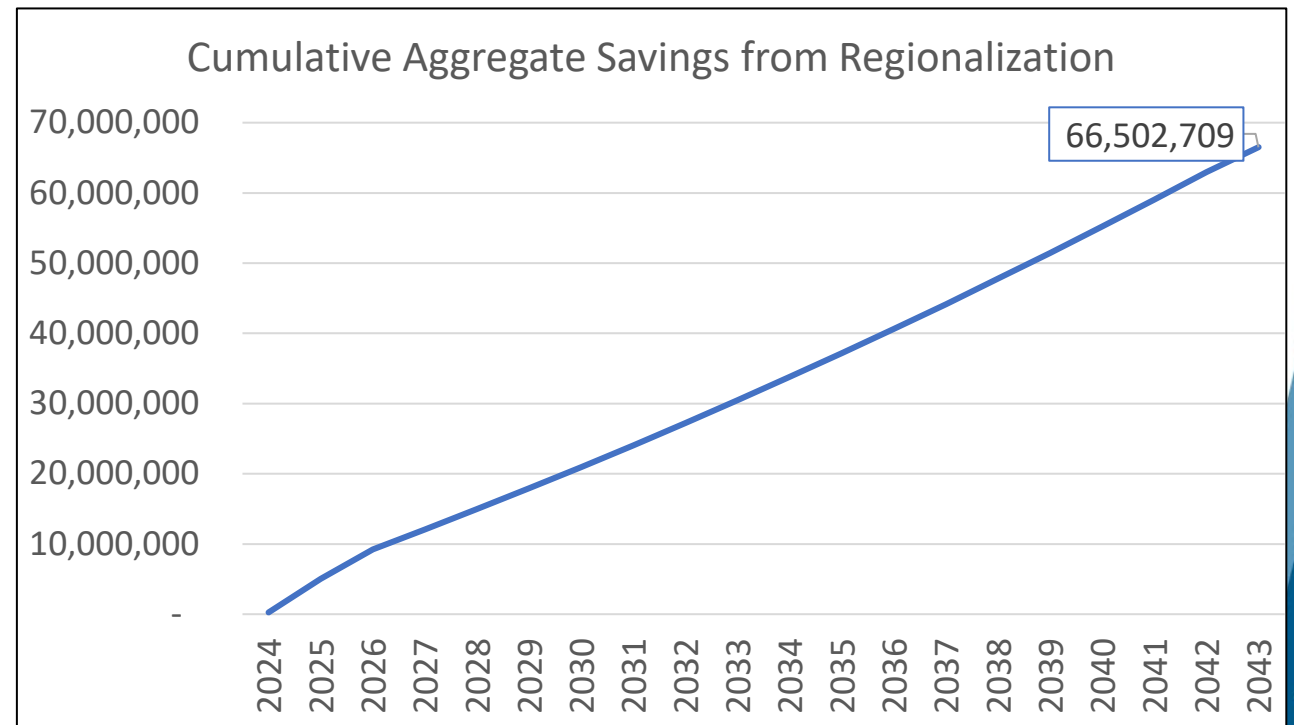
- *Review financial analysis*
- *Discuss cost allocation methodologies and recommendations*
- *Discuss rate structures/rate design and projected user-level costs*
- *Review next steps in the process of developing the financial agreement*

Background

- *Collins Center work began in May 2020, to make recommendations for an ownership model and governance model, as well as to develop the financial analysis to assess whether regionalization is a net positive for each municipality and user-level impacts*
- *Workshops with stakeholders were held in October 2020 and June 2021*
- *A working meeting with finance officials was held in July 2021*
- *A working meeting with CEOs was held in October 2021*

Regionalization Saves \$66.5M over 20 Years

- *Our findings echo B&V's findings that regionalization saves money*
- *Our analysis differs from B&V's Present Worth Cost Comparison*
 - *Shows costs each year for the study period*
 - *Includes different O&M costs*
 - *Includes all existing debt service*
 - *Amortizes new proposed debt to calculate annual debt service*
 - *Adds a non-infrastructure capital cost (3% of annual O&M)*
 - *Costs are not reported in the aggregate, but rather are allocated to the municipalities*



Cost Allocation Methodologies

While regionalization saves money in the aggregate, to determine the cost to each municipality, costs have to be allocated. There are many ways to do this.

