

Regional Wastewater System Study

Naugatuck Valley Council of Governments

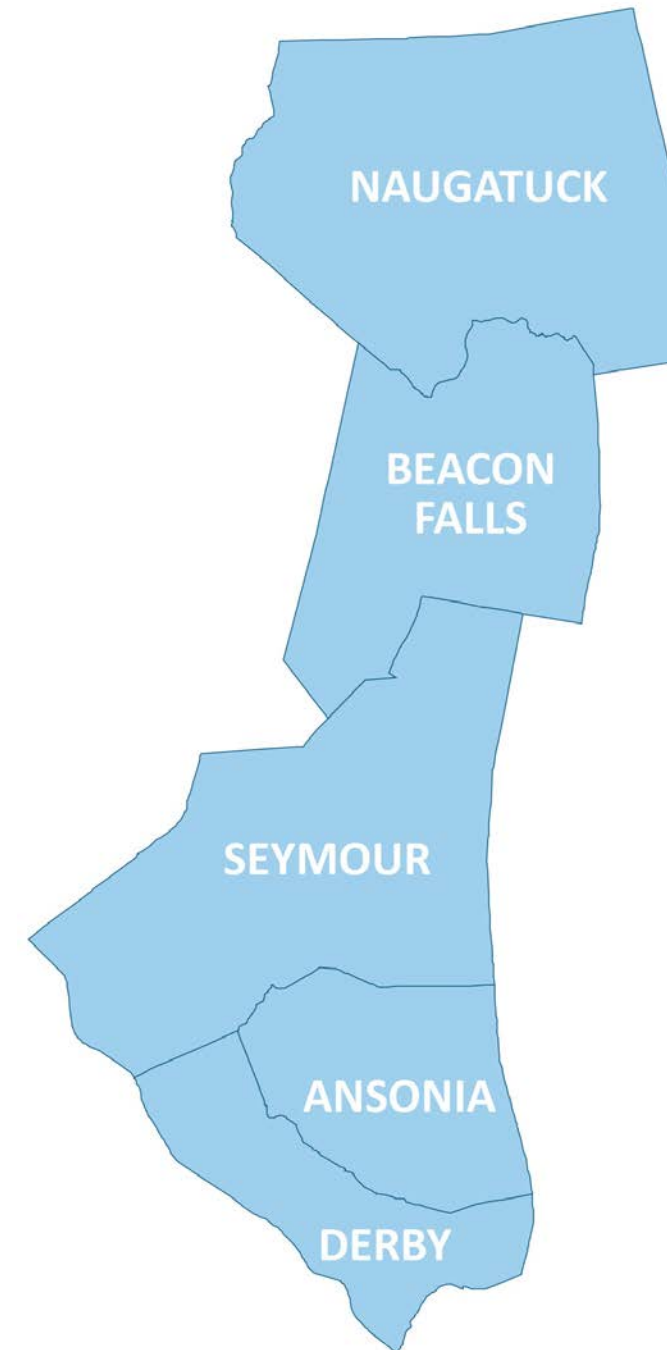
Workshop 2

Governance Model & Intro to Cost-Benefit Analysis

June 8, 2021

EDWARD J. COLLINS, JR. CENTER FOR PUBLIC MANAGEMENT

JOHN W. McCORMACK GRADUATE SCHOOL OF POLICY AND GLOBAL STUDIES
UNIVERSITY OF MASSACHUSETTS BOSTON



Presenters



David Colton



Sarah Concannon

Agenda

1.	Ownership Model Recommendation	5 minutes
2.	Review of Governance Models	10 minutes
3.	Introductory Discussion of Cost-Benefit Analysis	15 minutes
4.	Next Steps	<5 minutes
5.	Q & A Session	15 minutes (or more)

