Draft for Public Comment

Alternative Governance Model Assessment and Recommendations for the Baltimore Region's Water and Wastewater Utilities

A DRAFT REPORT TO THE

BALTIMORE REGIONAL WATER GOVERNANCE TASK FORCE

December 15, 2023

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EXECUTIVE SUMMARY

House Bill 843 (HB843) established the Baltimore Regional Water Governance Task Force (the Task Force) to study approaches to governance of drinking water and wastewater supply and treatment in the Baltimore region and recommend a governance model best suited for the region. The impetus for this came from the findings of a joint analysis undertaken by the City and County on existing business processes governing the region's water and wastewater system . These NewGen findings recommended exploring new governance model options for the region's water and wastewater system. The Task Force is deliberating on alternative governance models for the Baltimore region's water and wastewater system through a series of public meetings between September 2023 and January 2024.

The objective and purpose of this report is to consolidate the analyses conducted and discussions had so far as part of Task Force meetings and present it in a digestible manner to facilitate the Task Force in making a final recommendation. The approach to this assignment can be broken down into three steps:

- Step 1: Develop a shortlist of governance models for further study
- Step 2a: Develop a framework for the shortlist of governance models
- Step 2b: Assess shortlisted models against criteria set out in HB843
- Step 3: Recommend a new governance model to the Task Force

The models studied included:

- Model A: Memorandum of Understanding
- Model B: Cooperatives
- Model C: Intermunicipal agreements
- Model D: Wholesale service purchase agreements
- Model E: Special District/Water and Wastewater Authority or Special District/Authority

The Task Force voted to eliminate Models A, B, and D in different meetings during the process.

WSP was tasked to make a recommendation to the Task Force for its consideration. After assessing all the information and factors required by HB843 and our scope to consider, the Consultant recommended that the Task Force select as its preference Model E on its merits. However, in light of the findings about the complexity of unresolved threshold issues and the actual depth of planning required to transition to Model E, we also recommended that the City and County commit sufficient resources to collaboratively define the specifics of that governance model and transactions and actions involved to transition to that governance structure in order to resolve the threshold issues.

Detailed short- and long-term recommendations that would need to be implemented in order to transition to a new governance model include the creation of a dedicated, professional Work Group and a City-County Water Advisory Committee. These are detailed in Section 9, which also includes discussion about the overall transition approach and indicative cost estimates and schedule. For other utilities that have transitioned to a new authority structure, the timeline has taken from 12 to 24 months. A transition to Model E – Special District or Authority will require a timeframe closer to, or even longer than 24 months given the nature and complexity of the threshold issues that must be addressed before an authority could be stood-up.

GLOSSARY OF TERMS

GLOSSARY

Term	*Meaning*
AWWA	American Water Works Association
Baltimore	Baltimore City and Baltimore County, inclusive
City	Baltimore City
Cooperative	A water or wastewater utility owned and run jointly by its members
County	Baltimore County
DPW	Baltimore City Department of Public Works
HB843	Maryland House Bill 843, which established the Task Force
Intermunicipal Agreement	An arrangement between or more municipal parties to purchase or supply water or wastewater, conduct joint operations, or plan capital investments.
KPI	Key Performance Indicator
MEDCO	Maryland Economic Development Corporation
Memorandum of Understanding	A type of (generally) non-binding agreement between two or more parties for the purposes of providing water or wastewater services.
NewGen Report	Previous report completed in 2021 by NewGen, a consulting firm
Rates	The price associated with the purchase of water or wastewater services from a public entity
Special District	An independent governmental entity established for the purpose of providing water, wastewater services, or both to retail customers.
Task Force	Baltimore Regional Water Governance Task Force established by HB843
Wholesale Service Purchase Agreement	A contract to procure water or wastewater services between two or more parties. In the case of water utilities, one party purchases bulk water from another to fulfil retail demand. For wastewater, one party pays the other to handle the treatment process.

1. INTRODUCTION

House Bill 843 (HB843) established the Baltimore Regional Water Governance Task Force (the Task Force) to study approaches for the governance of drinking water and wastewater supply and treatment in the Baltimore region and recommend a governance model best suited for the region. The impetus for this came from the findings of a joint analysis undertaken by the City and County on existing business processes governing the region's water and wastewater system (the NewGen findings). The NewGen findings recommended exploring new governance model options for the region's water and wastewater system.

The Task Force is deliberating on alternative governance models for the Baltimore region's water and wastewater system through a series of public meetings between September 2023 and January 2024. The Task Force plans to adopt a final recommendation in its last meeting scheduled for 25 January 2024. WSP has been supporting the Task Force in this important and historic effort by providing the analyses required and facilitating Task Force meetings.

The objective and purpose of this report is to consolidate the analyses conducted and discussions had so far as part of Task Force meetings and present it in a digestible manner to facilitate the Task Force in making a final recommendation. The report is organized as follows:

- Sections 2 and Section 3 provide a background on the genesis of the Task Force, its charge, and the objective and purpose of this report
- Section 4 explains WSP's approach to the analysis presented in the report, which is largely guided by HB843
- Section 5 presents a comprehensive overview of the as-is state of the Baltimore region's water and wastewater system is presented in to set the stage for the assessment and recommendations on alternative governance models. It covers the assets, organizational structure at the City Department of Public Works (DPW) and the County Department of Public Works and Transportation (DPWT), existing agreements and division of roles and responsibilities between the City and the County, the financial state of the utilities, and a summary of the NewGen findings.
- Sections 6 through 8 present the systematic analysis undertaken to select, shortlist, and assess alternative governance models for the Baltimore region. For each model considered, a detailed structure and framework explaining who will undertake key roles and responsibilities is presented to help the Task Force come to a final decision on the new governance model.
- Section 9 presents the final recommendations.
- Section 10 lists the next steps anticipated after the publication of this report.

This report and the Task Force's recommendation will be discussed at the penultimate meeting of the Task Force scheduled for January 8, 2024. It is anticipated that the final recommendation and report from the Task Force will be adopted during the last Task Force meeting on January 25, 2024. On or before January 30, 2024, the Task Force is required under HB843 to report its findings and recommendations to the Mayor of Baltimore City, the County Executive of Baltimore County, the Governor, and, in accordance with § 2–1257 of the State Government Article, the General Assembly.

2. BACKGROUND

This section presents a background of the developments that led to the formation of the Task Force and the publication of this report.

NewGen business process review study of 2021 revealed gaps in service and identified areas for improvement.

Baltimore City and Baltimore County jointly engaged consultants—NewGen—to study the business processes of the region's water and sewer service delivery system, which culminated in a report delivered in July 2021 (NewGen report). This study was meant to inform the City and County's efforts to execute their shared vision for a "Utility of the Future"; characterized by improved service quality through enhanced intergovernmental coordination and improved business processes and policies. The purpose of the study was to:

- Understand the current state of the structures and processes for the delivery of water and wastewater services, including operations, planning, and billing;
- Identify strengths and weaknesses of the current governance, planning, data management, and operations of the water and wastewater utilities; and
- Identify opportunities to improve interjurisdictional collaboration.

The NewGen report identified the strengths and weaknesses of the governance structure as of July 2021 and potential areas for improvement in service delivery. It presented several models of governance and operations that may provide optimal customer service, system reliability, or interjurisdictional collaboration, and specifically recommended the exploration of alternative governance structures.

House Bill 843 was passed and approved in April 2023 to further explore NewGen's recommendations.

The findings in the NewGen report provided, in part, the impetus for House Bill 843 which was passed by the Maryland General Assembly and approved by the Governor in April 2023. House Bill 843 established the Baltimore Regional Water Governance Task Force (the Task Force) to study approaches to governance of water and wastewater supply and treatment in the Baltimore region and recommend a governance model best suited for the region.

HB843 specifies the task force's charge and the criteria for assessing governance model options.

The Task Force is charged with:

- Reviewing the findings of the NewGen Report relating to organizational structure of the water and wastewater utilities in Baltimore City and Baltimore County.[1]
- Reviewing the examples and case reviews of governance models including, regional governance models provided in the NewGen report and assess how these models may improve management, operations, employee recruitment, retention and training, billing and collections, planning for capital improvements, emergency management, and rate stability for customers.[2]
- Assessing alternative governance structures for the Baltimore region's water and wastewater utilities, including frameworks for governance, financing, capital planning, future system expansion, decision-making processes, and ongoing operations and maintenance of safe, efficient, equitable, and affordable water and wastewater systems serving the Baltimore region.[3]
- Analyzing the fiscal implications and efficiencies of each alternative governance model including estimated short– and long–term costs, 10–year historical costs that both jurisdictions have paid to the utility, and cost–savings associated with: system transitions, asset leases and capital planning, rate restructuring for Baltimore City, Baltimore County, and other wholesale stakeholders, debt

[1] §1(g)(1), HB843.
[2] §1(g)(2), HB843.
[3] §1(g)(3), HB843.

consolidation and extension, staffing and pension liabilities, and other relevant costs to jurisdictions or customers served by the shared systems.[4]

- Recommending the governance model best suited for the Baltimore region's water and wastewater systems along with the legislation and funding to establish the recommended model.[5]

The scope of the Task Force's charge and the criteria specified for assessing the governance models specified in HB843 forms the basis for the analysis presented in this report. **Section 4** describes how we have adopted and interpreted these criteria to guide our analysis.

The Task Force has been fulfilling its charge through a series of public meetings starting in September 2023.

The purpose of the public meetings is to encourage deliberation and discussion among the Task Force members aimed at reaching a recommendation on an appropriate governance model for the Baltimore region. The format of these public meetings is designed to present the information and analysis that the Task Force needs to fulfill its charge, facilitate discussions and votes among Task Force members on key issues and topics of interest, and solicit input from the public.

Figure 1 shows where the Task Force is in the process of reaching a final recommendation. Five of the seven public meetings, shown in the Figure, have concluded. In the first four meetings, the Task Force reviewed the existing organization and agreements governing the utilities (Meeting 1), voted on a range of alternative models for further consideration (Meeting 2), reviewed the as-is financial status of the utilities (Meeting 3) and the fiscal impacts of the alternative governance models (Meeting 4). During Meeting 5, the Task Force further narrowed the range of alternative models to two from three and gained a deeper understanding of the issues and choices involved in transitioning to a new governance model. Meetings 6 and 7 will include a review and adoption of the draft and final reports, respectively.

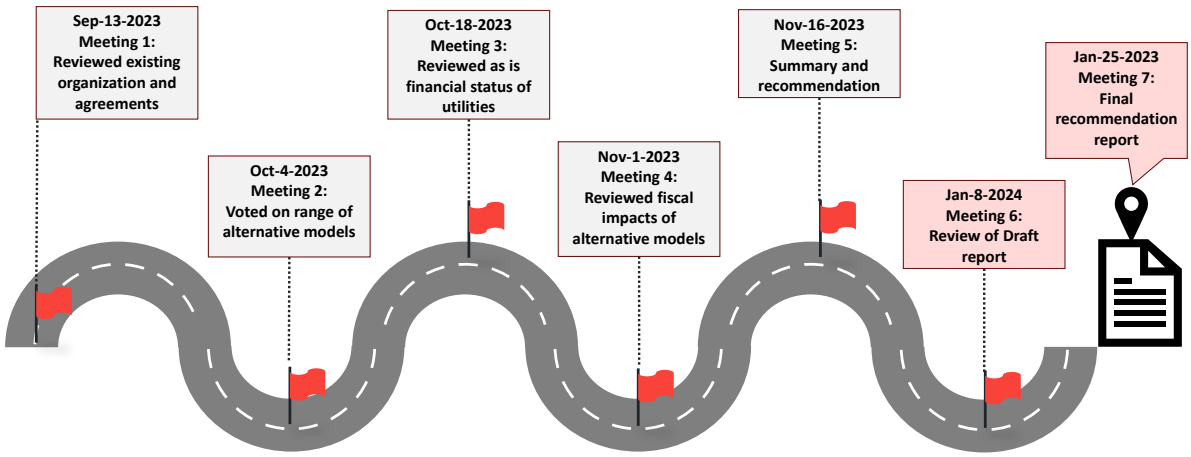

Figure 1: Overview and schedule of Task Force Meetings

[4] §1(g)(4), HB843.
[5] §1(g)(5), HB843.

3. OBJECTIVE AND PURPOSE OF THIS REPORT

WSP is charged with supporting the Task Force to reach a recommendation on a governance model best suited for the Baltimore region's water and wastewater system. To do this, WSP conducted analysis and produced materials to facilitate discussions at the public meetings and responded to specific inquires from members of the Task Force and reviewed and responded to comments made by the public. These materials were published on the Task Force websites maintained by the City of Baltimore and Baltimore County.

The purpose of this report is to consolidate the evaluation in a digestible manner and present a recommendation for further consideration to the Task Force and the public. This report will be open for public comment until 5:00 P.M. on January 5, 2024, and discussed at the next meeting of the Task Force scheduled on January 8, 2024. It is anticipated that a final Task Force report will be adopted at the last meeting of the Task Force scheduled on January 25, 2024. On or before January 30, 2024, the Task Force is required, under HB843, to report its findings and recommendations to the Mayor of Baltimore City, the County Executive of Baltimore County, the Governor, and, in accordance with § 2–1257 of the State Government Article, the General Assembly. **Figure 2** presents the next steps expected in the path to reaching a final recommendation on the governance model for the Baltimore region's water and wastewater utilities.

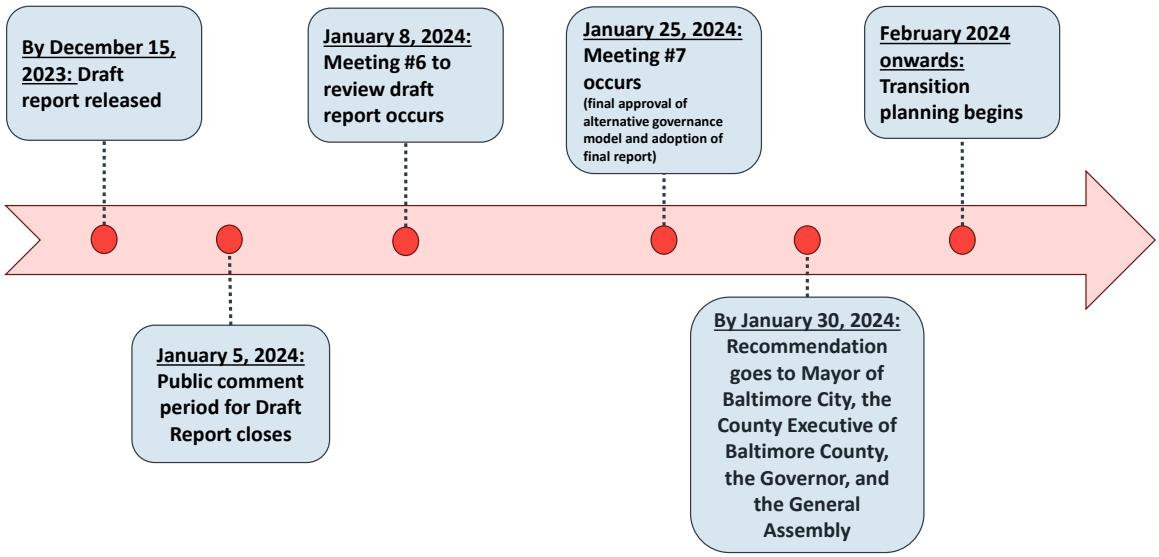

Figure 2: Next steps for reaching a final recommendation.

4. APPROACH

The analysis and recommendations presented in this report are founded on work already done as part of the NewGen business process review study and the guidance set out in HB843, as shown in **Figure 3**. The governance model examples, and case studies presented in the NewGen report serve as a starting point for the review, assessment, and selection of a new governance model (this assignment). The scope of charge and the criteria for assessing governance model options set out in HB843 guides the approach for this assignment. Our approach was further shaped by input from the Task Force and the public.

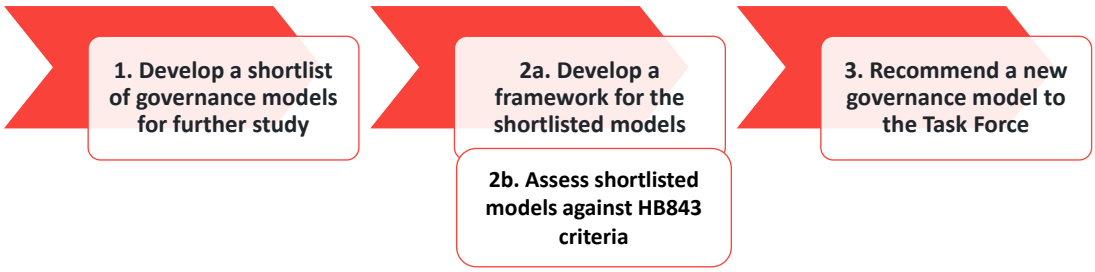

Figure 3: Overview of our approach to the assignment

The approach to this assignment can be broken down into three steps as shown in **Figure 3**:

- Step 1: Develop a shortlist of governance models for further study.
- Step 2a: Develop a framework for the shortlist of governance models.
- Step 2b: Assess shortlisted models against criteria set out in HB843.
- Step 3: Recommend a new governance model to the Task Force.

Step 1: Develop a shortlist of governance models for further study

The purpose of this step was to narrow the focus of the Task Force's discussions early in the process, to allow the Task Force to have in-depth discussions on a shortlist of models and reach a final recommendation. Recognizing that time is of the essence, and that HB843 specifically dictates that the Task Force use the models from the NewGen report as a basis, WSP started with the models identified in the NewGen report and supplemented them with further research to carry out a preliminary assessment to filter out models that do not merit further study. Developing a shortlist early in the process allowed the Task Force to have more in-depth discussions and allowed WSP to provide more detailed and focused supporting information. Our approach is summarized in **Figure 4**.

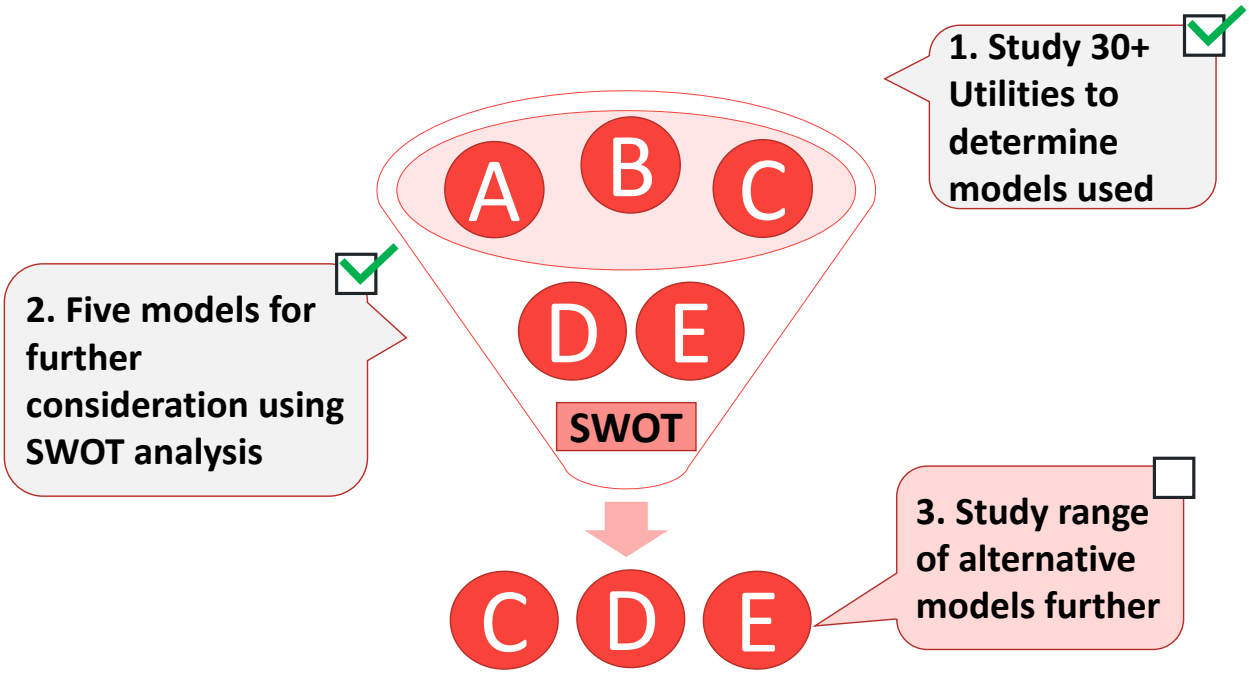

Figure 4: Approach to developing a shortlist of governance models

Step 1 involved the following tasks:

- *Review the governance model examples and case studies presented in the NewGen report:* The NewGen report presented four "legal structures" for utilities that collaborate with each other— memorandums of understanding, cooperatives, wholesale service purchase agreement, and special district or water/wastewater authority. These models, referred to as Models A, B, D, and E, respectively, served as the starting point for study of the alternative governance models. The NewGen report characterized the existing status quo City-County utility relationship as having "agreed to forms of wholesale service purchase arrangements, collaborative resource development and contract services arrangements. WSP termed the City DPW to County DPWT arrangement as an intermunicipal agreement, or Model C, based on the team's best professional knowledge about similar additional models that commonly exist beyond the research in the NewGen report.
- *Study other utilities in comparable cities and regions to demonstrate the prevalence of each model:* To provide examples of each model, WSP went through several examples based on pre-established criteria and sought to identify their model type along with other key criteria. This also served as a means to test the assumption that these five models would encompass the overwhelming majority of utilities in comparable cities. We provided the research on utilities attached as Appendix A to this report.
- *Prepare a list of five governance models for consideration based on a review of the NewGen report and the study of 30+ utilities:* Based on a review of the NewGen report and the 30+ utilities, we arrived at a list of five governance models or legal structures commonly used by utilities. These are a) memorandums of understanding (Model A), b) cooperatives (Model B), c) intermunicipal agreements (Model C), d) wholesale service purchase agreements (Model D), and e) special districts or water/wastewater authorities (Model E). As suggested by HB843, the names of these models were prescribed by the NewGen report options.

BOX 1 :GOVERNANCE MODEL TERMINOLOGY

To ensure consistent use of terminology and ease of reference, we named each of the models as follows:

- Model A: Memorandum of Understanding
- Model B: Cooperatives
- Model C: Intermunicipal agreements
- Model D: Wholesale service purchase agreements
- Model E: Special District/Water and Wastewater Authority or Special District/Authority

- ***Filter out models that are less suited for the Baltimore region based on a SWOT analysis:*** To arrive at a short list of models for further study by the Task Force, we performed a SWOT analysis (See **Box 2** for an explanation). The purpose of the SWOT analysis was to provide a framework to present comparative advantages and disadvantages of each of the five models under consideration and to facilitate Task Force discussion on which models merit further study for the Baltimore region. Findings from the SWOT analysis are presented in Section 6 in the context of the selection of alternative governance models for further study.

BOX 2: WHAT IS A SWOT ANALYSIS

A SWOT analysis is a qualitative analytical tool for strategic options analysis. It involves identifying the strengths (S), weaknesses (W), opportunities (O), and threats (T) of each option to enable comparisons between options and to shape decision-making. The approach is limited in that it does not yield quantitative scores to enable direct comparison and is not amenable to in-depth analysis of each option. However, it provides a useful framework to think about comparative advantages or disadvantages of each model, especially at a preliminary stage of analysis.

We performed the SWOT analysis of each of the five models against each of the eight criteria set out in HB843. HB843 requires the Task Force to "assess how different regional approaches may improve" management; operations; employee recruitment; retention and training; billing and collections; planning for capital improvements; emergency management; and rate stability for customers. **Box 3** explains how we interpreted these criteria in carrying out the assessment. The results of the SWOT analysis are summarized in Section 6 of this report and the detailed SWOT analysis is presented in **Appendix B**.

BOX 3: INTERPRETATION OF ASSESSMENT CRITERIA IN HB843

HB843 lists the following 8 criteria for assessing each governance model but does not define these terms. In carrying out the assessment, we examined how the inherent characteristics of each governance model would influence outcomes relating to each criteria. In the context of assessing the governance models, we understood these terms as follows:

- **Management** is understood as the tasks and processes through which executive decisions and policy decisions are made. Specifically, for the Baltimore region, the ability to collaborate or integrate policy decision making at the regional level was an important consideration in the assessment of governance models.
- **Operations** means the tasks and processes associated with operations and maintenance of a water and wastewater utility with the ultimate goal of ensuring good quality service to customers in an affordable and equitable manner. Here too, the ability to consolidate and seamlessly integrate some O&M functions or at least boost interjurisdictional collaboration was a key factor in the assessment.
- **Employee recruitment and retention and training** is an important issue that was highlighted in the NewGen report as well as through public comment during the Task Force meetings. In the context of our assessment, we examined how organizational systems and processes inherent to each model would influence outcomes relating to employee morale, retention, capacity building, and skill development.
- **Billing and collections:** Given the unique split of functions between the City and County in regards to billing and collections, this term is understood as the commercial policies and process that influence billing efficiency, accuracy, and collection rates.
- **Planning for capital improvements** is understood as the consolidated set of tasks and processes involved in planning and expanding capacity to meet demand. In our assessment, the ability of a model to deliver economies of scale in capital planning and execution was an important consideration.
- **Emergency management** refers to the approaches to manage droughts and other natural calamities in the Baltimore region.
- **Rate stability for customers:** In assessing the impact of governance model change on rate stability, we considered how each governance model would affect rate predictability, rate stability, and rate structures. Rate Affordability means the ability to minimize rate increases (based on cost savings from efficiencies and economy of scale). Rate predictability means 5-year schedule of rate projections are published annually and revised periodically. Rate structure for retail customers means that large changes in utility bills do not occur resulting from the transition to a difference governance alternative and consolidation of City and County retail rate structures into a single rate structure. Rate structure for wholesale customers means that there is an established wholesale rate structure that does not require wide year to year fluctuations in capital cost contributions.

Step 2a: Develop a framework for the shortlist of governance models

The purpose of this step is to develop a deeper understanding of each of the three shortlisted models by defining the structure and framework for each model. To do this, we followed an iterative process. First, we

developed an indicative structure along with an overview of roles and responsibilities for major functions such as policy decision making, rate setting, capital planning, financing, and retirement and pensions. Then we introduced the framework set out in HB843 to further define these 3 models. HB843 requires the Task Force to "assess alternative governance structures for the Baltimore region's water and wastewater utility, including frameworks for" governance, financing, capital planning, future system capacity expansion, decision-making processes, and ongoing operations and maintenance of safe, efficient, equitable, and affordable water and wastewater systems serving the Baltimore region (Ongoing O&M).[6] **Box 4** captures how we interpreted these terms in developing the frameworks.

Simultaneously, we also started defining transition-related issues and decisions that would need to be addressed in case of transitioning to any of the 3 models. This analysis included discussing the fiscal impacts of transition. Finally, we developed a consolidated set of frameworks for the 3 shortlisted models as required under HB843 and defined in greater detail the choice points, issues, and policy decisions that would need to be addressed under each model.

BOX 4: INTERPRETATION OF FRAMEWORKS IN HB843

HB843 lists 6 topics based on which the Task Force must assess alternative governance structures. These topics are not defined any further in the legislation. In developing the frameworks set out in HB843, we defined the topics as follows:

Governance refers to the policy-making body that makes policy decisions, such as a Board, and its composition.

Financing is understood as the sources of funding and financing available to a utility to meet capital and operating expenses as well as the process for raising financing needed.

- **Capital planning and future system capacity expansion** (two separate criteria in the legislation) are understood together to mean the processes involved in planning for and expanding capacity needed to meet demand.
- **Decision-making processes** are understood to represent the consolidated set of business and operational processes that cuts across all utility functions, which are different from policy decisions.
- **Ongoing operations and maintenance of safe, efficient, equitable, and affordable water and wastewater systems serving the Baltimore region** (hereafter, "Ongoing O&M") is understood to mean the traditional operations and maintenance processes with a goal of providing good quality service to customers at an affordable and equitable price.

The extent to which interjurisdictional collaboration and cooperation would be feasible is an important, cross-cutting consideration in developing the framework for each model along the six topics listed above.

Step 2b: Assess the shortlisted governance models against criteria set out in HB843

Steps 2a and 2b occurred somewhat concurrently. The iterative process of defining the framework of each governance model in Step 2a fed into the assessment of the shortlisted models in Step 2b. Keeping with our approach of building on work already done by NewGen and the guidance provided in HB843, we structured the assessment as shown in **Figure 5**. We first categorized the performance gaps or areas for improvement from the NewGen report by the eight criteria i.e., management, operations, employee recruitment; retention and training; billing and collections; planning for capital improvements; emergency management; and rate stability for customers. To do this, we selected the areas listed for improvement from the NewGen Report that most closely appeared to relate to that areas of potential improvement identified in

[6] §1(g)(3), HB843.