Examples:

- 1. Mattabassett District: O&M costs allocated based on five-year average flow. Capital costs allocated based on each member's reserved plant capacity.*
- 2. Mass Water Resources Authority: O&M costs allocated based on three-year average flow with adjustments for strength of flow. Capital costs allocated based on combination of:*
 - Three-year average peak month flow and average concentration of TSS and BOD*
 - Proportion of population of the community that is served*
 - Proportion of the community's Census population to the total Census population of the system*
- 3. Mansfield-Foxboro-Norton District: Operating costs are coded as either flow-variable or semi-fixed. Flow-variable costs are allocated based on average flow. Semi-fixed operating and capital costs are allocated based on reserved plant capacity.*

Cost Allocation Methodologies

Who ultimately decides how costs are allocated?

- The Collins Center modeled two scenarios as a starting point*
- The member municipalities should negotiate to define a cost allocation methodology that is acceptable to all*
- The agreed-upon methodology should be defined in the regional by-laws or a separate formal agreement*

Cost Allocation Scenarios

Scenario 1:

- *All costs, including O&M and capital, are allocated based on proportion of B&V's total estimated annual flow*

Scenario 2:

- *O&M costs, Treatment & Conveyance capital, and Pay-As-You-Go capital (e.g. vehicles, equipment, etc.) are allocated based on proportion of B&V's total estimated annual flow*
- *Collection & Pumping capital costs are allocated based on municipal borders*

Cost Allocation Scenarios

	<u>Scenario 1</u>		<u>Scenario 2</u>	
	Total FY24-FY43	Total Savings (Cost)	Total FY24-FY43	Total Savings (Cost)
Ansonia, Derby, & Seymour				
Base Cases	328,776,576		328,776,576	
RA5b - Full Ownership	262,273,867	66,502,709	262,273,867	66,502,709
Ansonia				
Base Case	102,810,149		102,810,149	
RA5b - Full Ownership	104,740,350	(1,930,202)	97,051,738	5,758,410
Derby				
Base Case	143,054,654		143,054,654	
RA5b - Full Ownership	90,368,858	52,685,796	100,787,344	42,267,310
Seymour				
Base Case	82,911,773		82,911,773	
RA5b - Full Ownership	67,164,658	15,747,115	64,434,785	18,476,989

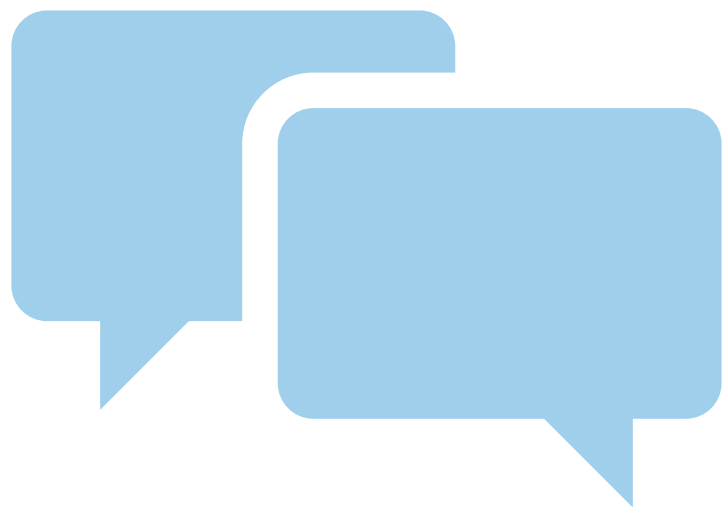
Cost Allocation – Next Steps

We recommend that Scenario 2 be used as the starting point for ongoing negotiations because:

- It offers a more equitable solution where all municipalities save money versus the base case*
- It ensures that each municipality continues to bear financial responsibility for existing and future capital costs associated with its collection system. This is important since we do not have a detailed assessment of the condition of the collection systems or the future capital needs of the same.*

Potential next step:

- The model would be improved if existing treatment assets were valued by an asset valuation expert so that a buy-in arrangement could be considered*



Q & A

Rate Design & Rate Structures

Rate design is an involved process that considers goals, revenue requirements, customer mix and usage, and a variety of other special circumstances (well users, out-of-city users, other fees, etc.). Rate structures can vary considerably.