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*

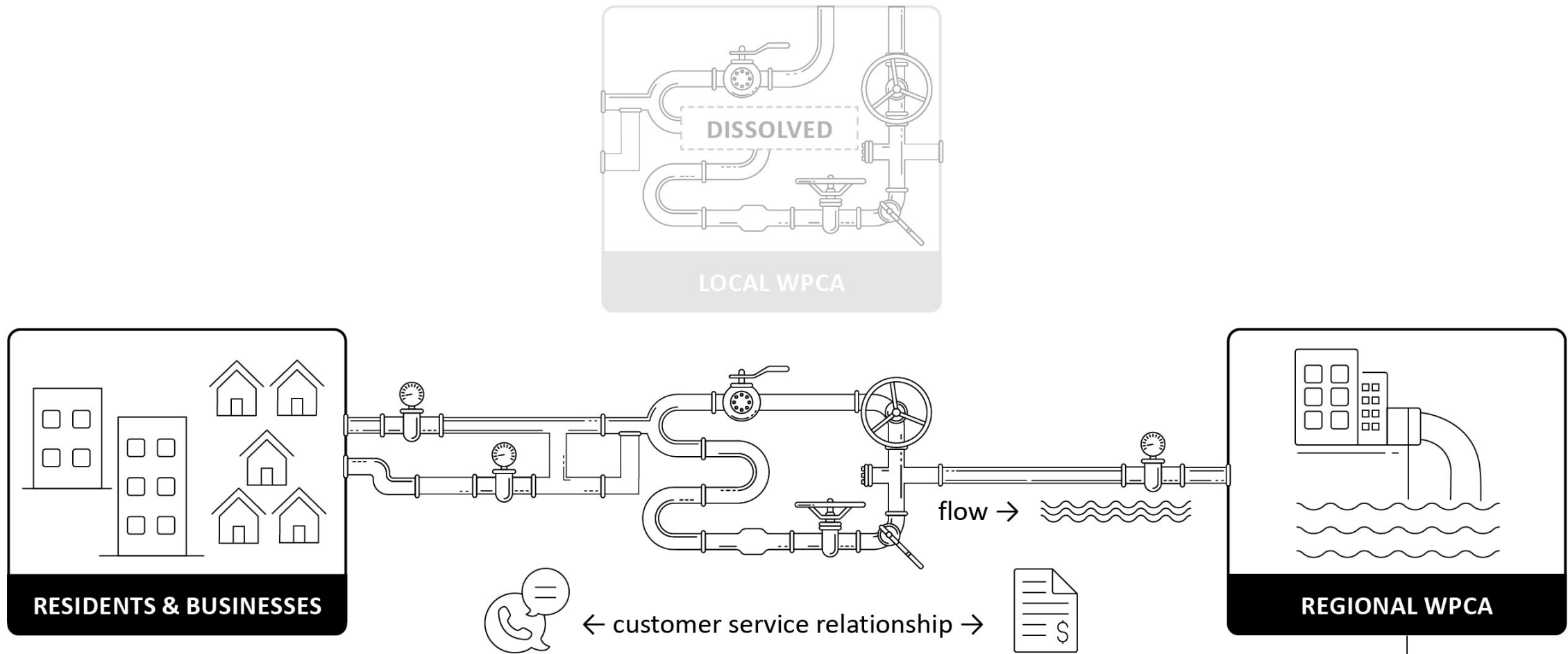
Equity is an essential issue for final rate design

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

Full Ownership Model

Locally-owned wastewater systems are transferred, *in their entirety*, to a newly created regional water pollution control authority that:

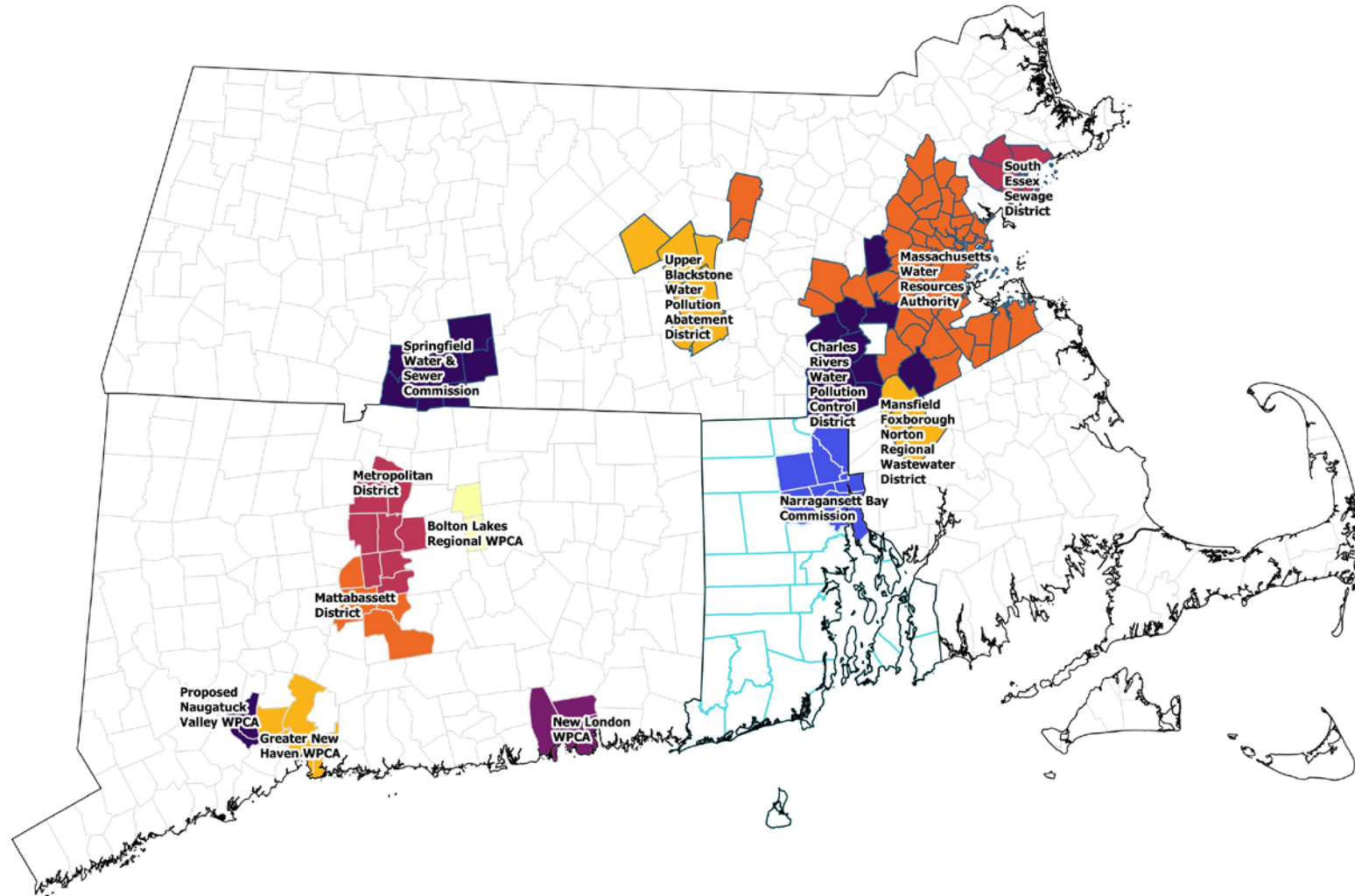
- *collects, transports, treats, and disposes of all wastewater generated by the member communities;*
- *develops rates and charges, rules and regulations, and billing systems;*
- *and provides customer service directly to the end users of the system.*



How Full Ownership Works

Governance Models – Organizational Structure

The project team reviewed the governance models of a dozen regional authorities across southern New England.