HB843. The Consultant then prepared a side-by-side comparative matrix to illustrate qualitatively the differences between the governance models under consideration for each area of improvement.

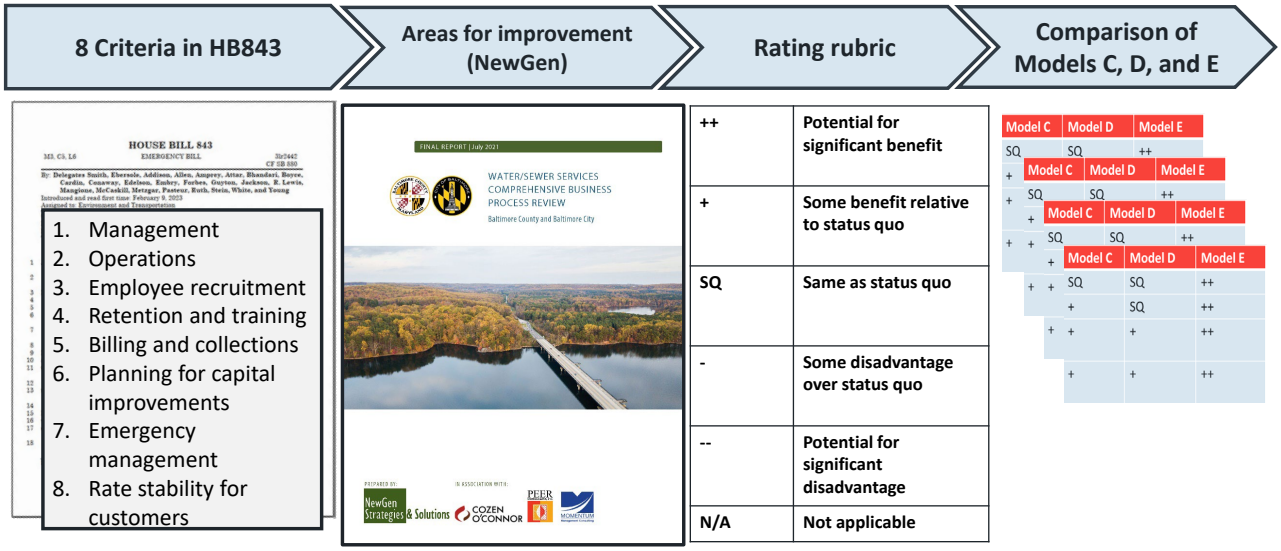

Figure 5: Approach to assessing governance models against HB843 criteria

We then assessed how each governance model would impact each area for improvement, using a rating rubric. The rating rubric is a 6-point qualitative scale developed based on the status quo as the reference point. Status quo means the current state of affairs as represented in Section 5: As-Is State of Baltimore Utilities. The ratings in the rubric are as follows:

- ++ represents significant improvement over the status quo.
- + represents some improvement over the status quo
- SQ means no improvement over status quo
- - means some disadvantage over status quo
- -- means there is potential for significant disadvantage over status quo
- N/A means not applicable

The qualitative ratings criteria were selected simply to put the potential for improvement on a simple, ordinate scale. WSP used the status quo as a mid-point of reference for establishing the range of potential improvement and indicated that there would be opportunities for either "some" or "significant" benefit, or disadvantage, relative to the status quo.

Step 3: Recommend a new governance model to the Task Force

The goal in this step was to develop a fit-for-purpose recommendation for the consideration of the Task Force that considers the practicalities and feasibility of implementation. We defined a set of transition-related issues and considerations to keep in mind for each governance model. We adopted a consultative process— input from Task Force members, representatives at the Baltimore City and the Baltimore County, as well as the public was critical in developing the final recommendation. As required by HB843, we consulted with the Maryland Department of the Environment and the Maryland Environment Service.

An important task that fed into this step was assessing the impacts of transition using the guidance in HB843. HB843 requires the Task Force to analyze the fiscal implications and efficiencies of each alternative governance structure, including estimated short– and long–term costs, 10–year historical costs that both jurisdictions have paid to the utility, and cost–savings associated with: systems transitions; asset leases and capital planning; rate restructuring for Baltimore City, Baltimore County, and other wholesale

stakeholders; debt consolidation and extension; staffing and pension liabilities; and other relevant costs to jurisdictions or customers served by the shared systems.

It is to be noted that much of the impact assessment was qualitative in nature. It was difficult to quantify the impacts of transitioning to each model without visibility on some of key policy decisions needed to implement/execute each model. However, most key policy decisions would be made only at the implementation stage after a final recommendation is made.

Other considerations that shaped the approach

Apart from the guidance in HB843, several topics or issues of concern raised by Task Force members as well as the public were considered in our analysis. These can be categorized as follows:

Follow ups: At each meeting, Task Force members requested us to follow up on several items relating to the as-is state of the utilities, nuances of the governance models being evaluated, rate setting, inter-jurisdictional collaboration, cost allocation, and implementation considerations. These were recorded at the end of each meeting and responses were provided either in the following meeting or separately, in a written format. Where relevant or appropriate, these follow up items have been weaved into the discussion in later sections. A list of all the follow up items raised so far are listed in **Appendix C** along with an explanation of how these have been addressed. These were also published on the Baltimore City and Baltimore County websites, as appropriate.

Public comments: Comments from members of the public have been recorded and responded to in the form of a public comment summary. These are published on the Baltimore City and Baltimore County websites.

Stormwater management: Considering Councilwoman Ramos's representation to the Task Force and following discussions among Task Force members, we were asked to gather additional information on whether utilities that we researched as part of Step 1 provide stormwater services. We provided this information as part of the research on utilities attached as **Appendix A** to this report.

Affordability and equity: Members of the public and the Task Force expressed concern regarding the impact that transitioning to a new governance model would have on affordability of and equitable access to water and wastewater services in the Baltimore region, particularly for economically and socially disadvantaged residents. We acknowledge the importance of this issue and suggest that these impacts be studied during the implementation stage. A recommendation to this effect is included in **Section 9**.

Consultations with other utilities and Maryland Government agencies: To satisfactorily address some of the follow ups relating to transition-related steps and impacts, we consulted with MEDCO, legal counsel to the City of Baltimore and the Baltimore City DPW, as well as other utilities that had undergone similar governance changes. These consultations are referred to as appropriate throughout the report.

5. AS-IS STATE OF BALTIMORE UTILITIES

This section provides an overview of the current state of the water and wastewater utilities in the Baltimore region and is organized along the following topics:

- Existing agreements
- Asset overview
- Organizational structure
- Current division of roles and responsibilities in service delivery; and
- As-is financial state of the utilities.

Existing Agreements

Both the City and County enterprises are governed by four (4) key instruments: The Metropolitan District Act of 1924, the Acts of 1945, the 1972 Water Agreement, and the 1974 Sewer Agreement. For water and wastewater in the areas of distribution, treatment, planning, design, and construction, these agreements remain central to the division of responsibility between the City and County.

Passage of the Acts of 1924 created a Metropolitan District in Baltimore County that was contiguous with Baltimore City. This Act addressed water supply, sewerage and stormwater drainage systems, it chartered responsibility for the raising of funds, setting water and sewer rates, as well as vested Baltimore City with certain powers and obligations for the operation & maintenance of district systems. Essentially, this legislation formalized the City's obligation to furnish water to Baltimore County at cost vis-à-vis water supply lines into the Metropolitan District.

The Maryland General Assembly's passage of the Acts of 1945 set the rules and procedures by which water service rates would be charged by the City to County customers, and informally the method for determining said charges to the City for furnishing water to the County residents.

The 1972 Agreement was intended in part to address the calculation of rates and costs between the City and County. This agreement established a methodology for apportioning the City's cost of supplying water to customers in the Metropolitan District of Baltimore County.

However, the terms of the 1972 Agreement would be amended as a result of the City and County's disagreement over the terms for how costs to the City for the supply of water were to be calculated. This issue was resolved through an Arbitration Board Decision in 1991. The result of this decision led directly to the City's adoption of the utility basis for determining cost to the City.

Baltimore City's responsibility for the treatment of both the City and County's wastewater is governed by the 1974 Sewer Agreement. Because the City and the County owns and operates their respective wastewater collection systems, the agreement mostly regulates system interconnections and cost share. There are other agreements and policy documents that have shaped the requirements, rates, and costs for delivery and treatment of water and wastewater, respectively, for the City and the County, and these are visually outlined in the timeline graphic below which is partially borrowed from the NewGen report. A timeline of the legislation and agreements that have shaped the current arrangement between the City and the County is shown in **Figure 6**.

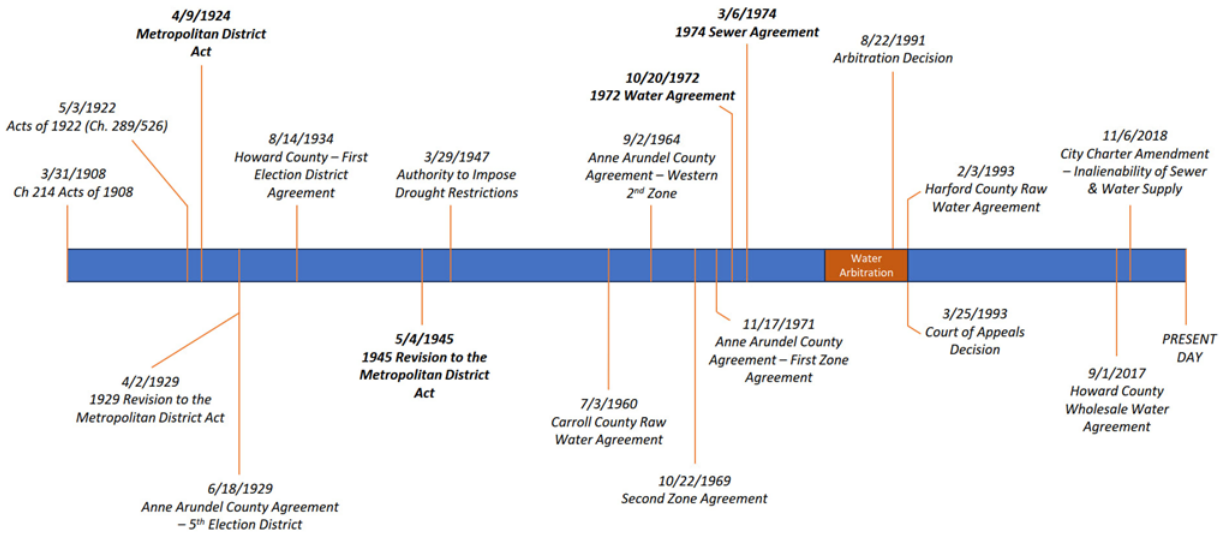

Figure 6: History of legislations and agreements governing the Baltimore water and wastewater system

This agreement history is the basis for how the City and County partner with one another for the provision of drinking water and wastewater services. Further, as shown in **Figure 7**, the ratio of the City's population to the County's has markedly shifted since these agreements were put in place and that has implications for how the City and the County share costs to maintain critical water and wastewater services for customers.

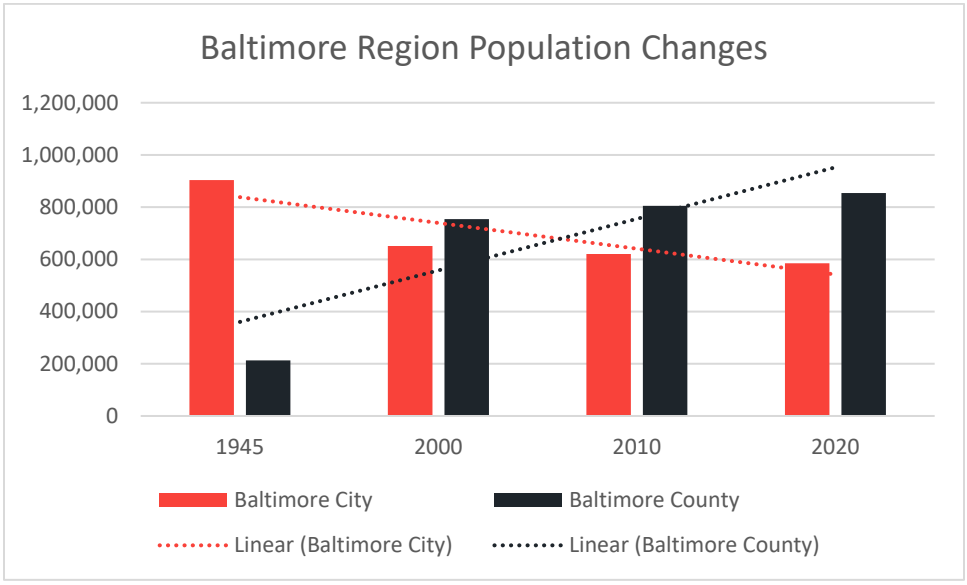

Figure 7: Baltimore Region Population Changes (Source: Census Data)

Asset overview

Figure 8 below presents an overview of the drinking water and wastewater assets in the Baltimore region.

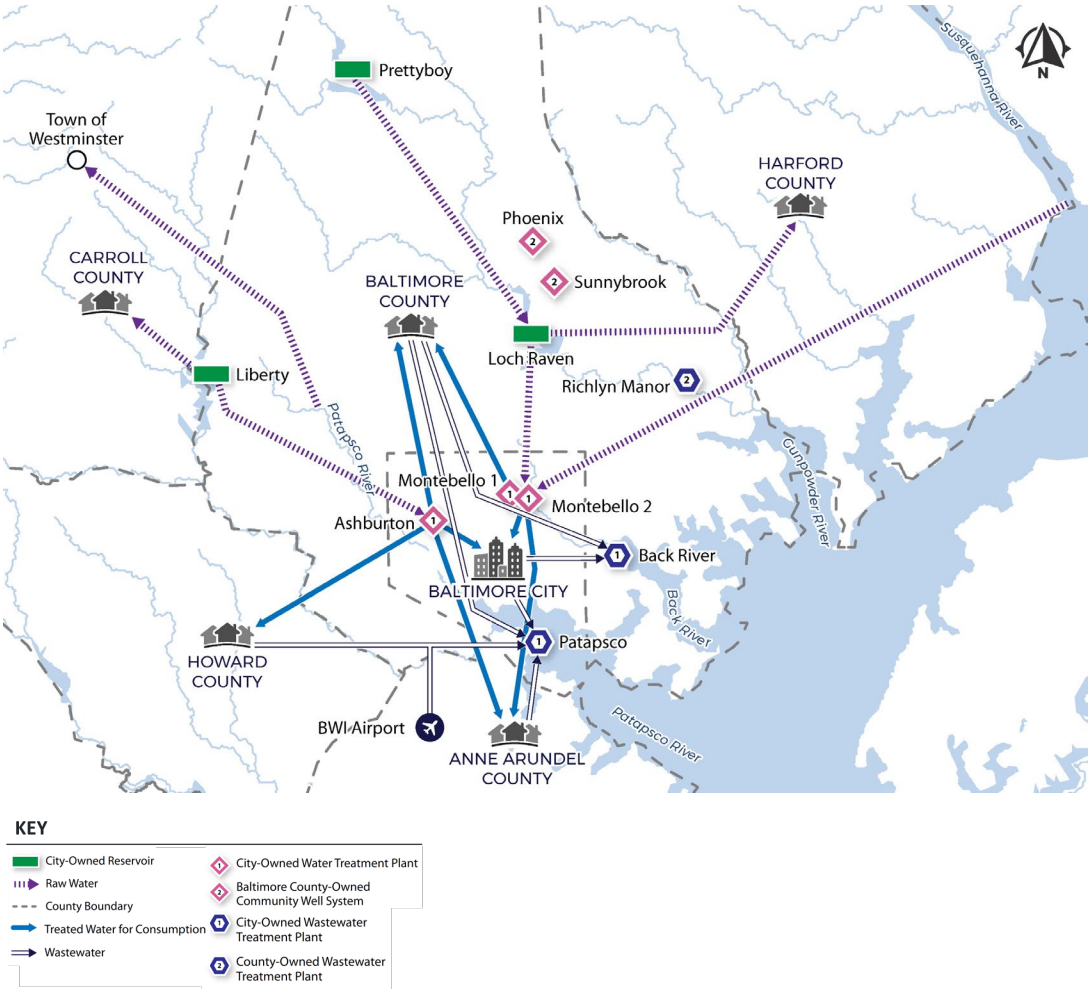

Figure 8: Drinking water and wastewater asset overview

Drinking water

Baltimore City's Bureau of Water and Wastewater within the Department of Public Works, provides water to 1.8 million customers, approximately 72.1 billion gallons annually, via approximately 3,700 miles of pipeline. The water system serves Baltimore City and parts of Baltimore, Anne Arundel, Carroll, Howard, and Harford Counties. The water system provides water to Baltimore County at retail rates, to Howard and Anne Arundel Counties at potable wholesale rates, and to Harford and Carroll Counties at wholesale raw water rates.

Baltimore City-owned water system major assets include 3 raw water reservoirs: Liberty, located in western Baltimore County and eastern Carroll County; Loch Raven, located in central Baltimore County; and Pretty Boy, located in northwest Baltimore County. Three water treatment plants— Ashburton, Montebello I, and Montebello II, provide treated water to the region. All three treatment facilities are located in Baltimore City. The system also includes 19 pumping stations and 20 storage tanks/reservoirs. Baltimore County-owned (and located) water system major assets include community well systems at Phoenix and Sunnybrook.

Wastewater

Baltimore City's Bureau of Water and Wastewater within the Department of Public Works manages the collection and treatment of wastewater from the Baltimore metropolitan region. The wastewater system includes 1,400 miles of sewer main in Baltimore City and 2,100 miles of sewer mains in Baltimore County.

Baltimore City-owned wastewater system major assets include two wastewater treatment facilities (250 MGD capacity) at Back River and Patapsco. The wastewater system includes 9 pumping stations owned by Baltimore City and 120 pumping stations in Baltimore County.

Organizational structure

Baltimore City Department of Public Works: Bureau of Water and Wastewater

The Baltimore City Department of Public Works is responsible for providing safe drinking water and wastewater processing for the region, in addition to maintaining the public water infrastructure. The Director leads the organization and is responsible for the agency's overall management and operations. The Bureau of Water and Wastewater, led by the Bureau Head, manages the operations of the water system, including the production and transportation of drinking water, the collection and treatment of wastewater, and the metering and billing of accounts for its retail and wholesale customers. The Bureau also manages the water system assets for the City. As shown in the organizational chart in **Figure 9**, the Bureau Head manages a Deputy Bureau Head and the leaders of the following divisions/functions: Water Facilities, Wastewater Facilities, Engineering & Construction, Asset Management, Utility Maintenance, Technical, Laboratory Operations, and Administration. **Figure 9** presents the organizational structure of the Bureau of Water and Wastewater within the Baltimore City Department of Public Works.

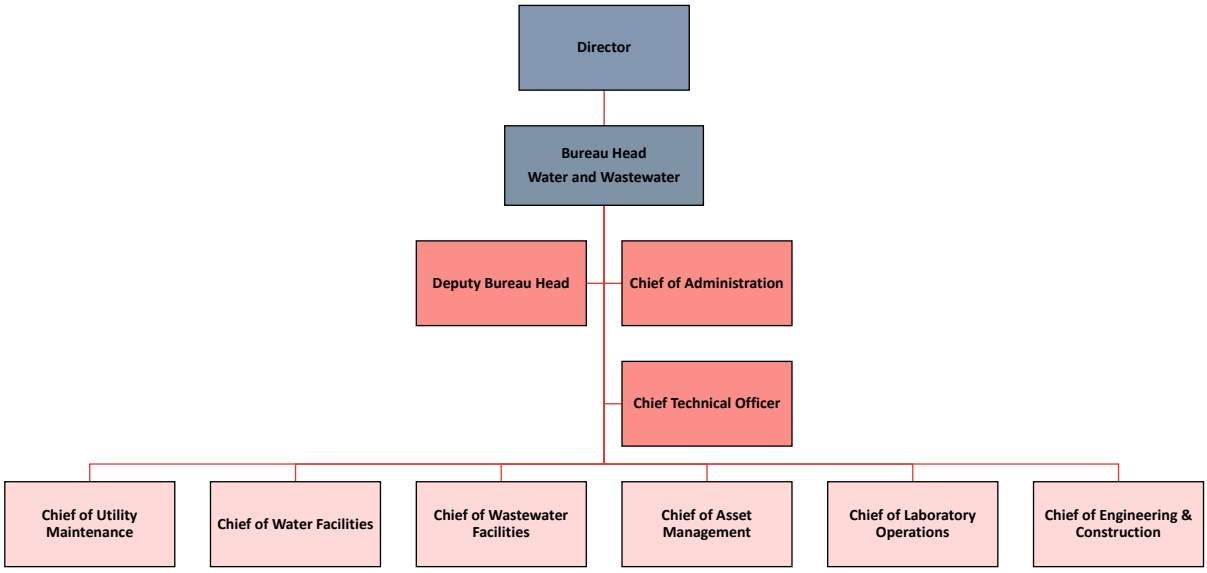

Figure 9: Baltimore City Bureau of Water and Wastewater Organizational Chart

Baltimore County Department of Public Works and Transportation: Bureau of Utilities

In addition to transportation, highways and solid waste activities, the Baltimore County Department of Public Works and Transportation is responsible for maintaining the County's water and sewer infrastructure and related work. The Director is responsible for the agency's overall operations. The Bureau of Utilities within the Department of Public Works and Transportation manages the operations of water and sewer services in the County. The Bureau is led by the Bureau Chief of Utilities. The divisions reporting directly to the Chief are: Technology, Administration, Construction, Pipe Maintenance, and Engineering and Regulation. The organizational chart of the Bureau of Utilities within the Baltimore County Department of Public Works and Transportation is shown in Figure 10 .

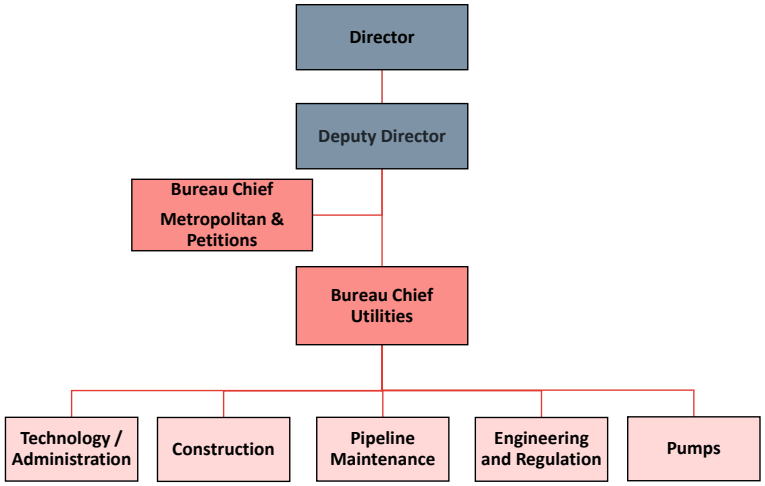

Figure 10: Baltimore County Department of Public Works: Bureau of Utilities organizational chart

The Metropolitan Finance & Petition office is responsible for customer billing for the County and its duties include responding to and processing inquiries for water and sewer availability and requests for petitions to extend water and sewer lines, determining the water and sere charges appearing on annual tax bills, and calculating and administering wastewater credit allowances. The Bureau Chiefs of Utilities and Metropolitan Finance & Petition report to the Deputy Director.

Current division/understanding of roles and responsibilities

Pursuant to the agreements, certain major functions are either shared or handled independently by the City or the County. The relationship between the City and the County's respective utility enterprises is primarily based on the handling of these functions. The WSP team has explored each of these areas in order to make its recommendations for a governance model. It is useful to clarify the current state of responsibilities before turning to the ways in which a new governance model would alter & improve certain functions. **Figure 11** presents a summary of the division of roles and responsibilities between the City and County in water and wastewater service delivery.

	MAJOR FUNCTION	RESPONSIBILITY
WATER	1. Rate Setting	• Mostly set independently by each jurisdiction
	2. Customer Billing	• County for its Water Distribution Charge, City for other rates
	3. Raw Water Supply & Treatment	• City
	4. System Maintenance & Operation	• City
	5. Development Approval	• Handled independently by each jurisdiction
	6. Water Facility Master Planning	• Handled jointly through Water Analyzer Office
	7. CIP – Planning & Implementation	• County for projects serving County customers, City for others
WASTEWATER	1. Rate Setting	• Set independently by each jurisdiction
	2. Customer Billing	• Handled independently by each jurisdiction
	3. Wastewater Treatment	• City
	4. System Maintenance & Operations	• Handled independently by each jurisdiction
	5. Development Approval	• Handled independently by each jurisdiction
	6. Wastewater Facility Master Planning	• Handled independently by each jurisdiction
	7. CIP – Planning & Implementation	• Handled independently by each jurisdiction

Figure 11: Roles and responsibilities in service delivery

Water

- Rate setting: The majority of rate setting is handled independently for each jurisdiction. For services that the City provides for the County, the County establishes rates and the City implements the rates.

- Customer billing: Billing and Customer Service for all water customers is the responsibility of the City. This responsibility is currently the purview of the City's Director of Public Works. The City and County both are moving forward with a plan to manage both sets of customer accounts using the same application/customer information system.
- Raw water supply and treatment: Baltimore City delivers drinking water to the City and County, as well as parts of Anne Arundel and Howard Counties at cost. Some raw water is sold to Carroll and Harford Counties.
- System maintenance & operation: Within the City's Department of Public Works (DPW) Bureau of Water and Wastewater (BWW), Baltimore City's Utility Maintenance Division is responsible for preventative and planned maintenance to the City's drinking water assets, and the Water Facilities Division is in charge of treating and distributing drinking water to the City, Baltimore County, and other areas served
- Development approval: Each of the Baltimore region's utilities process development requests, reviews, and approvals independently. Baltimore County's Department of Permits, Approval and Inspections enforces development approval requirements for the County and the City enforces its own standards for development tied to water service.
- Water facility master planning: This function is managed by the City's utility, notwithstanding the ostensible role of the Water Analyzer Office to facilitate collaboration on this function with Baltimore County. However, plans and costs for water capital facilities are shared with the County for concurrence.
- Capital improvement planning (CIP) & implementation: Separate CIP programs are maintained by both the City and the County concerning drinking water assets.

Wastewater

In the case of wastewater, each jurisdiction exclusively owns and operates the wastewater collection system within their borders. Therefore, the functions of rate setting, customer billing, system maintenance and operations, development approval, wastewater facility master planning, and CIP planning and implementation are handled independently by each jurisdiction. The City is responsible for the wastewater treatment plants.

BOX 5: SUMMARY OF AS-IS FINANCIAL STATUS OF BALTIMORE WATER AND WASTEWATER UTILITIES

- Baltimore City and Baltimore County use a combination of Fixed Charges and Volumetric Charges to recover the costs of water and wastewater service. There are significant differences in the water and wastewater rate structures between the City and the County. In general, the County relies more on revenues from Fixed Charges than the City does.
- Both the City and the County have raised water and wastewater rates on an annual basis in recent years. These rate increases have been to accommodate inflation, and the need for capital investment to address consent decrees and make needed replacements and upgrades to water and sewer infrastructure.
- Both the City and the County are able to meet the financial performance requirements of their respective debt covenants.
- Looking ahead, there will be continued pressure for further rate increases, regardless of the governance alternative selected. There are several items affecting the need for future rate increases:
    - Continued inflation on consumables, parts and supplies, capital project costs, and personnel costs.
    - One-time Baltimore City salary increases adopted in September 2023, which were based on the Compensation Study commissioned by the City. City staff report that the estimated budgetary impact of these salary increases is approximately $15 million per year.
    - Continued capital improvements to address Consent Decrees, including the 2023 Consent Decree related to operations at the Back River and Patapsco Wastewater Treatment Plants.
        - The City projects $2.4 billion in capital spending through FY 29, and the County projects $1.7 billion in capital spending through FY 29.
        - Both the City and the County will rely on future debt as the main source of capital project financing. The amount of debt that the City and the County project to carry in FY 2029 is higher than current debt levels. Both the City and the County are expected to have to increase water and wastewater rates to pay the additional debt service.
- In January 2023, DPW partnered with Promise Pay to offer flexible payment plans to its residential customers. To date, the program has enrolled nearly 2,500 customers with $3.2M in expected payments. To further address delinquencies, DPW is creating a dedicated team to proactively communicate with delinquent commercial accounts. The team will be formed by early 2024 and delinquent notices to commercial accounts restarted in late-2023.