Examples:

- Seymour: All costs recovered through a volumetric (or usage-based) charge*
- Derby: O&M recovered through a volumetric charge; Capital costs recovered through a flat fee per dwelling-unit equivalent*
- Ansonia: O&M recovered through a volumetric charge; Some capital costs recovered through a flat fee per dwelling-unit equivalent; Remaining capital costs recovered through a flat fee per connection*

Rate structures may include minimum charges, inclining or declining block rates, and different rates or methods for charging different classes of user. Discounted rates may be available for some.

Rate Structure Scenarios

We modeled two different potential rate structures based on the existing rate structures already in use in the three municipalities.

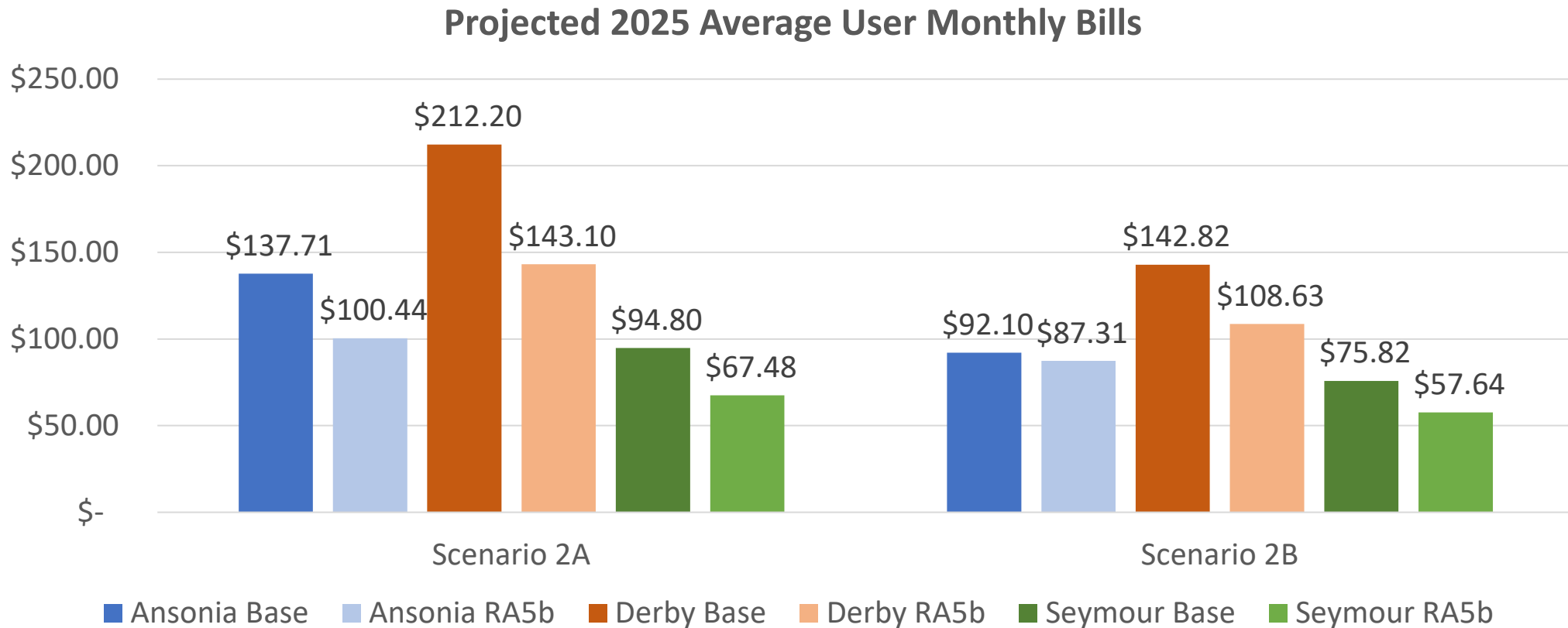
Rate Structure A: 80% of costs are recovered through a volumetric charge per ccf and 20% of costs are recovered through a flat fee per connection

Rate Structure B: O&M costs are recovered through a volumetric charge per ccf and capital costs (debt and pay-as-you-go capital) are recovered through a flat fee per dwelling-unit equivalent