Governance Models – Overview

Enabling legislation options

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

Governance structure documents

- *Ordinances, Bylaws, and Intergovernmental Agreements are commonly used to establish structure and operating procedures*
- *Collins Center will provide drafts of both the ordinance and bylaws*

Enabling Legislation Recommendation – Connecticut Model WPCA Statute

- ***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*

Representation Models of Peer Entities

Regional Entity	Size	Terms	Representation Model	Appointment and Term
Bolton Lakes Regional Water Pollution Control Authority	8	3 years	Bolton - five (5) members and two (2) alternates; Vernon - three (3) members and one (1) alternate	Bolton via Selectmen; Vernon via Mayor with approval of Town Council
Greater New Haven Water Pollution Control Authority	9	3 years	New Haven - four (4) members; East Haven & Hamden - two (2) members each; Woodbridge - one (1) member	New Haven via Mayor with approval of Aldermen; East Haven & Hamden via Mayor with approval of Town Council; Woodbridge via Selectmen
Metropolitan District Commission	29	Varies	Member municipalities – one (1) commissioner each [total 17]; Governor - eight (8) commissioners; Connecticut Legislature- four (4) commissioners Non-member towns - Four (4) ex-officio commissioners	Appointments by Governor & Legislature are for terms of six (6) years, while municipal appointments last until they are replaced
Mattabassett District	15	3 years	Formula determines Board representation, which can change	Middletown & New Britain via Mayor with approval of Common Council; Berlin & Cromwell via Town Council
New London Water & Water Pollution Control Authority	N/A	N/A	This regional wastewater entity was established by an intermunicipal agreement and has no unifying board	N/A
Charles River Water Pollution Control District	5	3 years	Franklin appoints three (3) members; Medway appoints two (2) members	Franklin via Town Council; Medway via Selectmen
Massachusetts Water Resources Authority	11	Varies	Governor - three (3) members; Mayor of Boston - three (3) members; Mayor of Quincy - one (1) member; Council President of Winthrop - one (1) member; MWRA Advisory Board - three (3) members	Appointments made by the Governor and Mayors of Boston and Quincy are coterminous with their respective terms in office; appointments made by Council President of Winthrop are four (4) years; MWRA Advisory Board appointments serve for terms of six (6) years

Representation Models of Peer Entities

Regional Entity	Size	Terms	Representation Model	Appointment and Term
Mansfield Foxborough Norton Regional Wastewater District	7	3 years	Foxborough - two (2) Commissioners; Mansfield - three (3) Commissioners; Norton - two (2) Commissioners	Each member municipality appoints their Commissioners through their respective Water & Sewer Boards/Commissions. One (1) of Norton's Commissioners is appointed by the Board of Selectmen.
South Essex Sewerage District	6	Varies	Member municipalities – one (1) member each Governor – one (1) member *some specific requirements for membership	It mandated that the DPW Directors of Beverly and Salem serve on the Board. Danvers and Marblehead Selectmen appoint their Board Members. Governor's appointment must live outside the district.
Springfield Water & Sewer Commission	3	3 years	Mayor of Springfield – all three (3) commissioners	Appointed by the Mayor of Springfield, with approval from the City Council
Upper Blackstone Water Pollution Abatement District	11	3 years	Worcester – five (5) members; Other member municipalities – one (1) member [Total 6]	Auburn & Cherry Valley Sewer District via Sewer Commissioners; Holden & Millbury via Town Manager; Rutland via Selectmen; West Boylston via Town Administrator; Worcester via City Manager
Narragansett Bay Commission	19	3 years	Governor – ten (10) commissioners; Mayor of Providence – two (2) commissioners; Other member municipalities – one (1) commissioner [Total 7]	Municipal members are appointed by respective mayors and administrators

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 and 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

Cost-Benefit Analysis – Scope of Work

“Complete a cost-benefit analysis that compares capital and O&M costs of preferred alternative(s) with base case costs for the jurisdictions that are part of the preferred regional alternative(s) in the aggregate” and

“Model costs to each jurisdiction participating in the proposed regional system under the agreed upon wholesale rate-setting procedures as defined in the draft by-laws, using data provided by B&V regarding wastewater flows...”