Existing rate structures

The City and County's rate structures are considerably different. The units of water use, billing frequency, and names of the rate structure components are different. For these reasons, comparing the rate structures is difficult. In general, Baltimore County relies on revenues from fixed charges more than Baltimore City does. Rate and monthly water and wastewater bill comparison considerations were addressed in Task Force Meetings 3 and 4.

Baltimore City

Baltimore City bills its customers monthly. Components of the City's water and wastewater rates are shown in **Table 1**.[7] The City charges an Account Management Fee, which covers the water and wastewater operational costs of supporting meter reading, billing, and customer service, as well as postage and mailing. In FY 2024, the Account Management Fee is $4.59 per account, which is a fixed charge. Another water Fixed Charge is the Water Infrastructure Charge, which depends on the water meter size. For most residential customers with a 5/8" meter, the monthly charge is $13.89. For wastewater, there is one Fixed Charge—the City's Sewer Infrastructure Charge—which is $11.68 per account for most residential customers (FY 2024).

The City also has Volumetric Charges that depend on metered water consumption. The FY 2024 Water Variable Charge is $3.85 per hundred cubic feet of water use. The FY 2024 Sewer Volumetric Rate is $10.15 per hundred cubic feet of water use.

Water and Wastewater Bill Component	Amount (FY 24)	Billing Frequency
Account Management Fee	$4.59 per account	Monthly
Water Infrastructure Charge	For most residential customers: $13.89 per account	Monthly
Water Variable Charge	$3.85 per hundred cubic feet of water use	Monthly
Fire Suppression Fee	$13	Monthly
Sewer Infrastructure Charge	For most residential customers: $11.68 per account	Monthly
Sewer Volumetric Rate	$10.15 per hundred cubic feet of water use	Monthly

Table 1: Baltimore City water and wastewater rate structure summary

Some residential customers with fire sprinklers also pay a Fire Suppression Fee of $13 per month. Residential customers without fire sprinklers do not pay this fee. This fee is charged in lieu of requiring the affected customers to pay a Water Infrastructure Charge associated with the upsized water meter required to accommodate the fire sprinkler system. Commercial customers with private fire service connections pay $14 per month Fire Protection Fee.

Baltimore City typically raises rates each year. The City's Board of Estimates has already approved rate increases for FY 2025, consisting of a 3% increase in water rates and a 3.5% increase in wastewater rates. To promote affordable access to service, the City offers water and wastewater rate discounts to qualifying customers through its Water4All Water Discount program.

[7] Current Baltimore City water and wastewater rates can be found on-line at: https://publicworks.baltimorecity.gov/waterbilling_information

The City bills County customers for water. The County bills County customers for wastewater and water distribution on property tax bills. Baltimore County's water and wastewater rates are shown in **Table 2**.[8]

Water and Wastewater Bill Component	Amount (FY 24)	Billing Frequency
Water Distribution Charge	For most residential customers: $256.54 per account	Annual
Sewer Service Rate	$74.75 per thousand cubic feet of water use	Annual
Minimum Quarterly Charges	For most residential customers: $24.54 per account	Quarterly
Quarterly Consumption Charges	$24.54 per thousand cubic feet of water use exceeding 1,000 cubic feet.	Quarterly
Water Benefit Assessment	$1.20 per frontage foot	Annual
Sewer Benefit Assessment	$2 per frontage foot	Annual

Table 2: Baltimore County water and wastewater rate structure summary

The County charges a Water Distribution Charge that covers the County's water system costs that are not associated with the water facilities operated by the City. In FY 2024, most residential customers pay an annual Water Distribution Charge of $256.54. The County's Sewer Service Rate is $74.75 per thousand cubic feet of water use, billed annually as part of the County's property tax statement.

Construction costs of installing water and sewer mains are recovered through water and sewer benefit assessments (authorized by Baltimore County Code 2015, Section 20-3-201), which are levied on all properties within the Metropolitan District, improved and unimproved, to recover the construction costs of installing water and sewer mains. The charges are on the annual July 1 Property Tax bill and are paid for a 40-year period.

Baltimore County customers are billed for water service by the City, for the costs associated with City-operated facilities. The City bills County customers on a quarterly basis. The City bills contain a fixed Minimum Quarterly Charge (which includes the first 1,000 cubic feet of water use) and a Quarterly Consumption Charge of $24.54 per thousand cubic feet of water use, which is measured on a quarterly basis.

Cost Allocation Model

The Cost Allocation Model (CAM) is a spreadsheet-based set of cost allocation calculations one each for water (water CAM) and wastewater (wastewater CAM). The purpose of the water CAM is to allocate costs incurred by the City for raw water supply, water treatment, and distribution of water in water mains exceeding 12" in diameter. Costs are allocated between Baltimore City, Baltimore County, Howard County, Anne Arundel County, Carroll County, and Harford County. The water CAM contains industry-standard cost allocation methodology, specifically the Base Extra-Capacity methodology described in American Water Works Association publications. The specific calculations are outlined in a 1972 Agreement between the City and the County. The sewer CAM contains apportions costs for the Joint Use Wastewater Facilities between the City and the County cost allocation methodology that is based on the

[8] Note: Current Baltimore County water and wastewater rates can be found on-line at https://www.baltimorecountymd.gov/departments/public-works/metro-finance/rates

terms of the 1974 Agreement between the City and the County. The County's allocated cost combines the cost responsibility of the County and of the three wastewater wholesale partners: Anne Arundel County, Howard County, and BWI Airport. The County performs subsequent calculations to assign costs to these wastewater wholesale partners.

After the end of each year, audited financial data and water usage reports prepared by the Water Analyzer Office are used to prepare a "true-up statement" which produces cost allocations to each party based on actual data from the previous fiscal year. City and County staff report that the CAM calculations are complicated by the use of different billing systems and billing frequencies for City and County customers. Additionally, since billing, meter reading, and accounting systems have changed over the 30 years since the CAM was first developed, there are some calculations that are no longer functional and input assumptions that are not fully documented.

Although there have been past disagreements between City and County staff also report that in recent years, City and County staff come to an agreement on CAM results and produce the required True-Up Settlement Statements. The County is planning to convert to the same billing system as the City currently uses, which should alleviate some customer data issues.

Current revenues, expenses, and bond ratings

Table 3 summarizes the FY 2022 revenues and expenses for the City's water and wastewater utilities. Combined water and wastewater revenues were approximately $556.2 million, which includes approximately $160.1 million in revenues from Baltimore County and the water and wastewater wholesale partners. In addition to the summary shown in **Table 3**, the City reported FY 22 water and wastewater debt service coverage ratios of 2.61 and 1.29, respectively.

	FY 22, $M
Baltimore City Water	
Operating Revenues	$278.3
Expenses	
O&M	$143.2
Debt Service Interest	$43.4
Debt Service Principal	$26.5
Baltimore City Wastewater	
Operating Revenues	$277.9
Expenses	
O&M	$162.4
Debt Service Interest	$39.6
Debt Service Principal	$51.7

Table 3: FY2022 Baltimore City water and wastewater revenue and expense summary

Table 4 shows a similar financial summary for Baltimore County's Metropolitan District, which combines its water and wastewater utilities. Total revenues in FY 2022 were $374.5 million. County staff also reported a FY 2022 senior lien debt service coverage ratio of 1.65 (compared with a target of at least 1.25x) and an "all debt" debt service coverage ratio of 1.28x (compared with a target of at least 1.10x). County staff also report that the Metropolitan District's FY 2022 ending cash balance (including cash and cash equivalents as reported in its financial audit) equaled 104 days of average daily total expenditures (compared with a target of at least 75 days).

County Metropolitan District	FY 22, $M
Revenues	$374.5
Expenses	
O&M	$201.6
Debt Service Interest	$64.0
Debt Service Principal	$65.2

Table 4: FY2022 Baltimore County Metropolitan District revenue and expense summary

Existing pension programs

Water and wastewater employees of the City are covered under the Employees' Retirement System (ERS) of the City of Baltimore and that of the County are covered by the Employees' Retirement System (ERS) of Baltimore County. Both are defined benefit contributory plans that contribute a percentage of compensation that is based on the hiring date and number of years of service. The specific percentages of contribution are different between the City and the County ERS. The City ERS plan was established in 1926 and all benefit provisions are established by City ordinance and are amended only by the Mayor and City Council. The County ERS plan was established in 1945 and the authority to establish and maintain it is established by Baltimore County Code.

Actuarial data for both the City and County ERSs was reviewed, and from that data, the Net/Unfunded Pension Obligation was estimated. The City's Net/Unfunded Pension Obligation for water and wastewater members is estimated to be $59 million, or approximately $35,000 per member. The County's Net/Unfunded Pension Obligation for water and wastewater members is estimated to be approximately $70 million, or approximately $70,000 per member. It is common for municipal utilities to carry a Net/Unfunded Pension Obligation.

Existing debt service

Baltimore City and Baltimore County's debt is comprised of revenue bonds, revenue refunding bonds, taxable bonds, and special program borrowings from programs such as the Water Infrastructure Finance and Innovation Act (WIFIA). The City's debt carries an AA rating and the County's debt carries an AAA rating. The reserve requirements and other security covenants are typical for municipal water and wastewater agency borrowings.

Table 5 shows existing debt service and the projected change in debt between FY 2024 and FY 2029. In their respective FY 2022 Comprehensive Annual Financial Reports, the City and the County report existing outstanding debt for their water and wastewater system. The City reports the water and wastewater outstanding debt separately shown in **Table 5**. The County has a combined water and wastewater utility and reports the combined total of water and wastewater outstanding debt. The Consultant obtained the projected debt service payments through FY 2029 and calculated the amount of debt principal that will be repaid through FY 2029. From the projected capital funding through FY 2029 (see below), both the City and the County anticipate issuing additional debt.

	Baltimore City, Water ($M)	Baltimore City, Wastewater ($M)	Baltimore County Water + Wastewater ($M)
Existing Outstanding Debt	$1,454 M	$1,696 M	$2,014 M
Projected Change in Debt, FY 24-FY 29			
Projected FY 24 - FY 29 New Debt	$523 M	$802 M	$955 M
Projected FY 24 - FY 29 Principal Repaid	($253 M)	($373 M)	($535 M)
Total projected change in Debt FY 24 - FY 29	$270 M	$429 M	$420 M

Table 5: Existing and projected City and County water and wastewater debt

Historical capital expenses

Table 6 shows historical water and wastewater capital expenses for Baltimore City. In the ten-year period from FY 2013 through FY 2022, the City has spent over $3.5 billion on water and wastewater capital improvements. Approximately 65 percent of this capital spending was for sewer improvements, and the remaining was for water improvements.

Baltimore City Historical Water and Sewer Capital Expenditures, $M			
FY	Sewer Expenditures	Water Expenditures	Total Expenditures
2013	$143.6	$74.0	$217.6
2014	$197.7	$56.8	$254.5
2015	$313.3	$72.1	$385.4
2016	$344.9	$158.7	$503.6
2017	$255.0	$151.4	$406.4
2018	$207.5	$181.5	$389.0
2019	$240.7	$172.7	$413.4
2020	$251.9	$143.4	$395.3
2021	$143.2	$139.6	$282.8
2022	$160.9	$93.4	$254.3

Table 6: Baltimore City Historical water and wastewater capital expenses

Table 7 shows historical Baltimore County water and wastewater capital expenses. In the ten-year period from FY 2013 through FY 2022, the County has spent approximately $1.86 billion on water and wastewater capital improvements. Approximately 60 percent of this capital spending was for sewer improvements, and the remaining was for water improvements.

Baltimore County Historical Water and Sewer Capital Expenditures			
FY	Fund 201 Expenditures (Sewer)	Fund 203 Expenditures (Water)	Fund 231 Total (Combined)
2013	$83.8	$42.0	$125.8
2014	$90.8	$22.6	$113.4
2015	$80.4	$32.1	$112.5
2016	$138.0	$67.0	$205.0
2017	$108.5	$100.1	$208.6
2018	$76.3	$125.0	$201.3
2019	$133.2	$92.6	$225.8
2020	$174.2	$65.8	$240.0
2021	$106.6	$106.3	$212.9
2022	$137.6	$76.3	$213.9

Table 7: Baltimore County historical water and wastewater capital expenses

Projected FY 24-29 Capital Funding

Table 8 shows Baltimore County's projected water and wastewater capital funding, obtained from the County's FY 24-29 Capital Budget. Projected wastewater capital spending in the six-year period is over $1.4 billion. Over $430 million of this total is capital contributions from the County. Projected water capital spending is approximately $1.7 billion, and projected water capital spending is approximately $570 million. The County's projected totals included capital contributions to the City for capital improvements funded by Baltimore City. The County intends to issue debt to cover the majority of projected capital expenses. County staff indicate that the proposed CIP includes anticipated Consent Decree projects.

Baltimore County Projected Water and Sewer Capital Funding	Wastewater System FY 24 - FY 29		Water System FY 24 - FY 29	
	Total, $M	%	Total, $M	%
State Aid	$5.0	0.4%		
Metro Construction Fund	$113.0	9.7%		
Metro Bonds	$996.3	85.3%	$543.9	95.3%
Reallocated Metro Bonds			$9.1	1.6%
Metro Debt Premium	$26.1	2.2%		
Howard County	$12.0	1.0%		
Anne Arundel County	$6.0	0.5%		
MD Water Quality Rev Loan	$9.0	0.8%	$18.0	3.2%
BWI Airport	$0.9	0.1%		
Total	$1,168.3	100.0%	$571.0	100.0%

Table 8: Baltimore County projected water and wastewater capital funding

MCD Phase II Consent decree costs

The City reports that the total estimated capital cost to comply with the MCD Phase II Consent Decree is approximately $1.6 billion, which includes past and future costs. The majority of this cost has already been spent, with the City estimating future costs of $241 million. The $1.6 billion estimated cost does not include City's costs associated with the new Consent Decree regarding the Back River and Patapsco Wastewater Treatment Plants.

Figure 12 shows Baltimore County's estimated Consent Decree capital costs, including both past and future costs. The total estimated compliance cost is approximately $1.4 billion, of which approximately $800 million has been spent and $600 million remains to be spent.

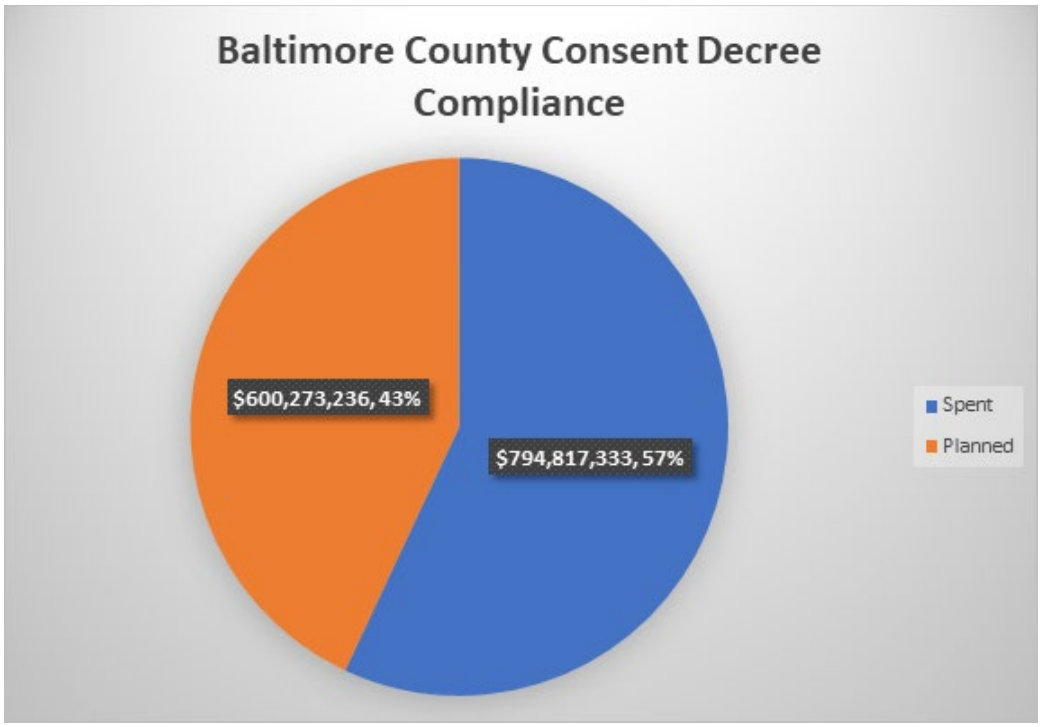

Figure 12: Baltimore County estimated consent decree capital costs

Key findings from NewGen on areas for improvement and performance / service gaps

To conclude this section on the as-is state of the Baltimore region's water and wastewater utilities, the relevant findings from the NewGen report on the areas for improvement and service gaps are presented. These findings are presented in three categories—governance (**Table 9**), organizational (**Table 10**), and operational (**Table 11**). The purpose of presenting these here is to set the stage for the upcoming discussion and evaluation on how a new governance model can help address these areas for improvement.

GOVERNANCE: AREAS FOR IMPROVEMENT

Under the current governance framework, the City and the Director of Public Works are not accountable for County customer service delivery, system reliability or operational efficiency, even though Baltimore County has more than half of the system's customer accounts and is responsible for all demand growth.
The current governance framework has been ineffective in resolving long-standing disputes over customer billing issues and annual water reconciliation.
The current governance framework does not support a culture of continuous improvement and accountability regarding customer service delivery, system reliability and maintenance responsiveness.
Under the current governance framework, the City and the Director of Public Works are not accountable for County customer service delivery, system reliability or operational efficiency, even though Baltimore County has more than half of the system's customer accounts and is responsible for all demand growth.

The current structure does not support effective inter-jurisdictional communications across all levels of the two organizations. As a result, there is no evidence that true collaboration and cooperation occur between the City and County on essential matters such as strategic planning, long-range planning, capacity management, emergency response, regulatory compliance, service interruptions, service changes, safety issues or other emerging areas of concern.
The current governance structure has no requirement or mechanism to conduct strategic planning across jurisdictional boundaries. This means that planning functions within the utility are not aligned with the City or County's strategic goals and priorities.

Table 9: New Gen findings on areas for improvement—Governance

ORGANIZATIONAL: AREAS FOR IMPROVEMENT

Lack of an effective succession planning effort – There is a lack of succession planning, with several employees eligible to retire within the next five years. The knowledge capture process is lacking, with little documentation of standard operating procedures. An over-reliance on contractors and consultants for essential water and wastewater functions has diminished the knowledge maintained in-house.
There is no oversight process defined in statute or agreement to ensure that the Director of Public Works' policies, procedures or decisions are in the best interest of both City and County customers. Many decisions made by the City's Director of Public Works have far-reaching implications for Baltimore County customers. These decisions often receive approval through the City Board of Estimates or oversight by the Baltimore City Council, but there is no mechanism for review by County elected officials.
Baltimore DPW's performance management program does not regularly review performance to establish goals and targets and is not linked to an up-to-date strategic plan.

Table 10: New Gen findings on areas for improvement—Organizational

OPERATIONAL: AREAS FOR IMPROVEMENT

There is no documentation of Baltimore County's allocation of capacity at the Back River WWTP.
County Bureau of Utilities staff does not have access to the City's Cityworks work order system.
The City and County's GIS systems are not integrated, so City maintenance staff do not have access to County utility GIS data.
No clear delineation of city and county roles and responsibilities related to water loss management efforts.

Table 11: NewGen findings on areas for improvement—Operational

6. ALTERNATIVE GOVERNANCE MODELS: SELECTION OF SHORTLIST

The NewGen Report utilized the Water Research Foundation's 2019 report, Water Utility Partnerships: Resource Guide and Toolbox (Project 4750), to identify a handful of generic partnering options used by water (and wastewater) utilities. They continued to identify several common legal structures that utilities used to cooperatively implement when deciding to jointly deliver a service. The following four legal structures were identified:

- Memorandum of Understanding
- Collaborative
- Wholesale Purchase Agreement
- Special District or Authority

The NewGen Report described the City and County ongoing joint operations under the 1972 and 1974 intermunicipal agreements as: "a hybrid form of partnering, with some components of a wholesale service purchase arrangement and some more resembling operation in a collaborative resource development relationship." For the sake of brevity and clarity, we named the City-County's partnership based upon its legal structure, the Intermunicipal Agreement.

Based on the governance structure examples presented in the NewGen report a long list of the following 5 models emerged for further consideration:

- Memorandum of Understanding
- Cooperatives
- Intermunicipal agreements
- Wholesale service agreements
- Special District/Water and Wastewater Authority

This long list was confirmed based on the utilities research described below to ensure no commonly used governance model was excluded from our evaluation.

Key takeaways from utilities research

The list of utilities in **Figure 13** and **Appendix A** was developed from scratch based on a combination of internet research, direct consultation, and professional insight. It was built with the purpose of serving as a comprehensive resource for the task force to quickly learn from experiences with water utilities around the country.

The scope grew over the course of the process in order to meet the needs of the task force and to better encapsulate both the relevant information for each utility and to capture their uniqueness. The initial criteria established was to identify cities based on age, size, geography, and "similarity" to Baltimore. Using this criteria and expanding as needed to capture additional types of utilities, the task force had a collection of comparable utilities across the country from which to learn from.

In practice, we found that utilities adapted a combination of models to suit their needs. As such, the governance structures of utilities are not amenable to direct comparisons. We overcame this problem by investigating the utility structure and governance of more than three dozen localities and categorizing into one or more of five models listed above. The locations and regions we studied are shown below in **Figure 13.**

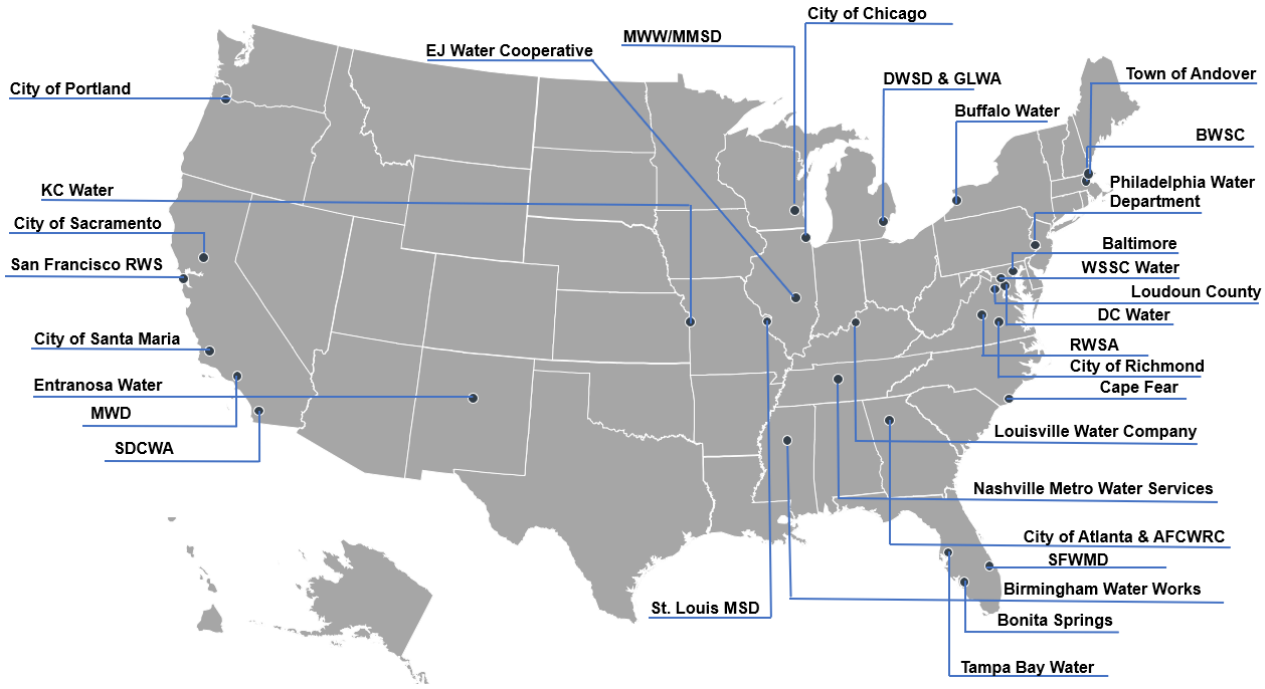

Figure 13: Map showing 30 + utilities studied by the Consultant

Memorandum of Understanding

In the context of water and wastewater service delivery, memorandums of understanding or MOUs are generally limited in scope. They serve a specific purpose or mark the beginning of negotiations for another transaction. These are used to agree on intentions and next steps that would culminate into another legal instrument such as a wholesale service purchase agreement or an inter municipal agreement. An example of such an agreement is the **MOU between the City of Santa Maria and the Nipomo Community Services District**. The Nipomo Community Services District needed additional water supply to meet demand and wanted to buy water from the City of Santa Maria. The MOU here served as a precursor to the wholesale agreement—it summarized the need for an agreement, the intent to negotiate that agreement, and the basic terms and conditions. It was followed by a wholesale purchase agreement.

Alternatively, a MOU could even remain as just a high-level document noting methods of cooperation between the parties on specific issues. The **MOU between the Loudoun County and the Loudoun County Sanitation Authority** (Loudoun Water) is an example of such an arrangement. The two entities wanted to cooperate on certain wastewater capital projects in unincorporated parts of the county. This serves a high-level document meant to clarify the roles and responsibilities between the two parties when undertaking such projects.

Key takeaways from SWOT analysis based on HB843 criteria

As discussed above, Memorandums of Understanding serve specific functions, but do not themselves change the nature of a relationship between two or more entities. Their ***strength*** is that they serve to clarify responsibility, improve coordination, and provide flexibility to the parties. In terms of ***opportunities***, they open up avenues for coordinated planning, and serve as a starting point for future negotiations. An MOU could serve as the basic framework for greater ties, but more is needed than an MOU to restructure a relationship and protect each parties' interests. As is their nature, MOUs ***weakness*** is that they are not legally binding, and as such much be limited in scope. As a result, there will always be a ***threat*** that the MOU will fail to address all potential problems, and may even be disregarded in the event of changing policy priorities.

Cooperatives

Cooperatives in the water and wastewater sector are member-owned, non-profit organizations generally formed to create a centralized water and wastewater service delivery system in areas that are unconnected to the urban utility's networks. These arrangements are more common in rural and remote areas. There are over 3,000 water and wastewater cooperatives in the US. Most of these were established in remote areas unserved by existing utilities' networks and are generally characterized by a smaller scale of operations relative to that of a traditional urban water utility. Some examples of such cooperatives are:

- **EJ Water Cooperative:** established in 1989 to provide clean water to more than 36,000 residents and business across 12 counties in the state of Illinois. Started with 300 members, the cooperative has expanded to more than 14,000 members. In 2017, this cooperative expanded to provided wastewater treatment services.
- **Bonita Springs Utility:** established in 1970 to provide clean, treated water to residents in Lee county in the state of Florida. The utility later expanded to serve surrounding areas. In the 1990s, the utility started providing wastewater treatment services. The utility serves over 30,000 members across the City of Bonita Springs, the Village of Estero, and unincorporated parts of South Lee County.
- **Entranosa Water and Wastewater Association**: Established in 1981, this cooperative serves communities in the East Mountain and Estancia Basin in New Mexico. The service area spans 4,800 members within a 275 square mile radius.

Key takeaways from SWOT analysis based on HB843 criteria

As discussed above, Cooperatives are generally found in smaller or more rural communities. Their most valuable ***strength*** is that they are member owned, meaning that leadership of the utility are members of the community and that customers have a stronger incentive to be involved in governance. In terms of ***opportunities***, the member owned aspect means that it is more likely incentives will be aligned across members and leadership. There is also the likelihood of higher cost recovery as there can be more engagement, flexibility, and more buy-in from the community in general. Theoretically, a community-based approach will lead to fewer issues driven from lack of alignment among customers, however this works due to the size of most cooperatives. Due to the issue of size, a key ***weakness*** of Cooperatives is that the customer base is smaller, which can be an issue for capital planning. Cooperatives are also very often limited in scope due to local laws, so it's not clear whether this approach would be feasible Baltimore. Additionally, one ***threat*** could be limited local expertise, pushing the Cooperative to hire from outside the community. Financially, due to the size limits, another ***threat*** faced by Cooperatives is the limited opportunity for cross-subsidizing across customers. In the event of a drought or rising infrastructure costs, an entire Cooperative could be at risk for a sudden need to raise prices.