- Shifts costs away from SF to MF and commercial/industrial users*

Projected 2025 Average User Monthly Bills

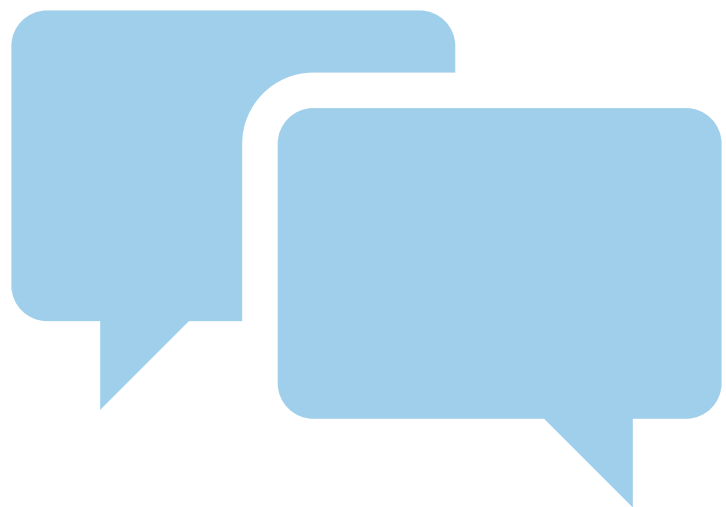
Note: "Average user" is a single-family household (1 dwelling-unit equivalent) with four household members who each use 75 gallons per day (146 ccf per year)



Responsibility for Rate Design

Who ultimately decides?

- The Collins Center has recommended a governance structure that assigns decision making to a Board of Directors and appointed staff.*
- The regional Board of Directors would establish a rate structure after the completion of the annual and capital budget process, a cost-of-service study, and rate study.*
- These requirements are articulated in an ordinance and bylaws that are consistent with Connecticut law.*
- The Collins Center has drafted a proposed ordinance and by-laws based and provided them to NVCOG for your use.*



Q & A

Thank you!

PLEASE CONTACT WITH ANY QUESTIONS:

David Colton

David.Colton@umb.edu

Cell Phone: 781-964-6713

Assumptions

- ***Timeline*** – The model assumes that regional WPCA will be formed in FY22, Phase I collection system investment will begin immediately with debt repayment starting in FY24, and for pumping station, treatment, and conveyance capital: engineering in FY23, construction in FY24-25, and debt repayment beginning in FY26.
- ***Operating & maintenance cost projections*** – The model relies on regional O&M costs projected by B&V, annualized for the study period using the same methodology for each scenario. They are, in some cases, materially different from the budgets of the existing WPCAs because they are based on industry standard practices and costs. A 9% adjustment was added. For the base case, actual WPCA budgets were inflated from current year.
- ***Existing debt and future capital costs*** – The model relies on existing debt as reported by the municipalities and projected capital costs from B&V. Phase II collection system costs are treated as pay-as-you-go capital. The project team included costs for non-infrastructure capital such as vehicles at an annual rate of 3% of the O&M budget.
- ***Structure of debt*** – In order to project annual debt service, the project team assumed that all debt would be issued through the CT Clean Water Fund for a 20-year term at 2% interest with level debt repayment. No borrowing costs or short-term debt were modeled.

Assumptions continued

- ***Financial incentives***– The model includes grants from DEEP to partially reimburse debt associated with capital improvements. For single-jurisdiction WPCAs (i.e., the base cases), the model assumes a 20% reimbursement, whereas for a regional WPCA, the model assumes 25%.
- ***Funds held in reserve***– To the extent the existing WPCAs hold any reserve or stabilization funds, the model does not account for these funds. These funds may be used to stabilize user fees during or after the transition to regionalization, or for any other legal purpose.
- ***Strength of influent***– The model does not account for differing costs for treatment of sewerage based on its strength. Based on the project team’s understanding of the user base, there are no significant industrial or other users that would produce waste that is significantly costlier to treat.