Notes:

- Wholesale rate structure may not necessarily be the preferred or recommended model, so we will also explore modeling costs using a retail rate structure (discussed later)*
- Our work relies on the work of B&V, but was developed independently and with different goals*

Goals and Limitations

- ***Comprehensive*** - As much as possible given available data, the analysis incorporates all known, quantifiable financial implications of regionalization;
- ***Valid*** – In order to have a valid finding, the analysis should make only “apples-to-apples” comparisons; and
- ***Equitable*** – When determining how to model the treatment of certain costs, the project team defaulted to the most equitable option. However, there are multiple ways to consider equity, and some decisions must be left to the municipal leaders to make
- Limitations include unknown and/or unquantifiable financial implications such as infrastructure decommissioning or transition costs and future regulatory costs

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 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. The project team determined that, despite these differences, the model should rely on projected O&M costs to ensure a valid finding. A 9% adjustment was added.
- ***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%.
- ***Apportionment of costs***– The shared costs in a regional system are apportioned to the municipalities based on the average annual flow forecasted by B&V.
- ***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.

Total Annual Cost Analysis

- *This analysis will model the total annual cost to each municipality for the study period for the base case and regional alternative 5b. The regional alternative scenario was modeled under the full ownership option.*
- *How will this be different from B&V's Present Worth Cost Comparison?*
 - *Shows costs each year for the study period*
 - *Includes an adjusted O&M cost*
 - *Includes all existing debt service*
 - *Amortizes future debt for capital investment 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*

How Costs are Allocated

<u>Cost Category</u>	<u>Full Ownership</u>	<u>Base Case</u>
O&M Expenses	Apportion by flow	100% to each municipality
Existing Debt	Apportion by flow	100% to each municipality
New Treatment & Conveyance Capital	Apportion by flow 25% DEEP grant	100% to each municipality 20% DEEP Grant
New Collection & Pumping Capital	Apportion by flow 25% DEEP grant	100% to each municipality 20% DEEP Grant

Cost Recovery Rate Analysis

- *This analysis will calculate a cost recovery rate for each municipality and scenario for the study period under a full ownership structure. The rate is calculated as the cost per hundred cubic feet (ccf) of billable water.*
- *Billable water consumption is frequently used as a proxy for quantifying estimated consumer sewer usage. All three municipalities at least partially employ this method.*
- *A cost recovery rate is **not** the same as the rate that will ultimately be billed to customers. Reasons include:*
 - *Rate design features, such as flat fees and inclining block rate structures*
 - *Off-setting revenue (including well user fees)*

Retail Rate versus Wholesale Rate Hybrid Structure

Process for calculating rates

<u>Retail Rate Structure</u>	<u>Wholesale Rate Hybrid Structure</u>
<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 apportioned based on actual flow data3. Each municipality's total cost is divided by its total billable water4. Multiple rates are calculated, one for each municipality