Intermunicipal agreements

The intermunicipal agreement model best describes what the Baltimore utilities currently have through the 1972 and 1974 agreements. These agreements work by maintaining the existing legal structure of two or more separate water or wastewater utilities while updating existing agreements and incorporating organizational structure and operational changes. These agreements can allow for joint operation, maintenance, or management of water infrastructure, or they can even simply outline terms of engagement between two utilities.

While not common compared to other models, there were some strong examples to work from for intermunicipal agreements in the region. The three that most informed the evaluation were the **Blue Plains Agreement in the DC Area**, which includes large swaths of Maryland, the **Philadelphia Department of Water**, and the **agreement between the Towns of Andover and North Reading in Massachusetts**. These agreements offer sufficiently different models of what an intermunicipal agreement can look like. The Blue Plains Agreement is a comprehensive multilateral contract that gets updated every few decades to reflect changes in the region. The Philadelphia Department of Water is a municipal agency that works multilaterally with other municipal agencies to provide services. The Andover-North Reading Agreement simply establishes the relationship between two municipalities and clarifies their rights.

Key takeaways from SWOT analysis based on HB843 criteria

As discussed above, Intermunicipal Agreements outline terms of engagement between two or more utilities without fundamentally altering the constituent parties. Their ***strength*** is that they create avenues for collaboration and sharing of technology. Depending on the agreement, these arrangements can also tap into economies of scale by increasing the population served by a utility system. Some ***opportunities*** presented by Intermunicipal Agreements are that they are relatively simple to implement in comparison to other options. The main ***weaknesses*** of IMAs are that they may involve utilities with operational differences such as financing laws or fiscal years, in addition to requiring a larger bureaucracy to manage, as each of the utilities will maintain their existing personnel with the addition of oversight of the agreement. The main ***threat*** faced by the IMA is that all constituent parties must buy-in, as it can fail if priorities shift, or certain utilities are unable to live up to their promises.

Wholesale service purchase agreements

Wholesale service purchase agreements generally deal with the provision of bulk water on a wholesale basis, between two utilities, rather than the delivery of water to individual households. Notably, Baltimore has already implemented such an agreement for Anne Arundel County.

These agreements are common in areas where one utility may have better or more affordable access to water resources, meaning it is more effective for them to sell access to other utilities than for those utilities to establish their own access. These agreements can also establish rules that govern the relationship and the purchases.

This is a relatively common model, so we had multiple options to analyze. **DC Water, Massachusetts Water Resource Authority (MWRA), Chicago Department of Water Management, Louisville Water Company, the Philadelphia Water Department,** and other large regions have wholesale agreements with other communities in the region. In MWRA's example, the City of Boston relies on this regional authority to provide wholesale drinking water services, which is different from a city like Chicago filling that role for its suburbs.

Key takeaways from SWOT analysis based on HB843 criteria

As part of the second task force meeting, the consultant team walked the task force through certain SWOT characteristics of wholesale service purchase agreements.

Similar to some other models, wholesale agreements have the ***strength*** of taking advantage of the existing operational processes while increasing economies of scale through resource-sharing. In this same vein, the main **opportunity** wholesale agreements provide is that they are a relatively simple way of unifying different systems, as they generally give the responsibility of future-proofing and capital planning to a singular utility. Considering that these arrangements naturally place the responsibility for service delivery with the party best placed to manage it, they also provide the opportunity to de-risk emergencies. One ***weakness*** this model faces is that it may limit flexibility to whatever is in the contract. Additionally, it may require redundant infrastructure to prepare for an event in which the 'selling' utility is unable to provide necessary service. This ties into the main ***threat*** faced in this model, which is that wholesale agreements transfer the responsibility for providing services outside the utility that had been previously managing them, as well as putting additional burden on another utility. This can mean that those who are affected by certain issues or obstacles are not in a position to resolve them.

Special district/Water and wastewater authority

Special districts/water and wastewater authority model involves establishing a semi-autonomous entity for a specific purpose, through an appropriate legal instrument such as legislation. Generally, this also involves defining a service area boundary within which the authority is authorized to operate. Policies and procedures would be developed specifically to govern that new authority, reporting to a board. The authority would be authorized to charge rates and fees for services provided and issue revenue bonds in return for the responsibility and obligations to render services. This was also the most common model among the cities we researched.

Some of the more influential systems we considered in our evaluation, either due to their size or relevance to the Baltimore area, were **WSSC Water, the Boston Water and Sewer Commission (BWSC), and the Great Lakes Water Authority**.

Key takeaways from SWOT analysis based on HB843 criteria

Unlike some other models, special districts have the ***strength*** of overhauling the governance of the utilities at hand., as it requires a new utility structure to replace the previous ones. Special districts also benefit from simplified ownership and operations, as there is a singular entity responsible for the provision of services and making internal changes. This model provides the ***opportunity*** for a reduced bureaucracy, as only one governance entity is needed. It can also encourage capacity building and peer learning as the new utility will combine expertise from the previous utilities that previously did not work together as closely. One ***weakness*** of this model is that it requires coordination and collaboration between different jurisdictions that may otherwise have differing policy priorities. For example, a town may wish to establish incentives to grow its tax base, but be unable to influence the local water authority to expand capacity. This is closely tied to the key ***threats*** faced with special districts, such as the difficulty with long-term planning across multiple jurisdictions and the risk of cost-sharing not equally benefitting all residents.

FINDINGS

Based on the information presented to the Task Force during Meetings 1 and 2, the Task Force voted to focus on examining further the following three models: Model C: Intermunicipal agreements, Model D: Wholesale Service Purchase Agreements and Model E: Special District/Water and Wastewater Authority

TASK FORCE DECISION MEETING 2

During Meeting 2, the Task Force voted to focus on the following three models (shortlisted governance models) in upcoming meetings:

- **Model C: Intermunicipal Agreements**
- **Model D: Wholesale Service Purchase Agreements**
- **Model E: Special District/Water and Wastewater Authority**

7. ALTERNATIVE GOVERNANCE MODELS: FRAMEWORK

HB843 requires the Task Force to "assess alternative governance structures for the Baltimore region's water and wastewater utility, including frameworks for" governance, financing, capital planning, future system capacity expansion, decision-making processes, and ongoing operations and maintenance of safe, efficient, equitable, and affordable water and wastewater systems serving the Baltimore region (Ongoing O&M).[9] This section presents an indicative structure for each of the three shortlisted models and defines the framework for these models along these six topics specified in HB843. The information presented here is from Meeting No. 5 where we defined the framework for these models in detail, which were introduced to the Task Force in Meeting No. 3 and were further elaborated upon in Meeting No. 4.

In meeting 5, we defined what "governance" means in the context of this assignment and to guide the Task Force in its decision. Governance is a formal framework to:

- align the public partner organizations to regional goals;
- make accountable key decisions about policies, procedures and funding;
- define roles and responsibilities;
- actively manage the utility's risks while serving the regional community

WSP would like to draw the Task Force's attention to those attributes of a governance framework that may have become confused because of the nomenclature of the models that have been discussed in other Task Force meetings. Several sources emphasize that governance has many components, including accountability, autonomy, role clarity, policy coherence (especially as related to objectives), stakeholder participation/engagement, professionalism (capacity), and transparency. We have considered all these attributes as elements of the governance models being considered in our assessment.

The focus of the frameworks in this section leading up to the recommendations in the later sections on the form of governance that would provide a safe, efficient, equitable and affordable water and wastewater systems serving the Baltimore region would be more on the who and how the party involved would be accountable for making those key decisions about policies, procedures and funding, and to illustrate what the defines roles and responsibilities of each those entities would be.

Model E: Special district/Water and wastewater authority (Special Authority)

Figure 14 presents the indicative structure of the special authority model as applied to the Baltimore utilities. A Board shall make all policy decisions and serve as the governing body of the utility. Executive leadership appointed by the Board leads the capital planning, system expansion, operations and maintenance (O&M) processes and decision making.

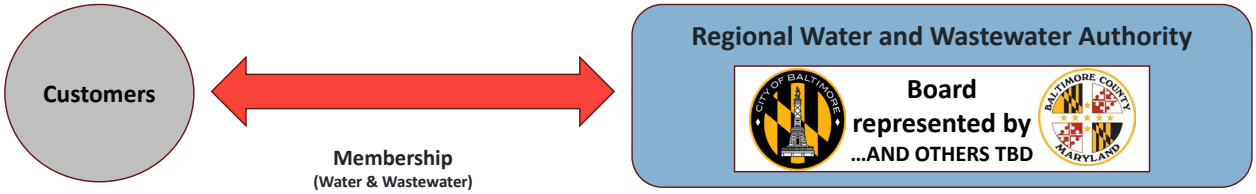

Figure 14: Model E, Special District/Water and Wastewater Authority

This section presents the information presented to the Task Force during Meeting 5 as well as information presented to the Task Force in the form of follow ups or responses to specific questions or discussions points during Task Force meetings. As part of the follow ups, we consulted other utilities that transitioned to a Special Authority model to inform the framework and the recommendations on Model E. A summary of these consultations is presented in Box 6.

[9] §1(g)(3), HB843.

BOX 6: EXAMPLES OF UTILITIES THAT TRANSITIONED TO A SPECIAL AUTHORITY

The transition approach presented in this section is shaped by experiences of other utilities that have transitioned to a Special Authority (Model E). The Consultant consulted representatives at Tampa Bay Water and Great Lakes Water Authority to learn about these organizations' experiences with transitioning to a new governance model. While the impetus for change varies in both organizations and the context for change is not entirely relatable to the Baltimore region, these examples highlighted key factors to consider in developing a transition approach for the Baltimore region. These two examples have informed the transition approach presented in this section to the extent applicable.

Tampa Bay Water

Tampa Bay Water is an example of a cooperative that was reconstituted as a special district and authority in 1998 through an interlocal agreement between six governments in west-central Florida: Hillsborough County, Pasco County, Pinellas County, New Port Richey, St. Petersburg and Tampa. Tampa Bay Water functions as a regional water authority and exclusive water supplier for its members. The impetus for the transition came from three factors: adverse environmental impact of water production, non-representative governance outcomes, and the need for expanded production capacity. Members had different costs for the water supplies they owned. Environmental Regulators began significantly cutting existing wellfield permits. Eventually, the legislature threatened to impose its solution if the parties did not resolve legal and environmental problems. A group of 18 members was established to lead creation of the resolution.

The transition period from the start of the process to the adoption of the new Authority's Charter lasted 24 months. A new Board was constituted comprising 9 members, 2 each from the three counties, and one each from the 3 cities. The newly constituted Board's votes were binding and arbitration was the dispute resolution method. A uniform rate is applied to all wholesale water sold. No sources of funds outside the utility were used to pay for the transition. The newly constituted Board's votes were binding and arbitration was the dispute resolution method.

To make the transition possible, Tampa Bay Water purchased all of their member's water supply assets at a price of $2.00 per permitted gallon of production capacity. The State regulator provided significant alternative water supply grant co-funding to incent authority formation. All the predecessor entity's debt was refinanced. It is notable that this transition did not involve significant pension or employee transitions.

Great Lakes Water Authority (GLWA)

The impetus for GLWA's creation came as part of the Detroit Water and Sewer's Bankruptcy settlement and plan to position Detroit and southeast Michigan for long-term economic, environmental and social success. GLWA began as independent regional water and wastewater (Wholesale) authority, separate from the Detroit Water and Sewer Department (DWSD) in 2016. GLWA manages one of the larger wastewater treatment plants (WWTP) in the United States, serving the City of Detroit and 76 suburban communities. The GLWA wastewater treatment plant treats approx. 650 MGD, which is more than three times the combined wastewater treatment capacity in the Baltimore region. Seventy five percent of GLWA's customers reside in the suburbs, with the remaining customers residing in the City of Detroit.

GLWA is led by a Board of Directors comprising 2 City of Detroit representatives and 1 representative each from Oakland County, Macomb County, Wayne County, and the State of Michigan. Detroit Mayor appoints Detroit's representatives, the county representatives are appointed by their respective counties, and the state representative is appointed by the governor.

GLWA holds a 40-year lease for DWSD treatment plants, major water transmission mains, sewage interceptors and related facilities. It pays Detroit $50 million/year lease payment for capital improvement for the Detroit's (retail) water system and to repair Detroit's (retail) aging water infrastructure.

The transition costs comprised direct third party costs of US$12 million (2016). Most of the transition related tasks were performed by approximately 100 volunteers from member agencies from the City of Detroit, DWSD, and the counties. A PMO Steering Committee comprising approximately 20 representatives of the City of Detroit, DWSD, and the counties combined approved the work group's plans. A key deliverable was a "consensus

forecast" which was a 10-year financial statement showing revenues, expenses, lease payments, debt service, PayGo etc.

This example provided useful information for how pensions and employee transitions were handled:

- GLWA agreed to pay U$40 million over 10 years to fund pension obligations and paid off this amount before it was due.
- City Pension was frozen from bankruptcy. Transfers were subject to the Michigan Intergovernment Transfers Act. Vested employees that left to go to GLWA were "Deferred Retirees."
- All DWSD employees were offered a par job. No layoffs took place, but a Special Projects labor classification was created. Some employees could take on a new functional role, undergo mandatory training, and retain employment status.
- GLWA instituted a new pension program, which applied to new employees.

Governance framework

The Special Authority will be led by a Board of Directors that will establish the policies and procedures of the Special Authority necessary to effectively manage the regional water and sewer system for the community it serves. WSP recommends a seven (7) to eleven (11) member Board of Directors with appointees from the City of Baltimore, Baltimore County, and the Governor of Maryland. The Board of Directors will meet annually at the start of each fiscal year to elect a Chairperson, and Vice Chairperson and an alternate that together will comprise the executive committee.

The Board shall be responsible for:

- Setting policies and procedures for the operation of any water and sewer systems plants and systems
- Receiving and collecting all money due on account of such operation or otherwise relating to such water and sewer systems plants, plants or business
- Employing such managers, superintendents, assistant managers, assistant superintendents, engineers, attorneys, auditors, clerks, foremen, and other employees necessary for the proper operation of any utility and the business and to fix the compensation of all such employees.

There was some discussion by the Task Force members at Meeting No. 5 about the Consultant's recommendation on the number of board members. A board should function in a representative capacity for the members of that authority. The Consultant's recommendation was based upon the minimum number of board members (seven) that in our opinion could balance the representation of the municipal parties that will make up the new Special Authority, and by requiring a majority vote, would necessitate an endorsement by a majority of the Board's members. Hence, the board would have to function in a representative manner. The objective when selecting the number of board members is to ensure that the board will provide fair and complete representation for all participants. There is no single best or right answer to what number of board members there should be. The question to consider is: will the resultant board be representative and fairly consider all of the members and customers in its service area?

Financing framework

Board will have the authority to collect revenue, incur loans, bonds, and fund projects via PAYGO. Sources of financing would include revenue bonds, State Revolving Fund loans, WIFIA loans administered by EPA, MEDCO bonds and any other federally administered loans and grants. The Board would be required to:

- Adopt an Audited Financial Report
- Cause a Cost-of-Service Study to be performed to support rate integrity
- Annually approve Budget to include the following:
    - A published Five-Year Rate Forecast fully reconciled with approved 5-Year CIP plan;

- A long term forecast of Service Demands of Special District or Authority's Service Area. Each governmental jurisdiction is obligated to prepare a long and short term forecast of Service Demands that are to be relied upon by the Special District or Authority;
- Approval of or reconciliation with the Annual CIP Spending Plan.

Staff of the Special Authority would be responsible for planning and implementing debt issuances as needed. In this regard, staff would:

- Procure and manage professional services from a Municipal Advisor, Bond Counsel, Disclosure Counsel, and Debt Underwriter(s);
- Prepare disclosure documents;
- Prepare and negotiate borrowing documents;
- Monitor capital markets for refinancing opportunities;
- Work with Maryland Department of the Environment to maximize use of low-interest rate debt;
- Pursue advantageous WIFIA loans; and
- Pursue grant funds.

In the context of a transition from status quo to a Special Authority model, some key financing issues need to be addressed. These relate to:

- **Strategies and policies for asset leasing:** the Baltimore City Charter prohibits asset leases. As such, an amendment to the Charter will be needed for the City to lease its assets to a Special Authority.
- **Debt management:** options would need to be explored to manage existing debt and structure new debt in a cost-effective manner. A potential for MEDCO to support the transition from status quo to a Special Authority and for Special Authority in establishing its creditworthiness would need to be explored.
- **Reconciliation of pensions:** decisions would need to be made on how pension obligations of utility employees currently mapped to Baltimore City and Baltimore County would be handled after transitioning to a Special Authority

The Transition SME Work Groups recommended in Section 9 could be tasked with finding solutions to address these issues.

Capital planning and future system capacity expansion framework

The Board would be responsible for setting policies and procedures for capital planning and future system capacity expansion. Staff will be responsible for implementing these policies and procedures. These policies and procedures will address how the Special Authority will consult with local jurisdictions on planning & development, capital planning and timing as well as prepare and publish for Board Approved a Five and 10-Year Capital Improvement Plan, the CIP (fully reconciled with five-year rate forecast). The annual CIP Spending Plan (fully reconciled with Approved Annual Budget and Rates) and any capital project contracts will require Board approval.

In the context of capital planning and future system capacity expansion, the following issues would need to be resolved during transition to a Special Authority:

- Reconciliation of current projected City and County capital improvement programs, consent decree cost obligations and other planned capital commitments to establish initial baseline Special District or Authority CIP program;
- Reconciliation of any differences between City and County contracting/ procurement procedures, design standards, standard details, performance standards, materials, and equipment; and
- Definition of jurisdictional boundaries and service area expansion.

Resolving these issues can be made part of the scope of work for the Transition SME Work Groups recommended to be constituted (See Section 9).

Decision making processes framework

All Board policy decisions would ultimately be approved by the Board. The Board will retain an Executive Director and the Executive Leadership team will be responsible to execute the policies and make day-to-day operational decisions. The founding documents and by-laws of the Special Authority would need to specify what matters would require a super majority vote.

Ongoing O&M framework

The Board would establish processes and procedures the executive leadership team to provide leadership and direction for all O&M functions consistent with Board-approved policies and procedures.

Some considerations to keep in mind while structuring O&M policies and procedures are:

- Developing a publicly accessible performance dashboard that contains key O&M performance indicators (KPIs). These should be tracked and updated at least quarterly. Example KPIs include: drought conditions, turnover rates, regulatory compliance, customer response time, water loss, etc.;
- How differences in City and County position descriptions, salary, and benefits will be reconciled; and
- Developing a program to protect against service disconnections and fund bill pay assistance program.

Choices to consider in structuring the Special Authority

There are three key choices in structuring the Special Authority that would need to be considered during the transition phase:

- Turnkey and/or wholesale structure;
- Uniform vs. district rate structure; and
- Rate setting function.

Turnkey and/or wholesale structure

As shown in **Figure 15**, in terms of scope of service provision, the Special Authority could be structured as a turnkey utility and/or a wholesale utility. Both these versions were discussed during Task Force meetings and the discussion is summarized here; however, there are several details to be determined in the context of implementing this model.

In a turnkey option, a new service area would be constituted that combines the customer base currently served by Baltimore City and Baltimore County. The Special Authority would be responsible for retail service provision to all customers within this new service area.

In a wholesale option, the Special Authority would function as a wholesaler to Baltimore City and Baltimore County under a wholesale service purchase agreement. Baltimore City and Baltimore County

would maintain retail networks and relationships with customers in their respective service areas.

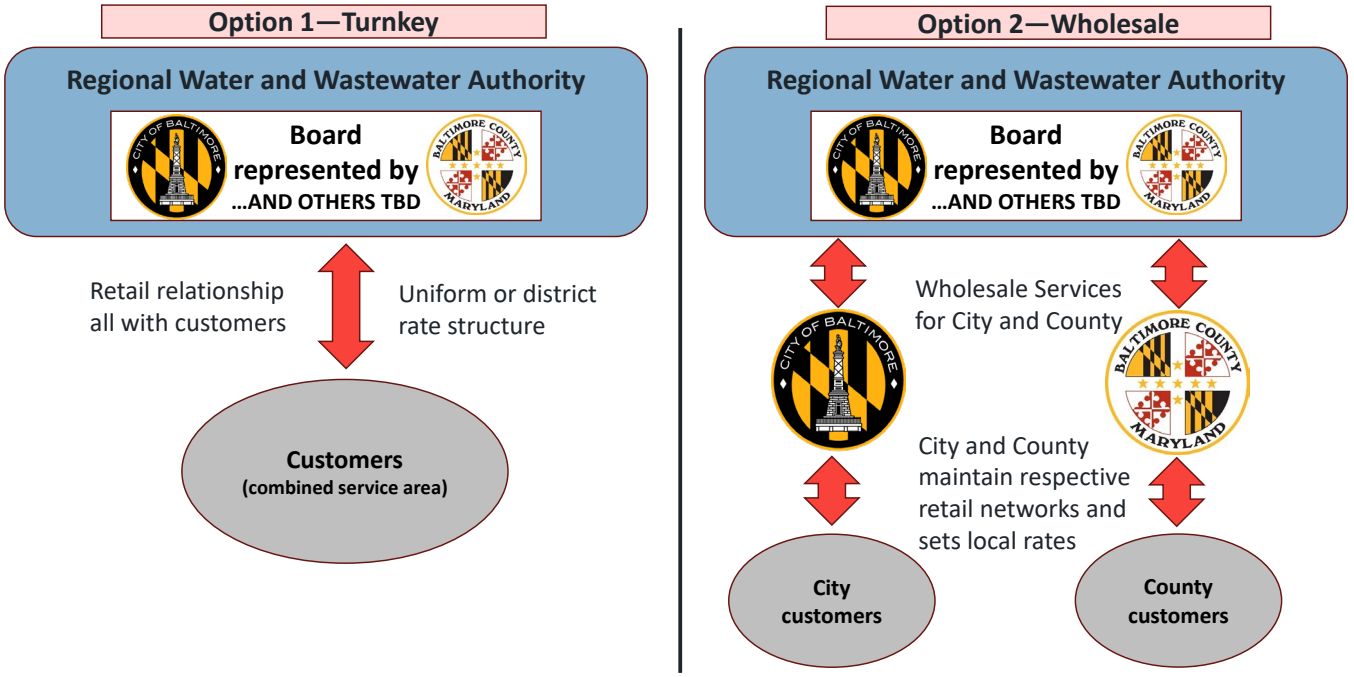

Figure 15: Special Authority model options—turnkey v. wholesale utility

Uniform vs. district rate structure

Within the Turnkey option described above, another choice point is to decide whether to implement uniform rates or district rates. In case of uniform rates, customers within a rate class will pay the same rates regardless of their location in the City or County. This rate structure is based on a regional cost of service study and rate design. Implementing this option would involve reconciling or restructuring rate structures and ratepayer assistance programs in the service area, such that the same rate structure is applied to customers in both Baltimore City and Baltimore County.

In case of district rates, the rate structures would be based on a rate design for each district. This results in the same rate schedule applied to all customers in a district within the service area. This means that different rate structures are applicable depending on location within the Special Authority's service area.

Rate setting function

The rate setting function in a Special Authority could be performed by the Board of Directors or by an independent body such as a rate setting board specifically constituted for this purpose. The City of Philadelphia provides an example of this rate setting board model in the water and wastewater sector, which is described in Box 7.

BOX 7: CITY OF PHILADELPHIA WATER, SEWER, AND STORM WATER RATE BOARD

The City of Philadelphia Water, Sewer, and Storm Water Rate Board (the Board) was established through legislation to replace the City Water Department as the entity responsible for setting water, wastewater, and storm water rates in 2012. The Board was formed through a legislation authorizing the City Council to establish an independent rate making body and specify rate setting procedures through ordinances.

The Board comprises five members serving staggered terms, appointed by the Mayor, that continue to serve until a replacement is installed.

The Board shall "evaluate and determine proposed changes to the rates and charges fixed for supplying water, sewer and storm water service for accounts and properties located in the City of Philadelphia" (Section II.1.(a), Regulations of the Philadelphia Water, Sewer and Storm Water Rate Board). The Board carries out its charge through a rate setting process set out in the Regulations of The Philadelphia Water, Sewer and Storm Water Rate Board (Board Regulations). Briefly, the process is initiated by the City Department of Water when it files an Advance Notice of proposed rate changes. This is followed by a Formal Notice of proposed changes. The Board must respond with its Rate Determination within 120 days of the Formal Notice being filed. The last step in the process is for the City to publish the revised rates and charges approved by the Law Department, along with the dates when these revised rates and charges go into effect. The rate determination process is centered around ensuring openness, transparency, and space for public comment.[10]

For the Baltimore region, a similar rate setting board may or may not be considered. This board will be responsible for reviewing the utility's rate recommendation and performance to determine rate changes for water and sewer services in accordance with an open, transparent, and consultative process, based on an established methodology. The rate setting board would also be responsible for expanding the meaning of safe, reliable, and reasonable service to include equity impacts and consider distributive justice in utility program design and pricing.

There was considerable discussion by the Task Force members at Meeting No. 5 about the function of and need for a separate Rate Setting Board. The Consultant's recommendation presented at that Task Force meeting was based upon the model used in the City of Philadelphia that is utilized to promote transparency and customer engagement in its rate making decisions. It was presented as it would help to reflect that the public's interests are considered in the rate making process. A separate rate making board may entail adding additional costs to the utility's budget. For example, the City of Philadelphia reported that the independent rate board's last set of proceedings for a rate case cost US$1 million overall.

The steps involved in Philadelphia during the rate making process are as follows;

- Advance Notice of Filing
- Discovery – Cost of Service
- Formal Notice
- Federal Funding Information Request; City Council Briefing
- Public Input
- Public Hearings

[10] City of Philadelphia. Water, Sewer, & Storm Water Rate Board. Available at: https://www.phila.gov/departments/water-sewer-storm-water-rate-board/about/ Last accessed December 4, 2023.

- Motions and Procedural Orders
- Participant Testimony
- Technical Hearing
- Participant Briefs
- Hearing Officer Report
- Rate Determination
- Publish New Rates and Charges

These steps are included to help ensure that rates proposed for consideration and approval are evaluated in a very open, transparent and community focused manner. The new Special Authority will need to set rates that can support sustainable and reliable utility service long-term.

The need for an independent rate board will be dependent upon the extent of, and the requirements for the utility board members to have utility finance and budgeting, legal, banking, insurance, construction, or operational management experience and have a customer and community service focus. The Consultant stated in Meeting No. 5 that it was also feasible, and it is in fact more common, for utility authority Boards to conduct their own rate proceedings and establish rates that provide for both full-cost pricing and address affordability as matters of equal importance. **In deciding on whether to recommend a rate setting board as part of its final governance model selection, the Task Force should consider which governance structure will be best able to operate with the continuity and long-term planning needed to achieve sustainable and reliable utility service in what may be a difficult political environment.**

Model D: Wholesale service purchase agreement

In Model D, the City owns and operates a wholesale utility providing wholesale service to any other jurisdiction beyond the City's border as shown in **Figure 16**. Consequently, the City and County would become the local water and sewer service providers. The relationship between Baltimore City and Baltimore County would be governed by a wholesale agreement. City DPW makes decisions about water system and the Joint Use Wastewater facilities in terms this agreement between Baltimore City and other Counties (including Baltimore County). City DPW and County DPWT continue to make policy and strategic decisions for respective jurisdictions. Retail networks and relationships would continue to be managed by the City DPW in the City and the County DPWT in the County. Finally, systemic issues relating to HR and management would need to be handled independently by each jurisdiction coordinating with each other as needed.

Another suggestion for consideration is the establishment of a rate setting board as described in Model E. It is important to note that the choice to establish an independent rate setting board is independent of the governance model chosen. In the context of Model D, the rate setting board would review the utility's rate recommendation and performance and solicit community input to determine rate changes for water and sewer services and use a defined open, transparent, collaborative rate review process.

Figure 16: Model D, Wholesale Service Purchase Agreement

Before any additional discussion on Model D took place, the Task Force in Meeting No. 5 called for a vote to eliminate Model D from any further consideration by the Task Force based upon the information provided leading up to Meeting 5. There had been previous discussion at the Task Force about how a city owned and

managed wholesale utility may be the most unsuitable form of governance as it related to interjurisdictional cooperation than the existing Intermunicipal Agreement model.