2021 Projected Average User Monthly Bills

Note: Based on the same definition of an “average user” as the previous analysis

2021 Comparable Rates	Ansonia	Derby	Seymour
Existing Rate Structure	\$ 80.01	\$ 64.33	\$ 67.65
Rate Model A	\$ 135.14	\$ 132.51	\$ 58.26
Rate Model B	\$ 78.74	\$ 106.66	\$ 56.33

Retail Rate versus Wholesale Rate Hybrid Structure

Process for calculating rates

Retail Rate Structure	Wholesale Rate Hybrid Structure
<ol style="list-style-type: none">1. Costs are aggregated2. Billable water data is aggregated3. Total cost is divided by total billable water4. Single rate is calculated, applicable to all users	<ol style="list-style-type: none">1. Costs are aggregated2. Costs are allocated to each municipality3. Each municipality's total cost is divided by its total billable water4. Multiple rates are calculated, one for each municipality

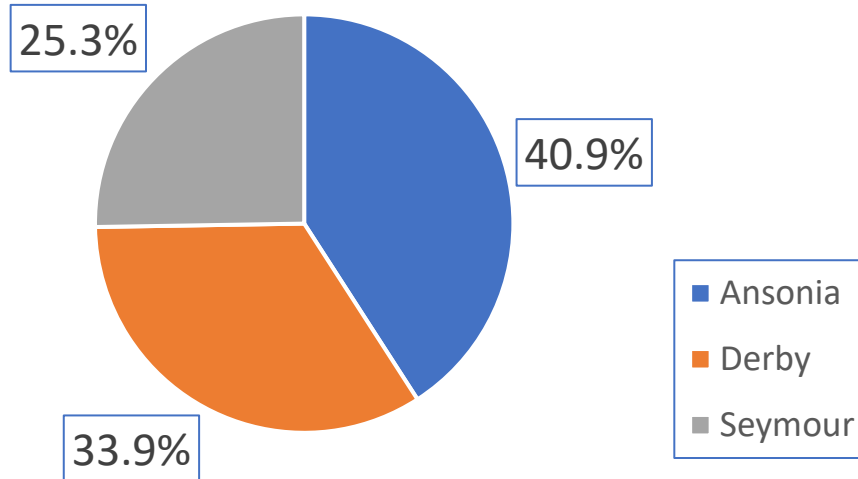
Although the retail rate structure may be preferred for its administrative simplicity and perceived equity, the wholesale rate hybrid structure has certain benefits:

- Addresses any differences in how or how efficiently billable water is measured and subsequent inequities between users in different municipalities*
- Could allow each municipality to have local control over rate design, if the regional WPCA assessed the community and each recovered costs from users as it saw fit*
- Still allows the regional WPCA to be structured under a full ownership model*

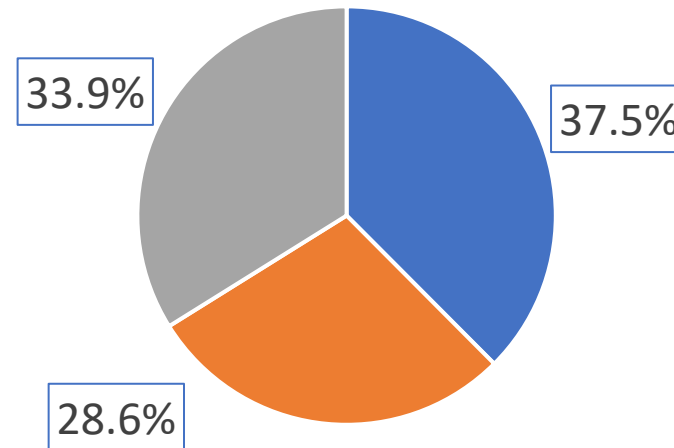
Challenges in Modeling the Retail Rate Structure

- To ensure inter-municipal equity when using the retail rate structure, billable water should be close to proportionally accurate, but this does not seem to be the case*

Average Annual Flow, 2015-2017 (MGD)



2020 Reported Billable Water (ccf)



- At this phase, modeling cost recovery rates with the wholesale rate hybrid structure may be the more accurate, equitable, and useful analysis for the stakeholders*
- A retail rate model could eventually be used after deeper analysis of billable water data to understand why there appear to be differences*
- This demonstrates the need for a cost-of-services study and rate and fee structure design*