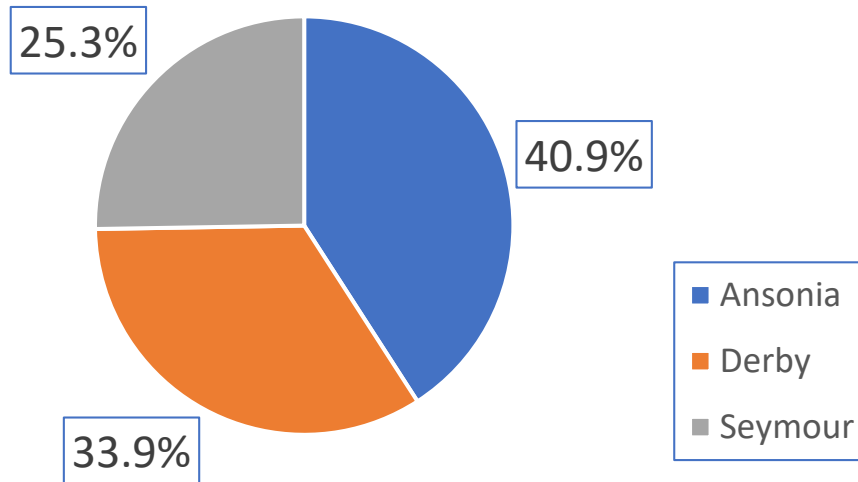
Although the retail rate structure may be preferred for its administrative simplicity and perceived equity, the wholesale rate hybrid structure has certain benefits:

- 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*

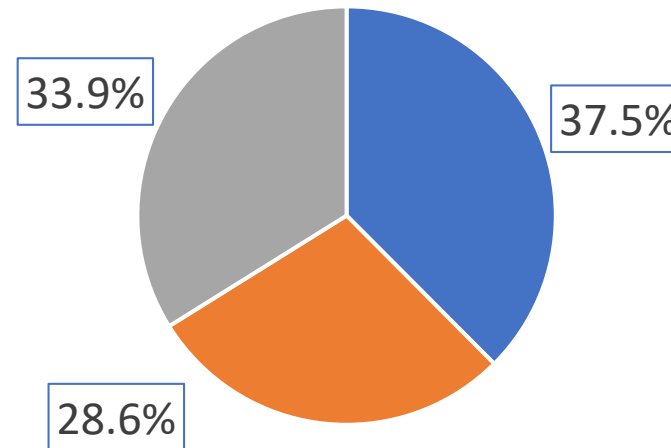
Challenges in Modeling the Retail Rate Structure

- 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*

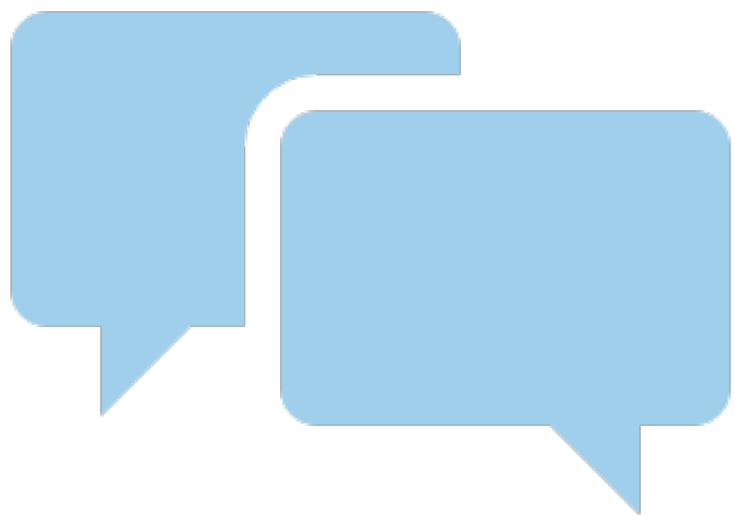
Next Steps

Final Workshop

- *Date to be announced*
- *Focus will be on the findings of the cost-benefit analysis*
- *All recommendations will be summarized and reviewed*

Final Report

- *Collins Center will prepare and transmit the final report to NVCOG after completion of the final workshop*
- *Additional public presentation is possible*



Q & A

Thank you!

PLEASE CONTACT WITH ANY QUESTIONS:

David Colton

David.Colton@umb.edu

Cell Phone: 781-964-6713

EDWARD J. COLLINS, JR. CENTER FOR PUBLIC MANAGEMENT

JOHN W. McCORMACK GRADUATE SCHOOL OF POLICY AND GLOBAL STUDIES

UNIVERSITY OF MASSACHUSETTS BOSTON