This is because the wholesale agreement would mainly provide for the bulk purchases and delivery of water, or for the treatment and conveyance of sewerage, leaving little opportunity for genuine interjurisdictional cooperation. This means there will be limited opportunity or ability to address those issues identified as problematic but that are outside the purview and perhaps the ability of the wholesale agreement to deal with such as employee recruitment, retention, training (succession planning), knowledge capture and documentation of standard operating procedures.

The vote to exclude Model D from further consideration was taken by the Task Force in Meeting No. 5, based on the Model's lack of merits. The vote to eliminate Model D passed and there was no additional consideration given to assess Model D at Meeting No. 5 or as part of the Task's Force's final deliberations for a selected best governance model for the region.

TASK FORCE DECISION MEETING 5

The Task Force voted to exclude Model D: Wholesale Service Purchase Agreements from further consideration.

The rest of this section presents information provided in the slides for meeting No. 5 for Model D that the Task Force had the opportunity to consider prior to their vote to exclude it from further consideration in addition to the previous information that had been provided in prior Meetings that defined Model D's attributes.

Governance framework

It was recommended that the Bureau of Water and Wastewater currently housed within the Department of Public Works be elevated to the level of a Department within the City. The City's Director of Water and Wastewater would make all decisions about the water system and the Joint Use Wastewater facilities including those relating to: budget and resource allocation, personnel hiring and terminations, organization structure, performance accountability, strategic priorities, management of the reservoirs and capital priorities.

A wholesale agreement would govern the relationship between Baltimore City and counties that it supplies services to (including Baltimore County). This agreement must have adequate mechanisms in place to ensure the City Water & Sewer Department implements policy and rate setting processes that are transparent. It should also provide for ample notice regarding proposed changes to long-range planning, capacity management, regulatory compliance, service interruptions, service level changes and uncontrollable events such that purchasers have time to adapt.

Financing framework

The City DPW would be responsible for raising finance to meet planned capital expenses through bonds, loans, and PAYGO. Counties raise finances needed to meet their wholesale purchase and any locally retained utility expenses.

An important factor to consider is that the City DPW would be required to finance all debt needed to meet the City's delivery commitments under the wholesale agreement. The County would no longer provide financing contributions for any capital expenses to the City as is currently the case (due to the Cost Allocation Model). The City would need to assess its ability to borrow for increased capital needs under this model, which needs could range from US$200 million to US$1 billion.

Capital planning and future system capacity expansion framework

The City Water and Wastewater Department would be responsible for capital planning to meet delivery commitments under the wholesale agreement and commitments to its retail customers. Baltimore County and other counties would be responsible for any capital planning to manage its retained retail utility assets. Similarly, in terms of capacity expansion, City DPW would be responsible for planning and implementing expansions needed to meet commitments under wholesale agreement and for those of its retail network. Counties would be responsible for expansion of their respective retail networks only.

In terms of decisions and processes, City and Counties follow respective capital planning processes (as is the case now). The City Water and Wastewater Department must plan to meet all the wholesale customer's delivery commitments under the wholesale agreement.

Here too, an important factor to consider in capital planning is that the County would no longer contribute capital costs to the City Water and Wastewater Department upfront. The County's share would be recovered through the contractually agreed upon wholesale rates.

The wholesale agreement would need to include provisions that address managing customer demands and the City's ability and obligation to provide adequate service. In terms of capacity expansion, the success would be dependent upon mechanisms/processes put in place in the wholesale agreement to ensure that the joint planning function or coordination is carried out effectively during Wholesale Rate Making and under customer annual reporting requirements in wholesale agreement.

Decision making processes framework

Frameworks for decision making processes would be mostly the same as the status quo except that the entity responsible for putting in place these processes would be the City Department of Water and Wastewater. An issue to consider during implementation is the County's retail water billing. When the City becomes a wholesale provider of water, it would not typically maintain the County's retail accounts and water billing.

Ongoing O&M framework

This model may limit interjurisdictional O&M. Baltimore County retains all retail water and sewer Systems O&M, rate setting, and may assume all retail billing and collections in its service area. County may need to develop systems and processes for retail billing and collections in its service area or contract for billing and collection services by City. City retains City retail Water & Sewer Systems O&M, rate setting, billing, and collections in its service area.

Model C: Intermunicipal agreement

In Model C, both the City DPW and County DPWT operate jointly under a modified Interlocal Agreement for providing service within both the City and County's Metropolitan District. However, they only can operate jointly where and as provided for in the Interlocal Agreement and only to the extent that is consistent with the authorities provided respectively to the City and County under the City and County Charters and State law. **Figure 17** presents the indicative structure of this model. City DPW and the County DPWT would continue to make policy and strategic decisions for their respective jurisdictions. Systemic issues relating to HR and management would need to be handled independently by each jurisdiction coordinating with each other as needed.

Figure 17: Model C, Intermunicipal Agreement

As stated earlier, this section presents the framework for a modified intermunicipal agreement for improved coordination between the two utilities is discussed (modified IMA). These modifications discussed fall in two categories: changes to the City structure and changes to the intermunicipal agreement. It is important to note that **the model discussed in this section is not the same as the status quo.**

Recommended changes to the City structure

It is recommended that the Bureau of Water and Wastewater be elevated to a City Department as the City Department of Water and Wastewater. This would require elevating leadership positions and reallocating administrative support services. An amendment to the City Charter may be needed to achieve this.

Separately, we recommend that processes and procedures be mandated for audited enterprise fund financials; consultations with other jurisdictions for capital planning and timing; and preparation, publication, and approval of the 5-year and 10-year Capital Improvement Plan (CIP).

Another suggestion for consideration is the establishment of a rate setting board as described in Model E. It is important to note that the choice to establish an independent rate setting board is independent of the governance model chosen. In the context of Model C, the rate setting board would review the utility's rate recommendation and performance and solicit community input to determine rate changes for water and sewer services and use a defined open, transparent, collaborative rate review process.

To address some of the systemic issues such as those relating to employee recruitment; and retention and training; the City and County DPWT should individually:

- Periodically conduct salary studies with water & sewer comparators and implement to achieve parity within industry peers to attract and retain talent;
- Develop exit interview information collection approach to assess drivers for departures;
- Develop succession plans for all key positions retiring within the next five years (that includes skill enhancement training);
- Develop workforce development community-based initiatives;
- Track and report on open positions, new hires, departures, net headcount;
- Identify and implement best industry practices for retention of Institutional knowledge;
- Develop/publish Utility Billing Relief Program;
- Annually publish a 5-year forecast of rates; and
- Annually track cost of service expenses (reconcilable to last Cost of Service Study) to inform rate setting in the future.

To tackle some of the issues surrounding cost allocation, the City and the County should jointly:

- Review and update the CAM to remove calculations that are artifacts of previous billing, meter reading, and accounting systems, and to fully document all input assumptions.
- Prepare a Contract Administration Memorandum to document its procedures for use (or for basis of assumptions used)
- Document the standard annual procedures and milestone deadlines for developing the annual cost sharing allocation.

Other modifications to consider for the IMA include:

- Establishing processes for the utilities to collaborate on long range strategic and capital planning effectively and periodically as well as system expansion objectives,
- Instituting a process that obligates parties to systematic and periodic consultation between the two W&S agencies to ensure coordinated decision making.
- Requiring periodic management audits and publish the results.
- Developing requirements and mechanism to publish and track performance against strategic KPIs to foster transparency and accountability (E.g., #/% Invoices Past Due, Percent of Total Revenue Water Deliveries Calculated Using Meters, Reg. Complaints, Service Quality Complaints, First Call Resolution, Appointments Missed, etc.). These metrics should be used as inputs to the rate setting process.
- Establishing and funding a joint office for managing customer service, billings and collections.

Governance framework

The governance framework under Model C would be similar to the status quo except that the Bureau of Water and Wastewater would become a Department within the City government. In terms of decisions and processes, the modified IMA would promote or require collaboration by the City DPW for decisions affecting the County customers. For example, joint management or engagement on long term planning, drought response, capacity expansion, CIP prioritization, as well as customer service and support is expected.

Financing framework

The frameworks for financing would be the same as status quo.

Capital planning and future system capacity expansion framework

No significant changes to the frameworks governing capital planning or future system capacity expansion are expected. Modifications to the IMA to promote or require collaboration between the City and County counterparts may bring changes to how the following are handled: long term planning, drought response, capacity expansion, and CIP prioritization.

Decision making processes framework

No significant changes to decision making processes are expected. Modifications to enhance collaboration between the City and County are recommended such as developing revised processes to:

- Ensure to that the City DPW's policies, procedures or decisions have been made in consultation with County utility representatives.
- Ensure collaboration occurs on essential matters such as strategic and long- range planning, capacity management, emergency response, regulatory compliance, service interruptions, service changes, safety issues.
- Establish periodic management audits, regularly publishing Key Performance Indicator metrics.

Ongoing O&M framework

The roles and responsibilities on O&M will not change significantly. However, there is potential to improve the status quo through modifications for improved interjurisdictional coordination such as:

- Conducting a joint review of CAM model, revising and documenting usage procedures.
- Adopting revenue assurance billing & collection quality control processes and procedures.
- Coordinating better on water and sewer billing and customer service issues. A joint office may be considered to accomplish this.
- Establishing performance requirements for effectively communicating City's water bill adjustments to the County to prevent issues with the County's subsequent use of water consumption data in the County's sewer billing.

Key issues and decisions for the Task Force's consideration in implementing Model C

In deciding whether to implement Model C as presented in this section, the Task Force was presented the following key issues and decisions to consider:

- The long-term effectiveness/enforceability of changes to the IMA and its ability to instill cooperation and accountability.
- If it is even possible to address systemic issues that are outside the purview of the IMA such as employee recruitment, retention, training (succession planning), knowledge capture and documentation of standard operating procedures. These matters may be limited by state and local law from being matters of joint consideration.
- The effectiveness of implementation of the coordination mechanisms set out in the modified IMA.

8. ALTERNATIVE GOVERNANCE MODELS: ASSESSMENT

This section presents the side-by-side comparative matrix of ratings to illustrate, qualitatively, the differences between the governance models under consideration for each area of improvement. The approach to this assessment is presented in Section 4. To recap, the rating rubric used for this assessment is presented in **Figure 18**.

A description of how each governance model under consideration may improve the performance of the City and County's water and wastewater utilities in each of the areas of improvement identified for consideration in HB843 to the Task Force follows.

What the ratings mean:	
++	Potential for significant benefit
+	Some benefit relative to status quo
SQ	Same as status quo
-	Some disadvantage over status quo
--	Potential for significant disadvantage
N/A	Not applicable

Figure 18: Rating rubric for alternative governance model assessment

Management

Based on a review of the status quo, the NewGen report highlighted the following areas for improvement that relate to Management:

- The City's Director of Public Works has the exclusive authority to make decisions about almost every aspect of the water system, including billing and metering policies and procedures, budget and resource allocation, personnel hiring and terminations, organization structure, strategic priorities, management of the reservoirs and capital priorities. Under the current governance framework, the City and the Director of Public Works are not accountable to the County's customer service delivery, system reliability or operational efficiency, customer billing issues and annual water reconciliation.
- The current governance framework does not support a culture of continuous improvement and accountability with respect to customer service delivery, system reliability and maintenance responsiveness.
- The current structure does not support effective inter-jurisdictional communications across all levels of the two organizations. As a result, there is no evidence that true collaboration and cooperation are occurring between the City and County on essential matters such as strategic planning, long-range planning, capacity management, emergency response, regulatory compliance, service interruptions, service changes, safety issues or other emerging areas of concern.
- The current (intermunicipal agreement) governance structure does not support the high level of coordination needed to project, plan, and execute system improvements to meet growing demand in Baltimore County and other jurisdictions. Although the current framework identifies a joint planning office to be staffed by City and County personnel for this purpose, there is no requirement for either jurisdiction to provide resources to ensure that this function is performed effectively and efficiently.
- There is no oversight process defined in statute or agreement to ensure that the Director of Public Works' policies, procedures or decisions are in the best interest of both City and County customers.
- While decisions made by the City's Director of Public Works often receive approval through the City Board of Estimates or oversight by the Baltimore City Council, many of these decisions have far-reaching implications for Baltimore County customers, but there is no mechanism for review by County elected officials.
- The current DPW-DPWT Intergovernmental Agreement governance structure has no requirement or mechanism to conduct strategic planning across jurisdictional boundaries. This means that

planning functions within the utility are not aligned with the City or County's strategic goals and priorities.

Assessment

Even given reasonable assumptions about possible improvements to the DPW- DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the Management issues cited earlier in this section. Model D, a City DPW - wholesale agreement with the County was assessed to be the most detrimental of all of the governance models considered as the coordination needed for collaboration on all of the matters involving interjurisdictional coordination and the City not being accountable to County for service delivery, would be significantly institutionally inhibited within a wholesale agreement relationship.

Figure 19 presents the matrix with the ratings for assessment of the governance models against the "Management" criterion.

MANAGEMENT			
Areas for improvement	**Model C**	**Model D**	**Model E**
Loss of institutional knowledge due to high turnover and high vacancy rates	+	+	++
Lack of institutional knowledge capture	+	SQ	++
City not accountable to County for service delivery, operational efficiency, or system reliability	SQ	-	++
No mechanism for systematic interjurisdictional coordination on strategic planning	+	-	++
Customer service performance or customer satisfaction not measured	+	+	++

Figure 19: Assessment rating matrix for Management

Operations

Based on a review of the status quo, the NewGen report highlighted the following areas for improvement that relate to Operations.

High turnover rate (loss of institutional knowledge) & standard operating procedures are not documented. High turnover rates that result in loss of institutional knowledge and standard operating procedures (SOPs) not being documented are both related components of a knowledge retention system. Standard Operating Procedures (SOPs) are the most basic element of a utility's knowledge retention system. They document the necessary steps involved in performing an O&M task. Knowledge retention makes information transferrable, takes information out of employees' heads and puts it into a utility operated central location, such as a O&M knowledge base.

Once SOPs are documented and centralized, utilities can access and utilize the information to standardize training and ensure work performance and as a result increase workforce accountability. In the absence of SOPs, procedural training is ad hoc and undocumented and consequently holding employees accountable for their performance is impaired because there are no definitive written standards of performance in evidence. The importance of knowledge retention generally and SOPs, in particular, cannot be overstated. It ensures that critical knowledge stays within the utility, even as individuals come and go. Without a knowledge retention strategy to document standardized processes, procedures, and related types of information, a utility is at risk of losing valuable resources every time a worker departs.

A knowledge retention strategy is a plan that organizations use to capture and preserve the knowledge of their workforce, including standard operating procedures, O&M practices, equipment information, plans and specifications and more. It involves creating a centralized hub to access knowledge, developing training programs, establishing knowledge management guidelines, and encouraging a culture of knowledge sharing and collaboration.

Given that the Special District or Authority will be essentially starting from a blank slate regarding both a knowledge retention system and SOPs but will have to contend with potentially significant amount of O&M change, it would only be a prudent industry practice to use its greater economy of scale and labor efficiency to marshal its resources and begin developing SOPs by identifying and producing mission critical and health and safety SOPs and then following up with the development of general SOPs. It is for this reason the Model E - Special District or Authority was assessed with the potential for significant benefit, while the Model D and Model C were ranked as having some potential for benefit.

City Maintenance Staff do not have Access to County's GIS Data and Lack of Systematic Coordination on Water Loss Management. Both the City maintenance staff not having access to County's GIS data and the lack of systematic coordination on water loss management are specific instances where the institutional limitations of a DPW to DPWT - Intermunicipal Agreement form of governance limit the free flow of data and inhibit the ability to coordinate systemically on interrelated problems faced by each respective Department's system.

Given that the Special District or Authority will not be limited by the institutional barriers to interjurisdiction cooperation and collaboration inherent in governance models D and C, there is no reason to believe these limitations would continue to exist after implementing Model E - Special District or Authority.

Lack of systematic coordination on water loss management. AWWA indicates that drinking water utilities are challenged by deteriorating infrastructure, growing customer expectations, new regulatory requirements, and a changing climate. Recognizing that "what gets measured, gets managed", water utilities rely on performance indicators that are "actionable" to drive improvements in their operations. Water loss control includes efforts that water utilities employ to minimize Non Revenue Water (NRW), which comprises real (physical) losses, largely leakage, apparent (non-physical) losses that result in customer under-billing, and unbilled authorized consumption.

High levels of NRW will have a serious impact on the financial viability of water utilities and whole communities due to revenue losses and unnecessarily high operating costs. NRW thus directly affects the capacity of water utilities to fund necessary service expansions, conduct proper maintenance and invest in new technology. NRW losses can be real, physical losses (caused by leaks, breaks, spills, etc.) or only apparent losses that occur as a result of broken or tampered meters, poor meter reading, inaccurate record keeping, or unbilled water consumption that is authorized but not properly read or recorded by the utility, or outright water theft. Real losses are obvious, caused by leaks and breaks in transmission mains, storage tanks, cisterns, distribution pipelines, and individual service connections. The NewGen Report indicated that 20 % of the water supplied was NRW and the (Year-2019) costs associated with that NRW was $15,087,978. Maryland sets an action level for when more than 10% of water withdrawn is unaccounted for. AWWA has recently recommended against setting loss reduction goals around a specific target such as "less than 10%", recognizing that loss reduction targets are best tailored as system specific goals for each water utility rather than a "one size fits all" approach. Consequently, a key consideration regarding NRW control is the economic level of leakage (ELL). ELL is defined as "the level of leakage where the marginal cost of active leakage control equals the marginal cost of the leaking water".

Given that the Special District or Authority will not be limited by the institutional barriers to interjurisdiction cooperation and collaboration inherent in governance models D and C, there is every reason to believe that systematic coordination on water loss management would be the de facto state of affairs after implementing Model E - Special District or Authority.

AWWA supports the use of the Loss Cost Rate indicator, a new KPI expressed in value /service connection/year, with one expression for apparent losses and one for real (leakage) losses. These KPIs measure the negative impact of losses to a utility's finances. AWWA supports the use of the Normalized Water Losses indicator, a new KPI expressed in volume/service connection/day. Water losses is the sum of apparent losses and real losses. It is meant to be employed only as a high-level indicator and in tandem with the disaggregated normalized KPIs: Normalized Apparent Loss (volume/service connection/day) and Normalized Real Loss (volume/service connection/day). To better understand or consider using these KPIs for measuring Non-Revenue Water Loss control when implementing Model E please refer to the AWWA report titled *Key Performance Indicators for Non-Revenue Water, AWWA Technical and Education Council's Water Loss Control Committee, November 2019*.

Even given reasonable assumptions about possible improvements to the DPW- DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the Operations issues cited earlier in this section.

Figure 20 presents the matrix with the ratings for assessment of the governance models against the "Operations" criterion.

OPERATIONS			
Areas for improvement	**Model C**	**Model D**	**Model E**
High turnover rate (loss of institutional knowledge)	+	+	++
Standard operating procedures are not documented	+	+	++
County does not have access to City's work order system	SQ	SQ	++
City maintenance staff do not have access to County's GIS data	SQ	SQ	++
Lack of systematic coordination on water loss management	SQ	SQ	++

Figure 20: Assessment rating matrix for Operations

Employee recruitment

In relation to employee recruitment, the New Gen Report highlighted the issues of higher than industry average vacancy rates especially for key positions and high turnover rate (loss of institutional knowledge). One area of particular concern cited in the NewGen report at both the City and County was a high employee turnover rate and loss of institutional knowledge practically at the senior leadership level positions. These were cited as recruitment and retention and the related but flip side issues.

NewGen surveyed City and County managers to provide feedback on how they thought many of these organizational constraints that impacted turnover and retention and how they could be addressed. Some of the responses in the NewGen Report are listed below.

- Some of the independence from politics;
- A strong, long-term vision unaffected by transitions in administrations;
- Modification as to how the HR, procurement, and training support functions work with operations staff; and
- Adjustments to salaries to make them competitive with that of other utilities and private firms.

Since the NewGen report was published the City has conducted a salary survey for the Water and Wastewater Bureau. The rate increases are being implemented to help in some part mitigate the high turnover rate. However, it was noted that given the occurrence of the recent compensation study and the extent of the demand in the City overall to conduct similar departmental compensation studies, it will likely be a while before another compensation study of the Water and Wastewater Bureau would occur. WSP cites this as an example of how a Department or Bureau in a City government structure naturally institutionally competes for resources and services within the overall City administration. Alternatively, an Authority with a single purpose can maintain a greater focus and emphasis on its mission and may have greater flexibility in pursuing their objectives.

Safe operation of the nation's drinking water and wastewater utilities (water utilities) depends partly on continuous access to a qualified workforce, particularly sufficient numbers of certified water operators—workers who run the equipment and control the treatment processes for drinking water and wastewater. According to the 2016 Environmental Protection Agency (EPA) Drinking Water Action Plan, a well-trained and knowledgeable workforce that implements proper assessment and management of water utility

assets is vital to providing safe drinking water and ensuring the long-term sustainability of public water systems.

Given that the Special District or Authority will be a single purpose agency lead by a board of directors with demonstrated competencies relating to effective utility management, will have greater economies of scale and greater flexibility or responsiveness regarding management of competitive salaries, training, and benefits. It is for these reasons that Model E - Special District or Authority was assessed with the potential for either some or for significant benefit, while the Model D and Model C were ranked either as having some potential for benefit or expected to perform consistent with the current status quo.

Assessment

Even given reasonable assumptions about possible improvements to the DPW- DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the Employee Recruitment issues cited earlier in this section.

Figure 21 presents the matrix with the ratings for assessment of the governance models against the "Employee Recruitment" criterion.

EMPLOYEE RECRUITMENT			
Areas for improvement	**Model C**	**Model D**	**Model E**
Higher than industry average vacancy rates esp. for key positions	+	+	++
High turnover rate (loss of institutional knowledge)	+	+	++

Figure 21: Assessment rating matrix for Employee Recruitment

Retention and training

The 2023 SOTWI survey provided an open-ended question asking participants whether there were other issues they felt ranked at least "very important" but were not listed. Workforce issues were a common write-in response—in particular, how to attract, train, and pay the water workforce of tomorrow. Respondents pointed out that the public's value and respect for water professionals is critical for attracting qualified staff and that training operators for both exam certification as well as long-term professional development is also a challenge. High school courses, trade schools, and college education need to be tailored to water system operations. Not surprisingly, pay is a significant issue. Respondents expressed that compensation should be comparable to other careers in the industry, allowing systems to attract and retain operators and staff. In the past, others have pointed out that along with aging infrastructure we have an aging workforce. Respondents in 2023 noted that knowledge retention within the industry, and specifically of operators, is a major concern.

Examples of workforce issues throughout the water industry

Engage. It is critical to value the people and employees dedicated to providing safe water and wastewater services to our communities. Recent and upcoming retirements coupled with low recruitment are continued workforce concerns.

Compensate. Compensation needs to be comparable to other careers to encourage retention and recruitment within the industry. Compensation should reflect the importance of water industry professions.

Train. Operators need access to training programs and materials for exam preparation and certification. High school courses, trade schools, and college education need programming tailored to water system operations. Knowledge retention within the industry, specifically of operators, is a major concern.

Workforce Training

Future workforce needs can be identified through strategic workforce planning, which involve developing long-term strategies for acquiring, developing, and retaining staff to achieve program goals.

Five federal agencies – EPA and the Departments of Agriculture (USDA), Labor (DOL), Education, and Veterans Affairs (VA)—have programs or activities that can assist utilities with utility workforce needs in

several ways, including through guidance, funding, and training. Additionally, reviewing other workforce programs of similar agencies can leverage industry knowledge and tailor a program to the meet the regional and community's needs. A link to EPA workforce training reference can be found at: https://www.epa.gov/dwcapacity/water-workforce-training-programs.

Given that the Special District or Authority will be a single purpose agency led by a board of directors with demonstrated competencies relating to effective utility management, will have greater economies of scale and greater flexibility or responsiveness regarding management of competitive salaries, training, and benefits. It is for these reasons that Model E – Special District or Authority was assessed with some potential benefit, while the Model D and Model C were ranked as expected to perform consistent with the current status quo.

Assessment

In the assessment of how the three governance approaches may improve Retention and Training, even given reasonable assumptions about possible improvements to the DPW- DPWT Intergovernmental Agreement governance structure, Model C, the governance structure with the greatest merit to providing improvements to the Retention and Training issues cited is Model E, Special District or Authority.

Figure 22 presents the matrix with the ratings for assessment of the governance models against the "Retention and Training" criterion.

RETENTION AND TRAINING			
Areas for improvement	**Model C**	**Model D**	**Model E**
Loss of institutional knowledge due to high turnover and high vacancy rates	SQ	SQ	+
Salaries are not market competitive*	SQ	SQ	+

Figure 22: Assessment rating matrix for Retention and Training

Billing and collections

Given that the Special District or Authority will not be limited by the institutional barriers to interjurisdiction cooperation and collaboration institutionally inherent in governance models D and C, there is every reason to believe that systematic billing, collection, and revenue enhancement would be the de facto state of affairs after implementing Model E – Special District or Authority. Additionally, a new Special District or Authority, would in order to become financially sound be focused on optimizing the billing and collection processes to manage the receipt of revenues consistent with the approved billing polices. While the Model D and Model C were ranked as expected to perform consistent with the status quo, or with some potential benefit or in one category in the case of Model D worse than the current status quo. As the Model D wholesale utility would sell water in bulk to the County, the County would need to reconstruct a substantially or entirely new water and sewer billing process.

Assessment

Even given reasonable assumptions about possible improvements to the DPW-DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the Billings and Collections issues cited earlier in this section.

Figure 23 presents the matrix with the ratings for assessment of the governance models against the "Billing and Collections" criterion.

BILLING AND COLLECTIONS			
Areas for improvement	**Model C**	**Model D**	**Model E**
QA/QC process to ensure billing accuracy	+	+	++
Increase in customer delinquency since 2017	SQ	+	+
Long standing disputes over customer billing and annual water reconciliation	SQ	SQ	++
City's water billing adjustments and customer account changes inadequately communicated to County (impacting sewer billing)	+	-	++

Figure 23: Assessment rating matrix for Billing and Collections

Planning for capital improvements

Given that the Special District or Authority will be a single purpose agency lead by a board of directors with demonstrated competencies relating to effective utility management and that joint capital planning will be a point of both transition and long-term interests of its founding members, and that it will not be limited by the institutional barriers to interjurisdiction cooperation and collaboration institutionally inherent in governance models D and C, there is every reason to believe that systematic planning for capital improvements be the de facto state of affairs after implementing Model E - Special District or Authority. It is for these reasons that Model E - Special District or Authority was assessed with some or significant potential benefit, while the Model D and Model C were ranked as having some potential benefit or worse than the current status quo.

Assessment

Even given reasonable assumptions about possible improvements to the DPW- DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the area of planning for capital improvements.

Figure 24 presents the matrix with the ratings for assessment of the governance models against the "Planning for Capital Improvements" criterion.

PLANNING FOR CAPITAL IMPROVEMENTS			
Areas for improvement	**Model C**	**Model D**	**Model E**
No mechanisms/systems in place to ensure that the joint planning function is carried out effectively and efficiently (water and wastewater)	+	- -	++
Water Analyzer office is understaffed	+	+	++
No metrics are used to evaluate program performance	+	+	++

Figure 24: Assessment rating matrix for Planning for Capital Improvements

Emergency management

A major metropolitan water system that does not have a well-developed, approved, and well-coordinated and socialized Drought Response Plan is not consistent with prudent industry practices. The Newgen Report states that as of 2020 "An RFP for a comprehensive watershed plan, including a drought management component, has been issued." And then goes on to state that "the County and City both need coordinated [Drought Response] plans." The NewGen report references AWWA's M60 Drought Preparedness and Response as a guidance document for development and implementation of a drought Response Plan. The Consultant emphatically agrees that the County and City both need a well-coordinated, communicated, and socialized Drought Response plan. Planning for and preserving adequate water supplies

in the current error of climate change is a fundamental requirement of effective management of a water supply system and essential to support the regional health, welfare, and economy.

Given that the Special District or Authority will be a single purpose agency lead by a board of directors with demonstrated competencies relating to effective utility management and that Drought Response planning be both a transitional and long-term interest of its founding members, and that it will not be limited by the institutional barriers to interjurisdiction cooperation and collaboration institutionally inherent in governance models D and C, there is every reason to believe that systematic and regular planning for Drought Response be the de facto state of affairs after implementing Model E – Special District or Authority. It is for these reasons that Model E – Special District or Authority was assessed with significant potential benefit, while the Model D and Model C were ranked as having some potential benefit relative to the current status quo.