Ownership Model Recommendation

Ownership and rate models

- *The Collins Center reviewed ownership and rate models and presented them at a workshop held October 15, 2020. Options discussed included:*
 - *Full Ownership/Retail Rate Structure*
 - *Partial Ownership/Wholesale Rate Structure*
- *Based on stakeholder preferences, a new option to consider is a Full Ownership/Wholesale Rate Hybrid Structure*

Full Ownership is recommended

- *More efficient, eliminating an unnecessary layer of bureaucracy*
- *Preferred by regulatory agencies because the regional authority is accountable for the entire system*
- *Greater opportunity for grant funding*
- *Previous workshop and follow-up survey produced no clear preference among municipal representatives*

Equity is an essential issue for final rate design

- *Final rate design will require a cost-of-service study and analysis to ensure that costs are recovered in an equitable manner*

Governance Recommendation – Enabling Legislation

Enabling Legislation Options

- *Connecticut Model Legislation (Chapter 446K Sections 22a-501 to 519) or Special Legislation are used to create districts*

Connecticut Model Legislation is Recommended

- *Established Track Record.* *The model statute is in use in CT, most notably by the New Haven Region*
- *It is Timely.* *Creating Special Legislation would delay creation of the district*
- *Meets Established Criteria.* *It meets the criteria set forth by the State which will aid in obtaining necessary approvals*
- *Grant Funding.* *The statute contains language providing for increased grant funding to support regionalization*
- *Comprehensive.* *It is a complete statute that contains all the necessary language enabling district formation, financing, land acquisition, project planning and construction, and staff selection*

How to Establish the Regional WPCA

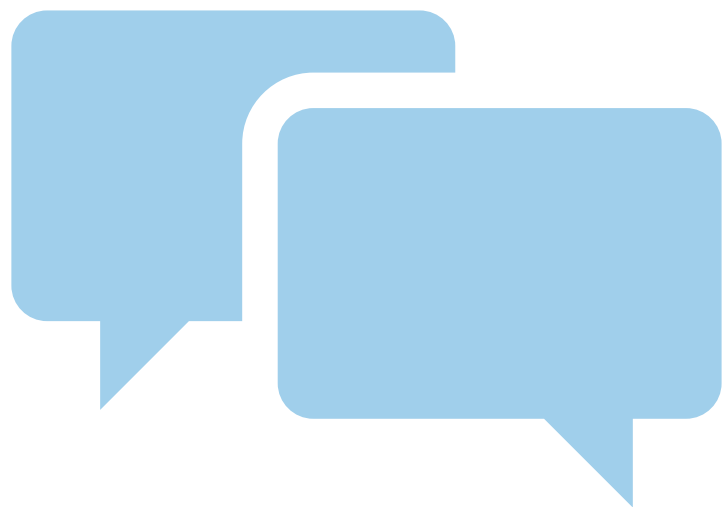
- ***Concurrent Action.** Each municipality's legislative body must concurrently adopt an ordinance that establishes the regional WPCA*
- ***Approval Required.** The ordinance and a "preliminary plan of operation" must be approved by the DEEP Commissioner and State Treasurer*
- ***Board of Directors.** The ordinance establishes a Board of Directors that adopts sewer rules and regulations and hires officers*
- ***Bylaw Required.** The powers and duties of the Board and officers are spelled out in the ordinance, and initial bylaws are also adopted by the constituent municipalities*

Recommended Design of the Board of Directors

- ***Recommended Representation.*** Three members from each municipality, three-year staggered terms, and the ***appointing authorities*** are the same as for the existing local WPCAs
- ***Super Majorities Recommended.*** Six votes are required to adopt budgets, determine user fees, and issue debt **and** at least one voting member from each community must be among the super-majority
- ***Recommended Eligibility.*** Directors must reside in the district and have relevant environmental, engineering, or financial knowledge or experience

Key Ordinance & Bylaw Provisions

- ***Officers.*** Board appoints an Executive Director (CEO), Treasurer, and Secretary
- ***Budgeting.*** Executive Director prepares operating and capital budgets for Board approval
- ***Cost-of-Service Study.*** Annual requirement prior to rate setting
- ***Annual Audit.*** An external and independent audit is required
- ***Rules and Regulations.*** Board must adopt sewer user rules and regulations



Q & A