Assessment

Even given reasonable assumptions about possible improvements to the DPW- DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the area of emergency management.

Figure 25 presents the matrix with the ratings for assessment of the governance models against the "Emergency Management" criterion.

EMERGENCY MANAGEMENT			
Areas for improvement	**Model C**	**Model D**	**Model E**
No drought response and unclear drought response roles	SQ	SQ	+

Figure 25: Assessment rating matrix for Emergency Management

Rate stability for customers

Rate Affordability

NewGen report indicates that the City has a well-developed customer assistance program, the Water4All program that provides generous subsidies for low-income customers and senior citizens. The City's approach to its customer assistance programs is modeled on recognized best practice affordability programs. Baltimore County maintains programs to assist veterans and seniors with sewer bills.

The 2023 AWWA SOTWI survey respondents who identified as executive/ management and financial officers of utilities were asked if their utility offered an affordability program to assist low-income customers in paying their water and/or wastewater bill; 54% said they either had an affordability program in place or that assistance was offered elsewhere (e.g., through the city). Additionally, 66% of respondents indicated that they have flexible payment plans, 42% have external customer assistance programs, and 33% have utility-managed customer assistance programs. Late-payment fee suspension and bill credits or bill forgiveness are reported by 29% and 27% of respondents, respectively.

The City has undertaken several important initiatives to address water service and affordability issues. Those activities include many steps considered to be part of affordability programs. Upgrading existing meter technology to smart advanced metering infrastructure (AMI) system can reduce both operating costs and nonrevenue water losses. Moving to a monthly billing cycle and the creation of the Water4All program, that is a water billing discount program designed to create more equitable access to water assistance for more Baltimore City residents are beneficial elements of many affordability programs.

The existing City equity-based programs such as the Water4All program would continue under the new governance model including Model E. The consultant recommends that these existing programs focused on promoting equitable and affordable access to water continue or be expanded under the new governance model. If Model E is chosen, there will be an opportunity to expand these programs across the region/service area of the new authority, which may be a positive development from an equity perspective.

Affordability has been identified as one of the Threshold Issues that would need to be addressed as a transition period activity that would be necessary in order to Implement Model E- Special District or Authority. It was indicated that an Equity Assessment would be prepared during the transition that would address both affordability and equity in rate setting and policy.

Rate Predictability - Providing Sustainable and Reliable Utility Service

Full-Cost Pricing

AWWA holds that the best practice for provided water services to the public is by ensuring a self-sustaining enterprise which are adequately financed with rates and charges based on sound accounting, engineering, financial, and economic principles. Revenues from service charges, user rates, and capital charges (e.g., impact fees, system development charges) should be sufficient to enable utilities to provide for the full cost of service, including the following:

- Annual O&M expenses
- Capital costs (e.g., debt service, other capital outlays)
- Adequate working capital and required reserves.

Full-cost pricing—i.e., charging rates and fees that reflect the full cost of providing water and/or wastewater services—should include renewal and replacement costs for treatment, storage, distribution, and collection systems. Some utilities have previously kept their rates low by minimizing or ignoring renewal and replacement costs, but as the useful lives of our infrastructure systems come to an end, managers, and the communities they serve are forced to address these costs, sometimes through painful and unexpected rate increases. Issues related to equity and affordability must be considered as rates are adjusted, and each system has its own unique rate-setting challenges based on current conditions as well as recent developments and long-term history.

The 2023 SOTWI survey asked respondents who identified as utility executive/management and financial officers whether their utility has conducted a water and/or wastewater rate study in the past three years. The AWWA survey found that 27.3% of utilities are struggling to implement full-cost pricing.

Sustainable and Reliable Utility Service

To provide sustainable and reliable utility services it will be of critical importance that the City, County, and the new Authority in all cases address both Full Cost Pricing and Affordability as matters being of equal importance. Utilities must plan, build, operate, maintain, and replace the typically large and expensive assets that provide potable water and wastewater services. System stewardship entails how water and wastewater systems are operated, maintained, and replaced and replaced. Financial stewardship of the utility must include ensuring full cost recovery (i.e., pricing water to accurately reflect its true cost). This is particularly difficult now that the utilities' assets now are facing a critical time for renewal and replacement. However, to provided sustainable and reliable water and sewer services long-term requires adequate funding in order for the utility to be an effective steward of the utility systems. The transition to sustainable water and sewer utility systems presents opportunities to enhance affordability of water and sewer utility services and access to reliable clean water and a healthy environment for those disadvantaged by existing utility systems.

To be consistent with the objectives for ensuring sustainable and reliable rates, the Consultant has recommended that the new Authority be required to undertake the following financial planning and accounting processes and procedures.

- Adopt an Audited Financial Report
- Cause a Cost-of-Service Study to be performed to support rate increase.
- Annually reconcile its actual expenses to the Cost-of- Service study expenses
- Prepare and Publish for Board Approval, a Five and 10-Year Capital Improvement Plan, the CIP (fully reconciled with five-year rate forecast)

- Require Board Approval of Annual CIP Spending Plan (fully reconciled with Approved Annual Budget and Rates)
- Annually approve Budget to include:
    - A published Five-Year Rate Forecast fully reconciled with approved 5-Year CIP plan.
    - A long-term forecast of Service Demands of Special District or Authority's Service Area
- The City and Counties would be obligated to prepare a long and short term forecast of Service Demands that are to be relied upon by the Special District or Authority
- Approval or reconciliation with the of Annual CIP Spending Plan with the budget
- Require Board approval of any Capital Project contract.

Water & sewer systems, particularly in core cities, can produce inequities by race and income in the distribution of utility system costs and benefits. However, policy imperatives to reverse these inequities and transition to well-functioning infrastructure systems to mitigate very high urban asset rehabilitation costs and deferred investment on aging infrastructure are not mutually exclusive. Hence, the City, County and the new Authority must address both Full Cost Pricing and Affordability as matters being of equal importance.

Given that the Special District or Authority will be a single purpose agency lead by a board of directors with demonstrated competencies relating to effective utility management and that Rate Stability for Customers will be a transitional Threshold Issue and of long-term interest of its founding members, will have a greater economy of scale, and that it will not be limited by the institutional barriers to interjurisdiction cooperation and collaboration institutionally inherent in governance models D and C, there is every reason to believe that the greatest opportunity for long-term benefit to rate stability for customers exist after implementing Model E - Special District or Authority. It is for these reasons that Model E - Special District or Authority was assessed with either some, or significant potential benefit in most cases, while the Model D and Model C were ranked as having some potential benefit relative to the current status quo and maintaining the status quo, respectively.

Assessment

Even given reasonable assumptions about possible improvements to the DPW-DPWT Intergovernmental Agreement governance structure (Model C), Special District or Authority (Model E) emerges as the governance structure with the greatest merit to providing improvements to the area of rate stability.

Figure 26 presents the matrix with the ratings for assessment of the governance models against the "Rate Stability" criteria.

RATE STABILITY FOR CUSTOMERS			
Areas for improvement	**Model C**	**Model D**	**Model E**
Rate affordability	SQ	SQ	+
Rate predictability	+	+	+
Rate structure (for retail customers)	SQ	+	-
Rate structure (for wholesale customers)	SQ	+	+

Figure 26: Assessment rating matrix for Rate Stability for Customers

9. ALTERNATIVE GOVERNANCE MODELS: RECOMMENDATIONS

The objective of the Task Force is to make a recommendation for the governance model best suited for water and wastewater systems in the Baltimore region and for the necessary legislation and funding to establish the recommended model as directed in House Bill 843. On the merits, it is the opinion of the Consultant that the governance model that holds the greatest prospect to provide the optimal customer service, system reliability, and interjurisdictional collaboration is governance Model E, Special District or Authority. The Consultant also indicated that delivering the benefits of Model E, a Special District or Authority, also presented significant risks related to a series of threshold economic and community issues, that cannot be answered based upon a hypothetical conceptual governance model. Lastly, the Consultant recommended that the Task Force select as its preference Model E, but that the City and County commit sufficient resources to define the transactions and actions involved enough to resolve the threshold issues such that there is a reasonable basis to fully commit to implementing a regional authority. Based upon the information presented to the City and County representatives regarding Model E in response to Task Force Meeting No. 5 the following recommendation was developed for consideration for implementing Model E.

Model E- Special District or Authority – Threshold Issues

Delivering the benefits of Model E, a Special District or Authority that meets all the objectives defined in HB843 also presents significant risks to the City, County and region related to a series of threshold economic and community issues, (the Threshold Issues) that cannot be answered based upon consideration of a theoretic conceptual governance model.

WSP was tasked to make a recommendation to the Task Force for its consideration. After assessing all the information and factors required by HB843 and our scope to consider, the Consultant recommended that the Task Force select as its preference Model E on its merits. However, in light of the findings about the complexity of unresolved threshold issues and the actual depth of planning required to transition to Model E, we also recommended that the City and County commit sufficient resources to collaboratively define the specifics of that governance model and transactions and actions involved to transition to that governance structure in order to resolve the threshold issues.

If any of these threshold issues cannot be resolved equitably and economically, they each hold the potential to derail implementing Model E if the economics or community impacts prove unacceptable. Resolution of the following threshold issues is necessary in order to develop a detailed and comprehensive basis to have reasonable confidence that fully committing to implementing a Special Authority was possible:

- Final debt defeasance determination specifically to determine whether debt refinancing be required.
    - Defining acceptable contractual relationships City and Authority, and County and Authority so that existing City and County debt does not need to be refinanced.
    - Developing a financial transition plan that “Does no damage” to the Parties involved while facilitating standing–up the new authority.
    - Exploring potential role of MEDCO in near-term interim and initial Authority financings
- Resolution of transition options from City, County to Authority Pension.
- Develop asset lease or facilities use policies and strategies.
    - Baltimore City Charter may prohibit leasing of facilities.
    - Charter amendment required for City to lease assets to an authority.
    - Is a Rate Setting Board feasible or desirable to implement in the City, or for the Authority?
- Develop an Equity Assessment.

Transition approach

The remainder of this section describes the overall transition approach, the advisory groups that would be needed to implement the transition to a new governance model as well as an indicative cost estimates and schedule. Most importantly, this section defines a set of issues that would need to be satisfactorily resolved in order to successfully transition to Model E.

A general concept and sequence of transitioning to a new governance model was presented to the Task Force using **Figure 27**.

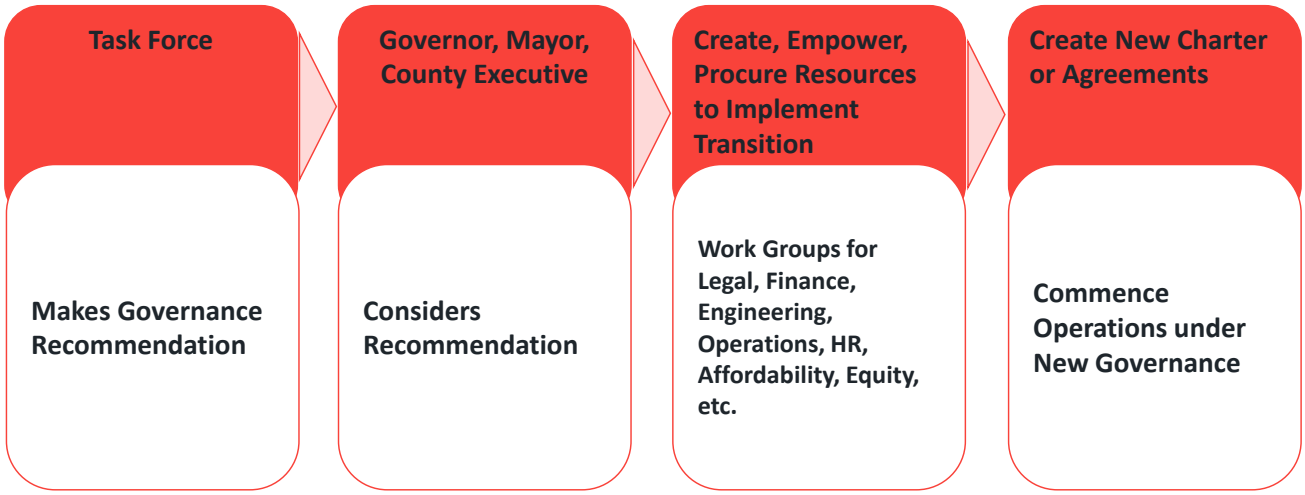

Figure 27: Overview of the recommended transition approach

The long-term recommendation is for future implementation of an Authority (Model E), supported by an 11-member Board of Directors with appointees from the City of Baltimore, Baltimore County, and the Governor of Maryland.

The transition approach to support this recommendation includes the following:

- In order to implement an Authority, further evaluation of several threshold issues should be conducted by a dedicated, professional Work Group. The threshold issues studied by the Work Group should include, but are not limited to, the following:
    - Legal: Assessment of any legal and legislative adjustments needed to transition to an Authority, including an analysis of changes needed to the City and County Charters.
    - Human Capital: Evaluation of the potential workforce for an Authority, including the transition of employee benefits, pension, and labor representation of existing City and County employees to a newly established authority model.
    - Financial: Development of a financial transition plan, including an analysis of pre-existing debt and the broader fiscal implications of moving to an authority model on each jurisdiction.
    - Equity: Oversee creation of an equity analysis to understand the implication of transition to a newly established authority of vulnerable residents in each jurisdiction, including recommended programming to support residents through impacts associated with transition.

Recommend improvements to the existing governance structure while further evaluation of a transition to an Authority is conducted (which could take several years) include the following:

- Establish a City-County Water Advisory Committee to ensure that the current operation is accountable to all ratepayers of the system.
    - Appointees of the City-County Water Advisory Committee would be selected by the Mayor of Baltimore City and Baltimore County Executive.
    - The scope of work for a City-County Water Advisory Committee should include, but are not limited to, the following:

- engagement in long-term planning, drought response, capacity planning, and CIP prioritization; and
- engagement in customer service, support and water and sewer billing issues.

- Perform a cost-of-service study to provide ratepayers with a clear understanding of how their water bills translate to the requirements of operating the system.
- Perform a joint equity assessment to evaluate the impact that the existing governance structure has on employees, customers, stakeholders and the environment, and recommend policy and project modifications to promote community well-being.
- Intermunicipal Agreement Improvements: It was observed and reported that the City and County have made improvements to improve the interjurisdictional cooperative efforts to better manage the performance of the shared facilities and it had additionally became apparent that the existing governance structure associated with the Intermunicipal Agreement would need to remain in place for an extended period of time until such time as the threshold issues related to Model E were sufficiently addressed, it was further advised that there should be short-term governance recommendations, including:
    - Document standard annual procedures and milestone deadlines for developing annual cost sharing allocations.
    - Prepare a Contract Administration Memorandum to document procedures for use.
- Consider and pursue legislative items for the upcoming legislative session including:
    - Provide support for establishing the Work Group to study implementation steps for a Regional Authority, including funding to support those groups that will evaluate the threshold issues listed above. Note that this may require the procurement of outside legal counsel to advise given the inherent conflict associated with advice from the legal counsel of the existing utilities.
- Maximize use of internal City and County agency resources:
    - Legal, noting however the above restriction.
    - Financial and Accounting
    - HR – Salary-Benefits - Pensions
    - O&M Performance - Benchmarking Best Practices
- Procure advisory support as needed.
- Create Charter/Bylaws for new Special District or Authority – obtain City/County/Legislative approvals.

Potential Configuration of the Transition Work Groups.

Examples of third-party services to support the Work Groups include facilitation, management consulting, financial and accounting, legal, investment banking, and employee relations and benefits support.

1. **Legal Work Group**
    - City-County Charter Amendments
    - Asset Lease
    - Water and Sewer Agreement
    - Authority Bylaws
    - Legislative Authorization
    - Bond indenture

2. **Human Capital Work Group**
    - Equity Plan addressing: safe, efficient, equitable, and affordable
    - Authority Compensation plan
    - Reviewing options for benefits
    - Reviewing options for retirement plans,
    - Considering transition for collective bargaining agreements.
3. **Financial Work Group**
    - Creating a Financial Framework to Move Forward
    - Consolidation of finances
        - Existing debt management
        - New Debt management structure
    - Create financial framework for the region's ratepayers,
        - Assessing opportunities to realize cost savings,
        - optimize water and sewer infrastructure,
        - promote rate stability.
    - Financial Structure of the New Authority – Credit worthiness – MEDCO's role
    - Reconciling water and sewer rate design & rates
    - Producing a consensus financial proforma
    - Performing the legwork to allocate assets and created operational responsibilities and accountabilities.
    - Consolidating Billing and Collections, Customer Service
    - Creating the Consolidated CIP
    - Evaluating the "What Else" – joint capital projects
    - Authority Capital Planning Process
    - Strategic Plan
4. **Equity Work Group**
    - Equity analysis development
    - Public meetings and communications

Transition Cost Estimates & Schedule

According to industry comparators, the transition to an authority is estimated to cost between $5 million and $15 million. Transition costs assumptions are forward-looking and actual costs will be based on resource availability for yet undetermined set of issues, by parties not yet determined that will once formed determine the extent of need for third-party support. We have used a conceptual cost range from $5 million for Model C and $15 million for Models D and E , not including retirement benefit transition costs. These estimates are purely based upon industry comparators. The cost magnitude of transitioning retirement benefits remains unknown and therefore are a threshold issue. If the use of City/County human resources for supporting the transition is maximized, additional outside third party costs can be minimized.

For other utilities that have transitioned to a new authority structure, the timeline has taken from 12 to 24 months. A transition to Model E – Special District or Authority will require a timeframe closer to, or even

longer than 24 months given the nature and complexity of the threshold issues that must be addressed before an authority could be stood-up.

10. NEXT STEPS

This draft report is now posted for public comment and will be available until 5:00 P.M. on January 5, 2024. Comments from the public are welcome. The procedure for submitting comments on this report is to e-mail WaterGovernance@baltimorecity.gov or watergovernance@baltimorecountymd.gov.

Figure 28 presents the next steps on the path of reaching a final Task Force recommendation on the best governance model for the Baltimore water and wastewater systems. This Consultant's recommendation in the draft report to the Task Force will be discussed at Meeting No. 6, to be held virtually on January 8, 2024. Following the January 8, 2024 meeting, the Consultant will incorporate feedback from the Task Force that will include their consideration of the public's comments and prepare a Final Draft Report of Findings and Recommendations from the Task Force. This report will be posted online and then made part of the agenda for discussion and final adoption during Meeting No. 7 to be held virtually on January 25, 2024.

The Consultant will assist the Task Force in making any revisions necessary to prepare its Final Report of Findings and Recommendations. As required by HB843, the Task Force shall no later than January 30, 2024 report its findings and recommendations to the Mayor of Baltimore City, the County Executive of Baltimore County, the Governor, and, in accordance with § 2–1257 of the State Government Article, the General Assembly. It is expected that transition planning for implementing the final recommendation will begin from February 2024 onwards.

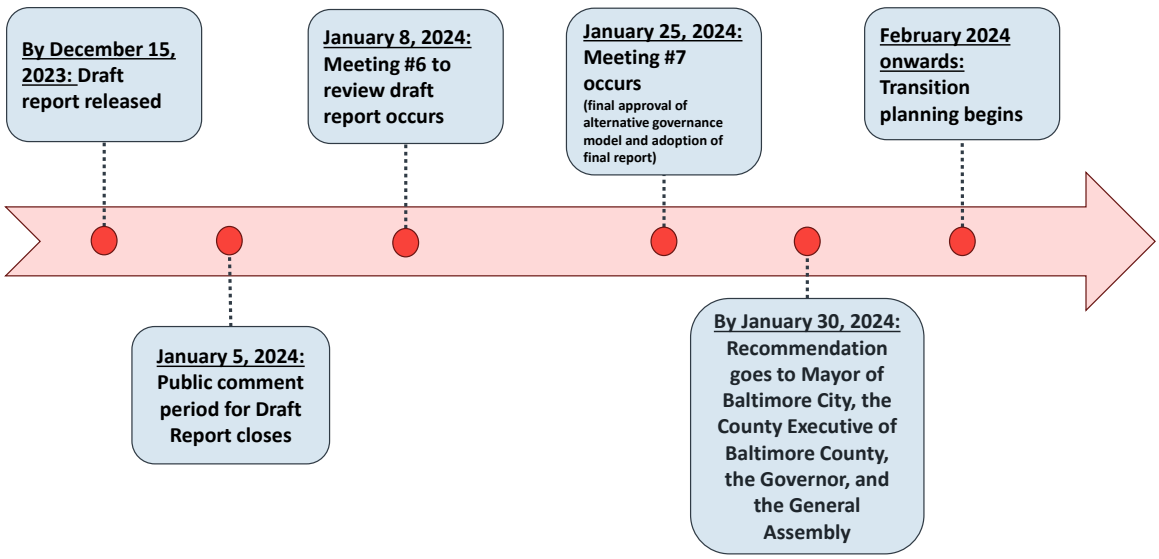

Figure 28: *Overview of next steps for selection of a new governance model*

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Appendix A

Background
The Task Force is charged with researching and coming to a decision on the best water governance model to recommend for the Baltimore region. To do this, they are supported by consultants at WSP. WSP put forward five models to consider for further research. These models are: Memorandums of Understanding, Cooperatives, Wholesale Service Purchase Agreements, Intermunicipal Service Agreements, and Special Districts. To support this research and provide examples to the public and the Task Force, WSP developed a table outlining different cities and their utility models that covers the model type, model background, and key information such as the rate setting process. Additionally, the Task Force requested WSP also include some information regarding stormwater. The intention of this is to provide greater context with which to help the Task Force make recommendations. This was also put together with input from the Task Force as to which utilities would be of interest.

Methodology
WSP based the 44 selected utilities on the following criteria:

1) Easily available information. The NewGen Business Process Review offered several utilities which were incorporated here and then many others were added.
2) Population and geography. Metropolitan areas that were similar in size to Baltimore with a similar geography and access to water.
3) Interest. Included several metropolitan areas or utilities specifically requested by the public and Task Force members.

Summary per Model Type
United States (39)

- Model A, Memorandum of Understanding (2): Loudoun Water-Loudoun County, Santa Maria-Nipomo;
- Model B, Cooperative (3): Bonita Springs Utilities, EJ Water Cooperative, Entranosa Water;
- Model C, Wholesale Service Purchase Agreement (7): AFCWRC, DC Water, Charlottesville, Great Lakes Water Authority Massachusetts Water Resources Authority, Metropolitan Water District of Southern California, San Diego County Water Authority, Tampa Bay Water;
- Model D, Intermunicipal Service Agreement (12): Town of Andover, City of Baltimore, Baltimore County, Buffalo Water, DC Water, Detroit Water and Sewerage District, Jefferson County Environmental Services, Louisville/Jefferson County Metropolitan Sewer District, Milwaukee Water Works, Nashville Metro Water Services, Portland, San Francisco; and
- Model E, Special District or Water/Wastewater Authority (10): City of Atlanta, Birmingham Water Works, Boston Water and Sewerage District, Cape Fear Public Utility Authority, DC Water, Louisville Water Company, Milwaukee Metropolitan Sewer District, Sacramento Area Sewer District, St. Louis County, WSSC Water.

Single City Utilities (5): KC Water, Philadelphia Department of Water, City of Richmond VA, City of Sacramento, City of St. Louis Water Division

International (5): Bristol (Privatized, Special District), Gold Coast (Wholesale Agreement with regional authority but owns own pipes), Bloemfontein (Special District), Kitchener (Special District), Winnipeg (Intermunicipal Agreement).

This table was put together entirely through online research and as such is limited to information that is in the public domain. It does not intend to serve as an exhaustive list of all relevant utilities. This research involved classifying each utility as one model or another, whenever possible, but the reality is that most utilities are a blend of more than one model. A city department, for example, may serve suburban communities outside its normal jurisdiction, or a special district may only address wastewater, making an additional utility necessary.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
City of Baltimore, MD	569,931	Serving Baltimore City and surrounding region, totaling 1.8 million people.	Baltimore Department of Public Works (DPW)	Intermunicipal Service Agreement	Combined water, wastewater, sanitation, and recycling authority. Provides wholesale services to neighboring areas	DPW submits request and Board of Estimates approves for water, sewer, and stormwater.	Yes, DPW manages stormwater in Baltimore. DOT supports maintenance and aspects of the adjacent physical infrastructure. Not a combined sewer system.
Baltimore County, MD	850,000	Water handled by Baltimore City. Sewage handled by County.	Baltimore County Bureau of Utilities	Intermunicipal Service Agreement	Baltimore City operates water utility, Baltimore County manages own wastewater collections through municipal Bureau of Public Utilities, but wastewater is treated by a City of Baltimore facility (Patapsco or Back River WWTP)	Baltimore DPW implements water rates set by Baltimore County. Baltimore County Financing and Petitions Office is responsible for setting wastewater rates.	No. Stormwater managed by Department of Environmental Protection & Sustainability. Not a combined sewer system.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
AFCWRC (Atlanta-Fulton Water Resources Commission)	1,000,000	Agreement between Atlanta and Fulton County	Atlanta Fulton County Water Resources Commission	County wholesale Utility formed to assure meeting the water supply needs of northern Fulton County and the City of Atlanta. Water from the water plant is sold by contact.	Run by Board of 7 (3 from Atlanta, 3 from Fulton County, one independent). The purpose of the joint venture is to develop plans for, acquire the necessary sites and governmental permits for and to construct and operate a water treatment plant and appurtenances in North Fulton County, Georgia, to serve the joint needs of Atlanta and Fulton County in assuring an adequate supply of potable water for the citizens of Atlanta and Fulton County. The water produced by the plant shall be delivered to the parties to this contract for their use. Additionally, the joint venture shall make investigations and coordinate additional joint planning and development for the efficient utilization of the water resources.	Managed by a Joint Venture Board of Commissioners consisting of seven members (3) from Atlanta, (3) form Fulton County and (1) one independent member.	Only manages water supply.
Andover-North Reading, MA	50,000	Established terms for Town of Andover to sell potable water to Town of North Reading	Town of Andover Water Division - North Reading Water Department	Intermunicipal Water Purchase Agreement	Owned by Town of Andover. Andover's Rates set by Andover Board of Selectmen	Rate determined by Town of Andover for its customers and North Reading sets the rates for its customers.	No. Stormwater not addressed in intermunicipal agreement. Andover does not have a combined sewer system.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Atlanta, GA	499,127	Drinking water also covers Fulton County, wastewater covers greater region.	City of Atlanta Department of Watershed Management	Special District formed 2002 to manage Atlanta's water, wastewater and stormwater systems to address consent decrees and provide City, Regional and State economic stability.	Owned by City of Atlanta. Responsible for the strategic planning and oversight of the O&M of the water treatment and distribution, wastewater collection and treatment and stormwater management.	Rates proposed by Department of Watershed Management. Water and Sewer Appeals Board approves, members appointed by City Council.	Yes. Stormwater managed by Department of Watershed Management, different office than water/sewer. City has combined sewer overflow treatment facilities. Combination of combined and separate sewer systems. To reduce combined sewer overflows, Atlanta has worked to separate the systems in key areas.
Birmingham, AL	200,000	BWW serves neighboring counties, nearly 800,000 total people.	Birmingham Water Works + Jefferson County Environmental Services	Special District (water) + Intermunicipal Service Agreement (sewer)	Jefferson County Environmental Services is a department of Jefferson County, AL. Birmingham Water Works is owned by City of Birmingham.	Birmingham Water Works Board of Directors is responsible for providing strategic direction, adopting the utility's operating and capital budgets, approving contracts, and setting rates. The Board consists of nine members, two appointed by the Mayor, four directors are appointed by the Birmingham City Council, one appointed by the Jefferson County Mayor's Association, one by the Shelby County Commission and one director is appointed by the Blount County Commission. Sewer rates appear to reflect the requirements of Jefferson County's bankruptcy agreement in 2013.	No. Managed by City of Birmingham Stormwater Management Division. Jefferson County sewer facilities are separate sewer systems
Bonita Springs Utilities	55,000	Serves Bonita Springs, FL and some neighboring communities	Bonita Springs Utilities	Cooperative	Not-for-profit water and wastewater utility cooperative founded by local citizens in 1970.	Established by the board as needed. The nine-member Board of Directors sets policy for BSU and meets twice a month to conduct Company business.	No. Stormwater is not managed by BSU. Not a combined sewer system,

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Boston, MA	650,706	Purchases water and sewer services from regional wholesaler (MWRA)	Boston Water and Sewer Commission	Special District with Wholesale Supply and Services Purchase Arrangement	BWSC owns and operates the water and sewer system. BWSC purchases water from the Massachusetts Water Resources Authority (MWRA), a wholesale supplier of water and wastewater services. Wastewater is treated by MWRA. BWSC is overseen by a three-member Board of Commissioners that is appointed by the mayor with the approval of the City Council.	Commission sets rates based on its own methodology.	Yes. BWSC manages stormwater. 80% of Boston is now served by separate stormwater systems. The remainder is served by combined sewers or no stormwater system.
Buffalo, NY	275,000	Suburban service primarily managed by Erie County Water Authority	Buffalo Water + Buffalo Sewer Authority	Buffalo Water Board in a NY public service corporation. BSA is an Authority that provides services to adjacent municipalities by Intermunicipal Service Agreement	Buffalo Water O&M is performed by Veolia through a Public-Private Partnership.	Buffalo Sewer Authority establishes rates and charges for sewer service.	Unclear, but Buffalo Sewer Authority prepared the jurisdiction's stormwater management plan. There are Combined Sewer Overflow events noted in the report.
Cape Fear, NC	440,000	Cape Fear is a regional utility authority covering the City of Wilmington and New Haven County, NC.	Cape Fear Public Utility Authority	Special District/Authority	Consolidation of formerly independent City and County water and sewer utilities into a new independent authority (Consolidation; Water and Wastewater Authority)	Rates are established by CFPUA board. Rates are set as part of the Authority's budget approval process and involves public consultation.	The City of Wilmington separately manages stormwater from their combined sewer system.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Charlottesville, VA	46,000	RWSA is a wholesale agency that provides impoundment, treatment, storage and transmission of potable water and transport and treatment of wastewater to the Charlottesville Public Works Department and the Albemarle County Service Authority, who in turn provide water and wastewater services to individual retail customers. Amounting to 150,000 total people.	Rivanna Water and Sewer Authority (RWSA)	Wholesale Service Purchase Arrangement	Regional wholesale supplier with retail City and County customers (Wholesale Service Purchase Arrangement, Collaborative Resource Development; Wholesale Service Purchase Agreement, Water and Sewer Authority).	Utility rates set by City Council.	Yes. Stormwater, water, and wastewater all managed by Department of Utilities but not by the RWSA. Stormwater uses separate infrastructure from sewer. Note: Charlottesville just supplies drinking water provided by RWSA.
Detroit, MI	620,376	Serves City of Detroit. GLWA serves as wholesale supplier to City and suburbs.	Detroit Water and Sewerage Department (DWSD)	Intermunicipal Service Agreement	Combined Water and Wastewater utility that operates as a branch of the city government overseen by the Board of Water Commissioners (BOWC).	GLWA sets rates for wholesale water supply. Detroit Board of Water Commissioners sets rates for DWSD customers.	Yes. DWSD manages stormwater. Uses a combined sewer system.
EJ Water Cooperative, IL	11,000	Serves Montgomery County, IL area.	EJ Water Cooperative	Cooperative	Member-owned, not-for-profit water utility.	Rate increases are based on the Consumer Pricing Index from the Bureau of Labor Statistics.	No. Provides drinking water only. Not a combined sewer system.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Entranosa Water, NM	7,100	Based in Tijeras, rural community near Albuquerque.	Entranosa Water & Wastewater Association	Cooperative	Entranosa Water & Wastewater is a non-profit, private, cooperative. The Board of Directors of Entranosa Water & Wastewater Association is the governing body of the association. The Board consists of a chairman, a vice chairman, secretary and treasurer and three board members. The board serves three-year staggered terms, is completely volunteer and is elected by votes from Entranosa's general membership during the annual meeting.	Determined by Board of Directors In accordance with association by-laws.	No. Drinking and wastewater only. Not a combined sewer system.
Kansas City, MO	509,297	KC Water does not supply Kansas City, KS across the border. North Kansas City, an independent city within the Kansas City metro, handles its own water and sewer infrastructure.	KC Water	City Utility Dept.	KC Water manages both water and wastewater in Kansas City. KC Water is regulated by the Kansas City, MO Code of Ordinances.	KC Water submits budget to Mayor and City Manager, who in turn submit budget to City Council. City Council acts as the Governance Board regarding rates and budget.	Yes. Stormwater is managed by KC Water. 56 square miles of 320 square mile total service area have a combined sewer system, generally the older parts of the city are combined sewers. KC Water has a federally mandated overflow control program (OCP).

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Loudoun County-Loudoun Water	425,000	Serves Loudoun County, VA, which is part of the greater DC area.	Loudoun County-Loudoun Water MOU	Memorandum of Understanding	The two parties wanted to cooperate on certain wastewater capital projects in unincorporated parts of the county. The MOU is a high-level document meant to clarify the roles and responsibilities between the two parties when undertaking such projects.	N/A	No, stormwater is not covered under the purview of the MOU. Loudoun County does not have a combined sewer system.
Louisville, KY	624,444	Provides retail service to those in Jefferson County and wholesale service to other counties in the region.	Louisville Water Company + Louisville/Jefferson County Metropolitan Sewer District	Special District (water), Intermunicipal Service Agreement (wastewater/sewer)	Separate water and wastewater utilities. Water Company is governed by the Board of Water Works. Water Company and MSD meet regularly as part of the One Water Partnership. Provides wholesale services to region.	Both utilities self-set rates. MSD Board votes on wastewater rates. Rate increases above 7% require Louisville Metro Council.	Yes. Louisville/Jefferson County Metropolitan Sewer District as the de facto municipal government manages sewer, stormwater and other local services. Not a combined sewer system.
Metropolitan Water District of Southern California	19,000,000	Supplies 40% of California's water resources (in Southern California)	Metropolitan Water District	Intermunicipal Agreement - Wholesale Water Supply Service for 29 agencies	Regional wholesaler	MWDSC is governed by a board of 38 Directors. Rates are set by the Board through the biennial budget process.	No stormwater management by agency. No sewer service provided.
Milwaukee, WI	563,305	MWW covers Milwaukee, Ozaukee and Waukesha Counties with 866,000 users while MMSD covers parts of additional neighboring counties with 1,100,000 users.	Milwaukee Water Works; Milwaukee Metropolitan Sewerage District	MWW - City owned Utility – Uses Intermunicipal Service Agreement; MMSD – Special District	Separate agencies for water and wastewater. Owned by City of Milwaukee and reports to Mayor. The wastewater treatment plants are operated by Veolia through a Public-Private Partnership.	Public Service Commission of Wisconsin sets water rates. Sewer rates set by Milwaukee Metropolitan Sewerage District Commission. In Wisconsin, sewer and stormwater utilities do not require Public Service Commission approval when establishing rates.	No. Stormwater is operated broadly by City of Milwaukee. Only 5% of MMSD service area uses a combined sewer system (one-third of Milwaukee).

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Montgomery & Prince George's Counties, MD,	1,900,000	Serves part of DC suburbs. Part of regional Blue Plains Intermunicipal Agreement.	WSSC Water – Washington Suburban Sanitary Commission	Special District	Water and sewer commission serving two large counties (Consolidation; Special District set up as a Commission)	The Commission recommends rates and charges, which must be approved by each County through the budget approval process,	No. Stormwater managed by Montgomery County Department of Environmental Protection / Prince George's County Department of the Environment. Not a combined sewer system.
Nashville, TN; Metropolitan Government of Nashville & Davidson County	683,622	Serves Nashville-Davidson County. 700,000 people total.	Metro Water Services	Intermunicipal Service Agreement	Water and Wastewater authority operating as a department of the Metropolitan Government of Nashville & Davidson County.	MWS sets rates. Must seek approval from Tennessee Comptroller and state Water and Wastewater Financing Board.	Yes. MWS manages stormwater. Nashville is primarily served by separated sewer and storm water systems. Some parts of the city are still served by combined sewer systems.
Philadelphia, PA	1,567,258	Covers the city and portions of neighboring Montgomery, Delaware, and Bucks counties, amounting to more than 2 million people.	Philadelphia Water Department	City Utility with one wholesale water Agreement and 10 wholesale wastewater contracts outside of the City.	City owned and financed water and wastewater. Mayor Appoints Water Commissioner- Water Department Commissioner responsibilities include oversight of drinking water treatment plants, wastewater treatment plants, and a contract-operated biosolids facility.	Rates set by independent body, The Philadelphia Water, Sewer, and Storm Water Rate Board. Board uses a process of board meetings and public rate hearings.	Yes. PWD manages stormwater with combination of combined and separated systems. 60% of Philadelphia is served by a combined sewer system.
Portland, OR	635,067	Portland Water Bureau supplies water to nearly a quarter of the state including via wholesale contracts	City of Portland Water Bureau + City of Portland Bureau of Environmental Services	Intermunicipal Service Agreement + wholesale service agreements	Separated systems for sewer and drinking water, but both managed by the City of Portland.	Rate study then approval by City Council.	Yes. Bureau of Environmental Services manages sewer and stormwater. Many older neighborhoods still have combined sewer systems. Portland dealt with its overflow problem by increasing capacity of the system in 2011.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Richmond, VA	226,600	Serves the City of Richmond and the Counties of Henrico and Chesterfield. Amounting to around 900,000 potential users.	City of Richmond, Department of Public Works	City Utility with Wholesale and Retail Service Purchase Arrangement with customers	Wholesale and retail customer relationship which evolved into the retail customer becoming an independent water supplier (Wholesale Service Purchase Arrangement; Wholesale Service Purchase Agreement). While Henrico is building its own water treatment capacity, it will continue to purchase treated water from Richmond through 2040.	Operating and financial relationship is governed by terms of the wholesale purchase agreement.	Yes. Combined Sewer System managed by Department of Public Utilities.
Sacramento, CA	528,001	City of Sacramento only serves 75,000 sewer customers. Sacramento Area Sewer District serves metro area (1.2 million).	City of Sacramento Department of Utilities	City Utility- Dept Intermunicipal Service Agreement (water and sewer) + Special District (sewer)	City of Sacramento Department of Utilities covers both water and wastewater. Sacramento Area Sewer District is governed by a Board of Directors made up of representatives from nearby counties.	Utility Rate Advisory Commission reviews proposals for rate increases.	Yes. Stormwater is managed by Department of Utilities. City of Sacramento uses combined sewer system, but Sacramento Area Sewer District is solely wastewater.
San Diego County Water Authority, CA	3,300,000	Provides Wholesale water only to San Diego County, California.	San Diego County Water Authority	Charter Agency - Wholesale Service Agreements	Wholesale water supply to 24 retail water agencies, including cities, special districts, and a military base.	Rates are set by the Board of Directors. Board consists of 36 members representatives, at least one each from their 24 member agencies. Rates are also largely driven by the Metropolitan Water District of Southern California as that is a major source of purchased water for the San Diego Water Authority	No. Only covers drinking water.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
San Francisco, CA	815,000	Own and operate the Hetch Hetchy Regional Water System which serves 2.7 million customers. Retail service in San Francisco and wholesale service in Alameda, Santa Clara, and San Mateo counties.	San Francisco Public Utilities Commission	Regional City-County agency uses Intermunicipal Service Agreements	San Francisco Public Utilities Commission is a public agency of the City and County of San Francisco that provides water and wastewater to the city and Alameda, San Mateo Santa Clara counties	The San Francisco Public Utilities Commission consists of five members, nominated by the mayor and approved by the County's Board of Supervisors. Their responsibilities include providing operational oversight, setting rates and charges for services, approval of contracts, and organizational policy. There is also a Rate Fairness Board that includes local residents and business owners. SFPUC is required to undertake independent rate studies at least every five years.	Yes. Stormwater is managed by San Francisco Public Utilities Commission. Per commission website, San Francisco is the only coastal city in California with a combined sewer system that collects and treats both wastewater and stormwater in the same network of pipes.
Santa Maria-Nipomo Community Services District	130,000	Established relationship between two nearby towns.	Santa Maria-Nipomo Community Services District MOU	Memorandum of Understanding	The MOU here served as a precursor to the wholesale agreement—it summarized the need for an agreement, the intent to negotiate that agreement, and the basic terms and conditions.	N/A	No, drinking water only.
SFWMD (South Florida Water Management District)	9,000,000	Manages permitting for water utilities in South Florida and provides stormwater and flood control service.	South Florida Water Management District	State Legislative Agency-Water Management District	Agency is responsible for managing and protecting water resources of South Florida by balancing and improving flood control, water supply, water quality.	Does not set rates	Primary function is to provide flood control and manage stormwater. Issues water use permits to Cities and water supply agencies.
Great Lakes Water Authority, Southeast Michigan	3,800,000	Great Lakes Water Authority leases Detroit Water and Sewerage Department infrastructure to provide water to eight counties in Southeast Michigan. Covers 30-40% of the state for water and wastewater.	Great Lakes Water Authority (GLWA)	Is a wholesale supply Authority for City of Detroit and southern Michigan municipalities (its members). Uses Detroit's treatment plants under a Facility Use Agreement.	Regional water, wastewater, and stormwater authority for southeast Michigan borne out of Detroit's bankruptcy.	GLWA board sets rates for its members, capped at 4%.	Yes. GLWA operates water, sewer, and stormwater. Uses a combined sewer system.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
St. Louis County, MO	1,000,000	Supplies water to 1.5 million people in Missouri	Missouri American Water + St. Louis Metropolitan Sewer District	Investor owner publicly traded water company + Special municipal district for sewer	American Water is a publicly traded water and wastewater utility company. MSD is a regional authority.	Missouri Public Service Commission approves rates for all investor owned public utilities. St. Louis Metropolitan Sewer District Board of Trustees sets sewer budgets and proposes rates to Rate Commission.	Yes. Stormwater and wastewater managed by St. Louis MSD. St. Louis and its inner suburbs are served by combined sewer systems. Separate systems are more common in the newer suburbs.
City of St. Louis, MO	293,000	St. Louis MSD manages wastewater and stormwater for the City and 90 percent of St. Louis County	City of St. Louis Water Division + St. Louis Metropolitan Sewer District for metropolitan regional sewer and stormwater management	City Utility Dept. for Water, + Special District for sewer and stormwater management	Water Division owned by City of St. Louis. MSD is a regional water authority.	Drinking water rate set by city's legislative body (board of alderman) Wastewater Rates set by Rate Commission based on MSD proposal and Agency's Charter Plan	Yes. Stormwater and wastewater managed by the same utility but separate from drinking water (managed by St. Louis Water). St. Louis and its inner suburbs are served by combined sewer systems. Separate systems are more common in the suburbs.
Tampa Bay, FL	2,500,000	Tampa Bay Water supplies wholesale drinking water to Hillsborough County, Pasco County, Pinellas County, New Port Richey, St. Petersburg and Tampa.	Tampa Bay Water	Special District /Authority - provides Wholesale water supply Service to members under Interlocal Agreement	State-funded nonprofit regional Special District that provides wholesale water services to Tampa Bay region. Nine-member board of directors, with two elected commissioners from each member county and one elected representative from each member city.	Rates are set by Board of directions, consisting of nine members (2) from each county (1) each from the Cities of Tampa, Saint Petersburg and New Port Richey. Uniform rates are at the level to fund infrastructure investment and utility management and O&M.	No Stormwater Services provided. Storm water is Managed individually by TBW's member governments. Tampa Bay area municipalities have separated sewer system.

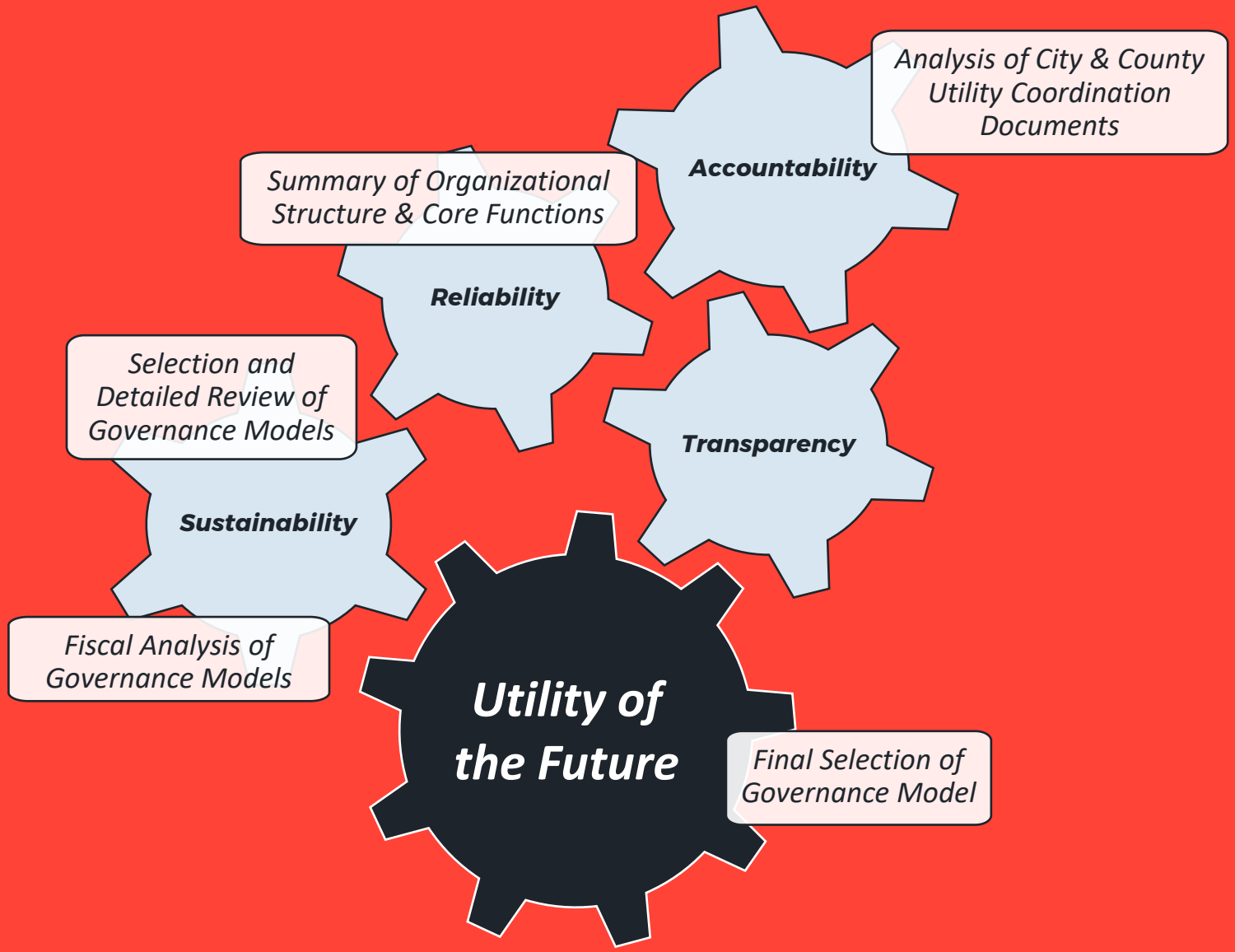
City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Washington, DC	671,803	Serves City of Washington. Provides wholesale wastewater treatment for adjacent counties (1.6 million people). Part of regional Blue Plains IMA.	DC Water	Special District + Wholesale Service Purchase Arrangement + Intermunicipal Service Agreement	Water and sewer authority with a significant number of diverse wholesale and retail customers. DC Water is part of the Blue Plains Intermunicipal Service Agreement with three surrounding counties (Montgomery, Prince George's, and Fairfax).	Board sets rates through majority votes. 5 of 11 board members are from neighboring counties.	No. Stormwater managed by Department of Energy & Environment. Two-thirds of DC is served by a separated sewer system, one-third is served by a combined sewer system.
International							
Bloemfontein, ZA	759,693	Vaal Central Water covers the City of Bloemfontein as well as most of Free State and Northern Cape, amounting to around 4 million users. Vaal Central Water reports to the National Department of Water and Sanitation	Bloem Water / Vaal Central Water	Special District	Vaal Central Water is a Water Board covering most of Free State and Northern Cape, South Africa. Vaal Central Water is a State-owned Entity, categorized as a Schedule 3B, National Government Enterprise	Unclear	Unclear
Bristol, UK	472,400	Bristol Water covers the region around Bristol, amounting to 1,200,000 users	Bristol Water/South West Water (water) + Wessex Water (water and sewer)	Other (Privatized)	Bristol Water: Private company, owned by Pennon Group, a water infrastructure company. Handles drinking water services for the region. Bristol Water is regulated as a water only company. Wessex Water: Owned by international firm YTL. Handles both water and wastewater services for the region.	Regulatory body (OFWAT) oversees and regulates prices	Yes. Bristol has many points where the sewer system is combined. Wessex Water is currently working to separate the systems.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Gold Coast, AU	716,000	Seqwater covers South East Queensland and totals 3.6 million people	Seqwater	Wholesale Service Agreement	Seqwater is a statutory authority of the Government of Queensland and one of the largest water businesses in Australia. Seqwater was formed on 1 January 2013 through a merger of three State-owned water businesses, the SEQ Water Grid Manager, LinkWater and the former Seqwater. They also assumed some responsibilities undertaken by the former Queensland Water Commission, such as the long-term planning of the region's future water needs.	Rates approved by government of Queensland	No. Seqwater covers drinking water only.
Kitchener, ON	250,000	Around 650,000 people live in the Region of Waterloo	City of Kitchener	Intermunicipal Service Agreement	The Region of Waterloo is responsible for wholesale water treatment and provision. Kitchener is responsible for operation and maintenance of its water distribution systems.	Fees approved by City Treasurer	Yes. Stormwater managed by City of Kitchener. Not a combined sewer system.

City/Utility	Population	Service Relationship with Metro Region	Name	Model	Model Background	Rate Setting Process	Stormwater part of?
Winnipeg, MB	750,000	The City of Winnipeg manages the Winnipeg Water and Waste Department.	Winnipeg Water and Waste Department	Intermunicipal Service Agreement	Winnipeg Sewage Treatment Program (WSTP) is a non-traditional infrastructure delivery model that focuses on extensive collaboration and shared risks and responsibilities for the improvement and operation of the three wastewater treatment plants owned and operated by the City of Winnipeg. This is in partnership Veolia for a total of 30 years. Appears that drinking water is managed directly by the city, although it retains ownership of sewage/wastewater infrastructure as well.	City sets water and sewer rates for the city.	Yes. The Water and Waste Department included 'Drainage'. One-third of the city contains combined sewers, primarily older infrastructure.

Appendix B

APPENDIX


Analysis of City & County Utility Coordination Documents
Accountability
Summary of Organizational Structure & Core Functions
Reliability
Selection and Detailed Review of Governance Models
Transparency
Sustainability
Fiscal Analysis of Governance Models
Utility of the Future
Final Selection of Governance Model

SWOT Analysis
Model A: Memorandum of Understanding (MOU)

- Written agreement between utilities that documents specific terms of partnership for a defined mutually beneficial objective.
- Language determines if the agreement is legally binding

Model A: MOU (1/8)

MANAGEMENT

Strengths

- No impact on how decisions are made
- Potentially clarify roles and responsibilities in handling a defined situation

Weaknesses

- Transactional and limited to a specific problem/scenario
- May get outdated and need revisions to keep pace with changes in either jurisdiction

Opportunities

- Useful starting point for further contract negotiations with other utilities/entities

Threats

- No potential to address any organizational issues
- Weaker party may have less leverage in negotiations

Model A: MOU (2/8)

OPERATIONS

Strengths

- Could improve coordination between parties

Weaknesses

- May not address operational inefficiencies due to systemic or organizational issues

Opportunities

- Potential for efficiency gains if roles and responsibilities of actors are well-defined

Threats

- May not be legally binding unless drafted as such

Model A: MOU (3/8)

EMPLOYEE RECRUITMENT

Strengths

- Potential for collaboration, capacity building, and human resource sharing

Weaknesses

- Will not impact existing recruitment practices of either party
- Compete for same staff

Opportunities

- Potential for resource sharing through secondments or deputations if agreed upon

Threats

Model A: MOU (4/8)

RETENTION AND TRAINING

Strengths

- Collaboration for capacity building of staff can be agreed upon

Weaknesses

- Does not address inherent challenges of the utility in retaining and training staff

Opportunities

- Potential to collaborate on skills training, study tours, site visits across jurisdictions

Threats

Model A: MOU (5/8)

BILLING AND COLLECTIONS

Strengths

- Can explicitly agree to integrate or coordinate this function across jurisdictions and specify the roles and responsibilities of relevant parties

Weaknesses

- Systematic and periodic coordination is necessary
- May not address equity/justice matters across jurisdictions in similar way

Opportunities

- Potential to reduce non-revenue water due to erroneous billing and collections

Threats

- Poor execution can compromise customer interface in both jurisdictions

Model A: MOU (6/8)

PLANNING FOR CAPITAL IMPROVEMENTS

Strengths

- Potential for inter-jurisdictional coordination in terms of data sharing on demand, population growth across service area

Weaknesses

- May not be legally binding unless drafted as such
- Can be difficult to enforce cost-share

Opportunities

- Potential cost savings through coordinated planning

Threats

- Need to consider policy priorities and political economy of each jurisdiction while coordinating plans

Model A: MOU (7/8)

EMERGENCY MANAGEMENT

Strengths

- Can leverage existing coordination mechanisms for data and resource sharing

Weaknesses

- May not be legally binding unless drafted as such

Opportunities

- Potential for periodic updates to emergency management plans

Threats

- Insufficient organizational preparedness and threat awareness hampers effectiveness

Model A: MOU (8/8)

RATE STABILITY FOR CUSTOMERS

Strengths

- Each jurisdiction retains respective control over rate setting
- Efficiency gains in other areas may lower costs for customers
- Potential for data sharing on cost of service

Weaknesses

- No impact on or guarantee of rate stability as those are subject to Council decisions and processes

Opportunities

- Potential for coordination and data sharing in developing rate proposals

Threats

- Rate changes in one jurisdiction may prompt changes in the other

SWOT Analysis
Model B: Cooperatives

- Non-profit, member-owned organizations created to achieve a single goal
- All customers of the cooperative are members, and each member has voting power.

EJ WATER COOPERATIVE, INC.

ENTRANOSA WATER & Wastewater Association

Bonita Springs Utilities, Inc.

Model B: Cooperatives (1/8)

MANAGEMENT

Strengths

- Decision makers are representative of consumer interests as they are elected by members.

Weaknesses

- Interest of cooperative may not align with interests of governing cities and counties

Opportunities

- Accountability is fostered since incentives of decision makers are aligned with that of consumers

Threats

- Need to ensure high-level of customer engagement and essential that Board is capable of working through stakeholder issues

Model B: Cooperatives (2/8)

OPERATIONS

Strengths

Weaknesses

- Generally not able to support operations of a World-class urban utility

Opportunities

- Potential for efficiency gains if operations are managed in-house

Threats

- Outsourcing of some functions may be needed if expertise in-house is limited

Model B: Cooperatives (3/8)

EMPLOYEE RECRUITMENT

Strengths

- Employees are typically also members; strong alignment of incentives

Weaknesses

- Talent pool may be limited; depends on size of member base

Opportunities

- Create jobs within the community served

Threats

Model B: Cooperatives (4/8)

RETENTION AND TRAINING

Strengths

- Since employees have strong ties to the community as members, high turnover is less likely

Weaknesses

- Uncompetitive pay relative to other public/private utilities
- Limited exposure to cross-training

Opportunities

- Strong focus on training
- Synergies between training for members and employees

Threats

- Limited talent pool could pose issues for succession planning

Model B: Cooperatives (5/8)

BILLING AND COLLECTIONS

Strengths

- Single entity provides billing and collection services, streamlining the processes.
- Eliminates potential for billing disputes between jurisdictions.

Weaknesses

- Transition from current processes may be complicated and time consuming.
- Membership requires upfront investment (membership fee)

Opportunities

- Potential for lower payment delinquency

Threats

Model B: Cooperatives (6/8)

PLANNING FOR CAPITAL IMPROVEMENTS

Strengths

- Cost of capital works shared between member-owners

Weaknesses

- Members generally need to agree on key investment decisions

Opportunities

- Benefits of capital improvements directly realized by members
- Potential for grants and concessional loans from Govt.

Threats

- Potential for delays in plan approvals if consensus is not reached

Model B: Cooperatives (7/8)

EMERGENCY MANAGEMENT

Strengths

- High level of community engagement

Weaknesses

- Lack of resources to effectively manage emergencies, prompting need for Govt. support

Opportunities

- Potential for easier coordination within the community

Threats

- Need to coordinate with relevant state and local government agencies for support

Model B: Cooperatives (8/8)

RATE STABILITY FOR CUSTOMERS

Strengths

- Third-party review and approval of rates from Maryland Public Service Commission (PSC) regulation.

Weaknesses

- The Cooperative Board of Directors does not have sole authority to set rates.
- Transition may require predecessor agency to refinance debt.

Opportunities

- Potential to standardize fiscal and rate setting policy throughout an entire service area.

Threats

- Transition to a single rate structure may be revenue-neutral for the utility as a whole, but it will not be revenue-neutral for all individual customers.

SWOT Analysis
Model C: Intermunicipal Service Agreements

- Written agreements between municipalities/utilities that result in services provided to residents and ratepayers

Blue Plains Agreement

dc water is life

TOWN OF ANDOVER MASSACHUSETTS

Model C: Intermunicipal Service Agreements (1/8)

MANAGEMENT

Strengths

- Shared improvements and technological advances across jurisdictions due to shared incentives and close working relationships

Weaknesses

- Large bureaucracy comprised of potentially competing interests

Opportunities

- Allows for simpler transition as less needs to change

Threats

- Potential loss of agency by underrepresented communities due to the need to fulfil contracts

Model C: Intermunicipal Service Agreements (2/8)

OPERATIONS

Strengths

- Collaborate and make regional plans for long-term operations

Weaknesses

- Requires coordination with external jurisdictions
- Timing/schedules of planning activities may not have perfect overlap, causing delays

Opportunities

- Collaborate and make regional plans for long-term operations

Threats

- Inter-jurisdictional competition for economic development is dependent on water/sewer

Model C: Intermunicipal Service Agreements (3/8)

EMPLOYEE RECRUITMENT

Strengths

- Availability of shared labor resources if agreed upon

Weaknesses

- Does not address institutional issues towards hiring difficulties

Opportunities

- Reduced need for recruitment due to streamlined operations (e.g., consolidated billing)

Threats

- Potential imbalance if one part of the system is perceived as a better employer

Model C: Intermunicipal Service Agreements (4/8)

RETENTION AND TRAINING

Strengths

- Employees moving around the region will have less impact on the jurisdiction that loses employees
- Long-term clarity on objectives and processes

Weaknesses

- No fundamental overhaul of hiring and retention practices

Opportunities

- Opportunities for collaboration and peer learning

Threats

- Present hiring difficulties could get ignored if people declare success after this change

Model C: Intermunicipal Service Agreements (5/8)

BILLING AND COLLECTIONS

Strengths

- Each jurisdiction keeps their retail customers.
- Potential to implement incremental changes.

Weaknesses

- May not require jurisdictions to make decisions that benefit all parties.
- May not require jurisdictions to have billing systems that communicate.

Opportunities

- Region-wide learning and best practice sharing

Threats

- Inaccuracies caused by one jurisdiction may alter customer perception of other jurisdictions.

Model C: Intermunicipal Service Agreements (6/8)

PLANNING FOR CAPITAL IMPROVEMENTS

Strengths

- Opportunities to collaborate on regional needs
- Disperses the overall cost of capital improvements across all those that use the infrastructure
- Economies of scale in annual O&M costs

Weaknesses

- Requires coordination with external jurisdictions
- Inter-jurisdictional competition for economic development is dependent on water/sewer

Opportunities

- Potential for jurisdictions to be more efficient in where they make capital investments because of wider array of locations to choose from

Threats

- One jurisdiction could potentially hamper others if they do not see a benefit to themselves from the new infrastructure

Model C: Intermunicipal Service Agreements (7/8)

EMERGENCY MANAGEMENT

Strengths

- Emergencies require coordination, which is inherent to this system

Weaknesses

- Potential for collective action problems

Opportunities

- Chance to revisit emergency plans and make scheduled updates

Threats

- Inflexible agreements may limit emergency response, especially if emergency only threatens one party

Model C: Intermunicipal Service Agreements (8/8)

RATE STABILITY FOR CUSTOMERS

Strengths

- Each jurisdiction retains respective control over rate setting.
- Efficiency gains in other areas may lower costs for customers.
- Potential for data sharing on cost of service

Weaknesses

- No impact on or guarantee of rate stability as those are subject to Council decisions and processes

Opportunities

- Potential for coordination and data sharing in developing rate proposals

Threats

- Rate changes in one jurisdiction may prompt changes in the other

SWOT Analysis
Model D: Wholesale Service Agreements

- Contract for a utility to provide another with water or sewer services.
- Services provided are for wholesale type services (utility to utility sales of services) as opposed to retail type services (directly to end customers).

Louisville Water

WATER RESOURCES AUTHORITY MASSACHUSETTS

dc water is life®

Model D: Wholesale Service Agreements (1/8)

MANAGEMENT

Strengths

- Allows for regional cooperation in long-term planning while short-term is managed by city

Weaknesses

- Complex-multijurisdictional management structure that potentially limits accountability to residents

Opportunities

- Can simplify things, as regional wholesaler manages water flow but city manages its infrastructure

Threats

- Responsibility for flow of water transferred to agency outside of the city

Model D: Wholesale Service Agreements (2/8)

OPERATIONS

Strengths

- Economies of scale may lead to lower-cost operations

Weaknesses

- May need additional redundant infrastructure to ensure quality standards are met
- Bound by contracts instead of what is needed at the given moment

Opportunities

- Greater regional collaboration

Threats

- Reliant on an external party to meet demand

Model D: Wholesale Service Agreements (3/8)

EMPLOYEE RECRUITMENT

Strengths

- No fundamental overhaul of hiring is necessary

Weaknesses

- Systemic issues with recruitment will remain unaddressed

Opportunities

- Potential to specialize at hiring by changing the type of positions needed

Threats

- Some positions may be made redundant if role is outsourced

Model D: Wholesale Service Agreements (4/8)

RETENTION AND TRAINING

Strengths

- Does not impact existing HR systems

Weaknesses

- Will not help address existing issues with employee turnover and skill building

Opportunities

Threats

- Some positions may be made redundant if role is outsourced

Model D: Wholesale Service Agreements (5/8)

BILLING AND COLLECTIONS

Strengths

- Each jurisdiction reads their own meters and bills their own customers.

Weaknesses

- Transition will be expensive and time consuming.

Opportunities

- More direct interactions between customers and the utility that serves them.

Threats

- No requirement for jurisdictions to cooperate or have complimentary systems.

Model D: Wholesale Service Agreements (6/8)

PLANNING FOR CAPITAL IMPROVEMENTS

Strengths

- Regional coordination on capital improvements

Weaknesses

- Due to the need for regional cooperation, planning for capital improvements may be inflexible in the face of long-term changes

Opportunities

- Flexibility to deal with changing demand in short-term

Threats

- Master plan may go out of date quickly, causing planned infrastructure to be insufficient or superfluous

Model D: Wholesale Service Agreements (7/8)

EMERGENCY MANAGEMENT

Strengths

- Unified organization that connects all wholesale customers, can coordinate emergency response

Weaknesses

- May be necessary to predict emergencies to ensure collaboration is possible
- An issue in the system can impact a wide range of users

Opportunities

- Larger number of jurisdictions can de-risk emergencies, as the system will be larger and more robust

Threats

- Wholesale purchaser may have to rely on wholesaler to properly address the problem even if it does not directly affect them

Model D: Wholesale Service Agreements (8/8)

RATE STABILITY FOR CUSTOMERS

Strengths

- Each jurisdiction retains rate setting control
- Billing/collection related revenue issues can be addressed independently of other jurisdictions.

Weaknesses

- Rates may be influenced by wholesale purchase costs.
- Wholesale customer has no voting power over decisions that affect costs of wholesale water.

Opportunities

- Potential to adopt pass-through rate adjustment of wholesale cost increases, which reduces financial risk.

Threats

- Contract language may limit future flexibility to ensure lower rates

SWOT Analysis
Model E: Special District/ Authority

- Special districts formed within service area boundary to meet specific purpose.
- Special districts have the authority to charge rates and fees and issue revenue bonds in return for the responsibility and obligations to render services.

(Philadelphia)

WSSCWATER
DELIVERING THE ESSENTIAL

GLWA

Model E: Special District / Authority (1/8)

MANAGEMENT

Strengths

- Greater oversight by municipal government
- Limited change in fundamental processes

Weaknesses

- Collaboration with competing jurisdictions covered by same system

Opportunities

- Greater flexibility to make needed changes

Threats

- Subject to political changes

Model E: Special District / Authority (2/8)

OPERATIONS

Strengths

- The same organization owns, operates, and maintains the assets

Weaknesses

- Generally easier to manage when the govt agency that oversees operations represents a single jurisdiction, otherwise it may require input from external jurisdictions that impact those who do not live there

Opportunities

- Allows most capable parties to handle what they are best at

Threats

- Must adapt to changing populations and needs

Model E: Special District / Authority (3/8)

EMPLOYEE RECRUITMENT

Strengths

- Ability to overhaul HR systems and processes to address current challenges such as succession planning

Weaknesses

- Uncertainty around any overhaul of HR systems may impact employee morale

Opportunities

- Can emphasize local recruiting of those in the district

Threats

- May exacerbate high turnover given uncertainty among staff

Model E: Special District / Authority (4/8)

RETENTION AND TRAINING

Strengths

- Ability to revisit terms of employment to address high turnover

Weaknesses

- Any overhaul/transition in terms of employment may receive push back from existing staff

Opportunities

- Potential for capacity building, peer learning, and training across jurisdictions

Threats

- Any glitches in rolling out new HR systems could compromise employee trust and confidence

Model E: Special District / Authority (5/8)

BILLING AND COLLECTIONS

Strengths

- Single entity provides billing and collection services, streamlining the processes.
- Eliminates potential for billing disputes between jurisdictions.

Weaknesses

- Transition from current processes may be complicated and time consuming.

Opportunities

- Potential to improve customer service.

Threats

Model E: Special District / Authority (6/8)

PLANNING FOR CAPITAL IMPROVEMENTS

Strengths

- Unified planning
- Robust fundraising resources available

Weaknesses

- Limited to own jurisdiction
- Potentially less regional integration

Opportunities

- Flexibility to make changes as needed

Threats

- Political changes

Model E: Special District / Authority (7/8)

EMERGENCY MANAGEMENT

Strengths

- Can be more easily coordinated with other parts of the government

Weaknesses

- Requires collaboration between different jurisdictions
- May be necessary to predict emergencies to ensure collaboration is possible

Opportunities

- Allow for better synergy between different jurisdictions as they will need to get on the same page

Threats

- A threat to one part of the system may pose an additional burden on some users that they may not have otherwise faced

Model E: Special District / Authority (8/8)

RATE STABILITY FOR CUSTOMERS

Strengths

- Realize economies of scale
- Financial risk is pooled among a larger customer base.

Weaknesses

- May require predecessor jurisdictions to refinance debt.
- May require a Facilities Use Agreement if predecessor jurisdictions retain assets.

Opportunities

- Potential to standardize fiscal and rate setting policy throughout an entire service area.

Threats

- Transition to a single rate structure may be revenue-neutral for the utility as a whole, but it will not be revenue-neutral for all individual customers.

Appendix C

Meeting #	Follow-up	How it was addressed
2	Clarity on whether the existing cost sharing model/formula for O&M costs is adequate,	Task Force Meeting 3 Presentation, slide 40
2	Details on how bulk rates for the County are set and revised periodically under the existing 1972 water and 1974 sewer agreements specifically,	Task Force Meeting 3 Presentation, slide 40
2	Cost sharing arrangements with the City's wholesale customers for capital improvements,	Task Force Meeting 4 Presentation, slide 21
2	Explain rate setting from the wholesale and retail perspective,	Task Force Meeting 3 Presentation, slide 23
2	Graphically explain the $/ccf rate that a County resident pays and the $/ccf rate that a City resident pays,	Task Force Meeting 3 Presentation, slide 20
2	For the utilities studied, provide a chart or table showing what model each utility follows,	Addressed through creation and dissemination of Water Governance Table, shared with the Task Force and published on the City and County websites alongside Meeting 2 notes
2	Note down historical experiences of individual or separate jurisdictions moving to a special district/authority model, and	Addressed through creation and dissemination of Water Governance Table, shared with the Task Force and published on the City and County websites alongside Meeting 2 notes
2	Provide additional information on stormwater management practices for the utilities that the Consultant is already studying.	Addressed through creation and dissemination of Water Governance Table, shared with the Task Force and published on the City and County websites alongside Meeting 2 notes
3	Examples of how other utilities that transitioned into Special Districts/Authorities handled the issue of employee pensions.	Addressed through research presented on the Great Lakes Water Authority example during Meeting 4. Also addressed in Follow ups_Meeting 5 documents
3	Shortlist of comparable utilities that are being interviewed further and details of those interviews.	Addressed through creation and dissemination of Water Governance Table, shared with the Task Force and published on the City and County websites alongside Meeting 2 notes
3	Breakdown of costs that are recovered through the annual true up process.	Task Force Meeting 4 Presentation, slide 24

3	Annotated version of slide 38 on historical wholesale revenues providing some basic explanation of the figures	Task Force Meeting 4 Presentation, slide 25
3	For a hypothetical customer bill at the City and County level, show what percentage of the bill is fixed charge vs. volumetric charge.	Task Force Meeting 4 Presentation, slide 34
3	Clarify how the fire suppression fee is applied in the City and the County.	Task Force Meeting 4 Presentation, slide 33
3	Clarify current pension plan arrangements in place for existing employees of the utilities at the City and County	Task Force Meeting 4 Presentation, slide 36-38
3	On capital costs: - a. City to provide figures for Federal/State Funds on Slide 50 showing City's FY25-29 Capital Plan Funding, - b. Clarify whether the figures showing capital spending by the County include contributions to the City, - c. Confirm whether the figure showing State Aid of US$5 million for the County is correct (Slide 55).	Point b. addressed in Task Force Meeting 4 Presentation, slide 26.
3	On Debt: - a. Debt projections showing a schedule of new debt expected to be incurred by both the City and the County, and debt to be repaid. - b. Cost of capital for refinancing existing debt at current interest rates and how that would impact rate payers. - c. Options/examples where a new entity/utility has contractual arrangements with the City and County to provide debt service payments annually, such that each jurisdiction meets its own debt service requirements, avoiding the need for expensive refinancing. - d. Impact of asset ownership on debt financing - e. Consult with MDE and EPA on financing mechanisms that they administer. - f. Provide a chart showing what debt service would look like at different interest rates. - g. Provide financial models for each jurisdiction (City and County) - h. Provide bond ratings for the utilities (City and County) and any associated financial metrics of each of the utilities.	Task Force Meeting 4 Presentation, slides 27 to 31. Point g. pending with the City and the County. Point e. addressed through conversation with MDE and EPA held on 24 October 2023. [Neil to advise if we are able to attach the Call records as an appendix]

3	Provide information on: a. How accounts that are currently not paying property taxes are billed for water and sewer; and b. Uncollected/unbilled/unmetered revenues from commercial businesses.	Verbal response provided by representatives from the Baltimore City DPW during Meeting 4.
3	Consider governance model options that would involve a financing arm or conduit (e.g. MEDCO) that would raise debt on behalf of the newly formed water and wastewater authority.	Task Force Meeting 4 Presentation, slide 20
3	City to provide details on when the last cost of service study was done and its results.	Task Force Meeting 4 Presentation, slide 32
4	In the Detroit example and establishment of Great Lakes Water Authority (GLWA), provide details on: - a. Transition costs - b. Impact of transition on rates in the region - c. Pension payments to City employees - d. Model contract and the rate structure within it - e. Breakdown of the US$4 billion debt payment - f. How is the US$50 million annual payment applied between pension payments and equity/affordability programs - g. Variance (if any) between employee compensation at Detroit Water and Sewerage Department and GLWA for staff at equivalent positions h. Pension transition for existing and new employees.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	For the Detroit and Tampa Bay Water examples, provide details on the Board's composition, term/duration(years), whether the terms are consecutive or staggered, how the Boards are chaired, and whether there are any de facto positions.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	City to provide details on: a. State support for operating costs b. Determine what the collection procedures have been over the last few years and are now for commercial properties: are they put in tax sale for long delinquent unpaid water bills? c. Whether there has been a third-party independent audit of the integrity of the billing data base and invoicing accuracy of the fire suppression fee data since 2016	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Clarify the proportion of the total water supplied to Anne Arundel County by Baltimore City.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and

		published on the City and County websites.
4	Clarify in the information indicated in Slide 25 regarding how much Baltimore County receives from its wholesale partners for water and wastewater services it provides.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Provide actual City and County financial metrics for Days Cash on Hand, Debt Service Coverage Ratio and Debt to Operating Revenue supporting the City and the County's bond ratings.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Comment, to the extent possible, on factors that would have financial impact or that should be considered in case of transitioning to a regional authority model.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Describe the concept of having an independent Rate Setting Board within Model E (special district/water and wastewater authority).	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Clarify the assumptions underlying the Net Present Value calculations of debt refinancing costs.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Describe options within Model E (special district/water and wastewater authority) that do not require debt refinancing.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Follow up with Maryland Department of the Environment on whether it would be permissible for existing loans to be assumed by a new entity under the same terms without the need for refinancing.	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Confirm the following: In case the City were to decide to lease all or any portion of the water and sewer system assets currently on the City's books to another entity, what would be the disposition of these leased assets at the end of the Lease's term? Can the assets remain on the City's books during the term of the lease and thereafter?	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
4	Within Models C and D, explore the option involving the creation of a separate water and wastewater department within the City as opposed to at the	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and

	Bureau level within the Department of Public Works. Check governance structure in the City of Atlanta (water and sewer).	published on the City and County websites.
4	Clarify the scope for governance improvements within Model C (intermunicipal agreements) and Model D (wholesale agreements).	Addressed in writing in a document shared with the Task Force ahead of Meeting 5 and published on the City and County websites.
5	Include equity study as one of the items to be considered as a threshold issue.	Included as a recommendation in Section 9 of the Draft Report.
5	For Model C: Reach out to the City's Law Department to understand which of the recommended changes to Model C/modified intermunicipal agreements can be done without a Charter Amendment or legislation? Determine what changes would need legislative action and what changes can be done through executive decree by the Mayor, Board of Estimates or County Executive. Recommend that periodic cost of service studies be undertaken to support any rate increase. Annually track cost of service expenses (reconcilable to last Cost of Service Study) or use other method(s) consistent with industry standards to inform rate setting in the future.	• Discussion with City's Law Department completed on 1 December 2023. [Neil to advise if we are able to attach the Call records as an appendix] • Recommendations on periodic cost of service studies included in the Draft Report as part of Section 7.
5	For Model E: Provide information on feasibility of avoiding debt refinancing based on an example that would help structure a similar course of action for the Baltimore region. Check for more information about the Los Vaqueros Reservoir Joint Powers Authority deal structure. Include details and description of the sub-options/variations available under Model E	• [Discuss with Neil/Brian how we should respond to the first one. To my knowledge we have not looked into the Vaqueros example but I may be mistaken] • Sub-options and variations of Model E are described in Section 7 of the Draft Report

Appendix D

MEMORANDUM

To: Brian Shell, WSP

From: David Moore, Clean Energy Capital

Date: December __, 2023

Re: ALTERNATIVE GOVERNANCE MODEL ASSESSMENT AND RECOMMENDATIONS FOR THE BALTIMORE REGION'S WATER AND WASTEWATER UTILITIES
Estimated Cost of Refinancing Outstanding Debt

OVERVIEW AND PURPOSE

As part of WSP's evaluation of alternative governance models for the Baltimore region's water and wastewater utilities, Clean Energy Capital Securities LLC ("Clean Energy Capital" or "CEC") was engaged to quantify the cost of refinancing the outstanding water and wastewater revenue bond indebtedness of the City of Baltimore (the "City Water Utility Debt" and "City Wastewater Utility Debt", respectively) and outstanding Baltimore County Metropolitan District Bonds and debt obligations ("County Metro Debt") issued for both water and wastewater purposes. Clean Energy Capital is a registered Municipal Advisor.

The cost evaluation summarized herein is relevant to the assessment of alternative governance models to the extent that organization changes conflict with existing debt covenants between the City and its lenders or between the County and its Lenders. The cost of refinancing creates a financial incentive for the parties to pursue governance models that are consistent with existing debt covenants and that would not result in a requirement to refinance outstanding debt. Clean Energy Capital developed a Low-Case and High-Case estimated cost of refinancing as set forth in Table 1. This memorandum summarizes the methodology and results of our analysis.

Table 1
Summary of Outstanding Debt and Estimated Cost of Refinancing ($millions)

	CITY WATER UTILITY DEBT	CITY WASTEWATER UTILITY DEBT	COUNTY METRO DEBT	TOTAL
Approximate Debt Outstanding	$1,500	$1,700	$2,200	$5,400
Present Value Cost of Refinancing				
Low Case	$90	$130	$105	$325
High Case	$210	$340	$185	$735

METHODOLOGY

Sources of Data

Clean Energy Capital developed its analysis using publicly-available information drawn primarily from the City and County's Annual Comprehensive Financial Reports for the year ended June 30, 2022 and from official statements posted to the MSRB's Electronic Municipal Market Access site. The City's Water and Wastewater Utility Debt is comprised of senior and subordinated new money revenue bonds, taxable and tax exempt refunding revenue bonds, WIFIA Loans from the US EPA, and loans from the Maryland Water Quality Financing Administration ("MWQFA"). The County's Metro Debt, issued for both water and wastewater system purposes, is comprised of

new money revenue bonds, taxable and tax exempt refunding bonds, and MWQFA loans. For certain outstanding debt issues where the publicly-available information identified was incomplete, Clean Energy Capital made certain assumptions. For example, we assumed that the City's WIFIA Loans could be optionally redeemed at a price of par. For certain smaller or older outstanding debt issues that were less material to our cost estimate, Clean Energy Capital extrapolated present value savings calculated for other outstanding bond series.

Key Assumptions

Clean Energy Capital's High Cost Refunding Estimate as developed using the following assumptions.

- Outstanding refunding bonds and taxable bonds refunded with taxable refunding bonds
    - Taxable rate = 6.00% (5.00% long-term Treasury rate plus 1.00%)
- Outstanding new money bonds refunded with tax-exempt refunding bonds
    - Tax exempt rate = 4.50% (5.00% long-term Treasury rate less 0.50%)
- Escrow reinvestment at lesser of 5.00% and tax-exempt rate, where applicable
- NPV discount rate = borrowing rate (taxable rate used where applicable, tax-exempt rate used where applicable)
- January 1, 2024 refunding date
- Outstanding debt called at first optional redemption date
- 1% cost of issuance
- Subordinate debt refinanced at same rate as senior debt
- Savings extrapolated to outstanding bonds with missing/incomplete information
- Swap breakage costs not included in analysis

Clean Energy Capital's Low Cost Refunding Estimate as developed using the following assumptions. Because of the materiality to the overall cost estimate of the refinancing assumptions applied to outstanding MWQFA loans, WIFIA loans, and taxable refunding bonds, variation of these refunding assumptions was determined to be a more appropriate basis for establishing a low cost estimate than a more traditional refunding interest rate sensitivity analysis.

- Cost of refinancing outstanding MWQFA Loans is one-third of high cost estimate, reflecting an assumed negotiated outcome between lender and borrower
- Cost of refinancing outstanding WIFIA Loans is one-third of high cost estimate, reflecting an assumed negotiated outcome between lender and borrower
- Cost of refinancing the City's Series 2020AB taxable bonds is one-half of high cost estimate, reflecting a later redemption date, for example, an escrow-to-maturity or other defeasance strategy
- All other refinancings are calculated as described in high cost estimate

REFUNDING BY OUTSTANDING SERIES

Tables 2, 3 and 4 summarize Clean Energy Capital's refunding analysis of a series-by-series basis for outstanding City Water Utility Debt, City Wastewater Utility Debt, and County Metro Debt, respectively. The tables present the High Case cost-of-refinancing estimates.

Table 2
Refunding Savings (Cost) by Series – City Water Utility Debt ($000s)

Series 2021C Water Bonds (WIFIA Loan)	($72,053)
2021 MWQFA Revolving Loan Fund	($32,073)
Series 2020B Refunding Revenue Bonds (Taxable)	($51,907)
Series 2020A Project Revenue Bonds	($1,037)
Series 2019C Subordinate Refunding Revenue Bonds	($678)
Series 2019B Refunding Revenue Bonds	($863)
Series 2019A Project Revenue Bonds	($5,494)
2017 MWQFA Revolving Loan Fund	($33,796)
Series 2017D Refunding Revenue Bonds	($2,177)
Series 2017C Subordinate Refunding Revenue Bonds	($1,732)
Series 2017B Refunding Revenue Bonds	($184)
Series 2017A Subordinate Project Revenue Bonds	$3,387
Series 2014C Subordinate Refunding Revenue Bonds	($7,656)
Series 2014B Refunding Revenue Bonds	($1,573)
Series 2014A Subordinate Project Revenue Bonds	$590
Series 2013C Subordinate Refunding Revenue Bonds	$38
Series 2013B Refunding Revenue Bonds	($665)
Series 2013A Project Revenue Bonds	($338)
Other Debt	($1,406)
Total	($209,617)

Table 3
Refunding Savings (Cost) by Series – City Wastewater Utility Debt ($000s)

DEBT SERIES	PRESENT VALUE SAVINGS (COST)
Series 2022A Project Revenue Bonds	$1,642
Series 2021C Wastewater Bonds (WIFIA Loan)	($60,144)
2021 MWQFA Revolving Loan Fund	($1,372)
2021 MWQFA Revolving Loan Fund	($6,629)
2021 MWQFA Revolving Loan Fund	($41,641)
Series 2020A Refunding Revenue Bonds (Taxable)	($62,449)
2019 MWQFA Revolving Loan Fund	($2,641)
2019 MWQFA Revolving Loan Fund	($238)
Series 2019A Project Revenue Bonds	($2,770)
2018 WIFIA Loan	($44,206)
2018 MWQFA Revolving Loan Fund	($2,894)
2018 MWQFA Revolving Loan Fund	($67,663)
2017 MWQFA Revolving Loan Fund	($1,156)
Series 2017C Refunding Revenue Bonds	($3,211)
Series 2017B Refunding Revenue Bonds	($6,281)
Series 2017A Subordinate Project Revenue Bonds	$2,195
2016 MWQFA Revolving Loan Fund	($8,391)
2015 MWQFA Revolving Loan Fund	($11,331)
2015 MWQFA Revolving Loan Fund	($2,441)
Series 2014E Subordinate Refunding Revenue Bonds	($889)
Series 2014D Refunding Revenue Bonds	($4,773)
Series 2014C Subordinate Project Revenue Bonds	$2,294
2014 MWQFA Revolving Loan Fund	($4,447)
Series 2013E Subordinate Refunding Revenue Bonds	$23
Series 2013D Refunding Revenue Bonds	$0
Series 2013C Project Revenue Bonds	$48
2013 MWQFA Revolving Loan Fund	($3,030)
Other Debt	($4,806)
Total	($338,845)

Table 4
Refunding Savings (Cost) by Series – County Metro Debt ($000s)

DEBT SERIES	PRESENT VALUE SAVINGS (COST)
84th Issue	$4,743
2021 Refunding Series (Taxable)	($9,404)
83rd Issue	($9,549)
2020 Refunding Series	($2,099)
2020 MWQFA Revolving Loan Fund	($30,045)
2019 Refunding Series	($5,114)
81st Issue	($8,755)
2018 MWQFA Revolving Loan Fund	($58,027)
80th Issue	($7,240)
2017 MWQFA Revolving Loan Fund	($20,239)
2017 Refunding Series	($590)
79th Issue	($2,346)
2016 MWQFA Revolving Loan Fund	($3,915)
78th Issue	$1,956
2016 Refunding Series	($8,694)
2015 MWQFA Revolving Loan Fund	($7,738)
2015 Refunding Series	($2,590)
77th Issue	$1,965
2014C Refunding Series	$202
76th Issue	($2,394)
2014 Refunding Series	($1,571)
2013 MWQFA Revolving Loan Fund	($486)
75th Issue	($2,766)
2012 Refunding Series	$20
2012 MWQFA Revolving Loan Fund	($1,588)
73rd Issue (Taxable)	($3,983)
2009 MWQFA Revolving Loan Fund	($385)
Other Debt	($3,801)
Other Debt	($498)
Other Debt	($781)
Total	($185,708)