

CENTRAL IOWA WATER WORKS

REGIONAL MICRO GROUP

Report Out on Discussions, Outcomes and Considerations

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HOW THIS DOCUMENT SHOULD BE USED

The concepts outlined in this document are strictly a culmination of the work of the individuals comprising the Micro Group and have not been formally or informally approved by any one of the associated Boards of Trustees. The distribution of this document does not imply support or approval of the concepts by the associated Boards of Trustees. This framework should not be considered an offer or proposal; rather, based on feedback and follow up discussions, it may be used as the basis for a proposal or negotiated 28E/28F agreement which all participating regional agencies, including city councils and the three utility Boards, would review and formally approve before any regional entity would exist. Use of the term “Consensus” within this document refers only to the individuals within the Micro Group as it relates to evaluating a full regionalization option.

The Micro Group hopes the information contained in this document will provide a common understanding of complex regional considerations as studied by the Micro Group and will, in turn, advance the dialogue surrounding regional governance of drinking water production in the Des Moines metro area and hopes decision makers will move the question forward with the sense of urgency necessary to ensure continued adequate supply of safe, affordable drinking water in Central Iowa.

BACKGROUND AND INTRODUCTION

Multi-year Process

In 2017, Des Moines Water Works (DMWW) began a multi-year process with partners from across the region, examining ways to increase cooperation, share decision-making, balance risk, and equitably distribute benefits across the region. A range of alternatives, from merging all retail and water production assets under a single entity to sharing costs and decision-making while maintaining separately governed entities, were considered. FCS Group, a national utility consulting firm, was retained by DMWW, Urbandale Water Utility and West Des Moines Water Works (WDMWW) to facilitate a process-- which included data gathering, analysis, and stakeholder workshops—that could serve as a basis for establishing a model for a regional water authority. The technical aspects of forming a regional entity, including board composition, and operating contracts, were identified. FCS Group also completed an in-depth financial analysis of the regional concept compared to the existing water supply model.

Initial FCS Group Model

The initial FCS Group financial analysis, completed in October 2018, showed significant benefit to regionalizing water production in Central Iowa. The FCS recommendations were based on 1) ownership of water production assets, 2) how the costs of adding water production capacity for economic growth could be attributed, and 3) how to calculate charges for water during peak demands. The formation of a new regional water authority was proposed. The proposed authority would purchase all the water production assets in the region. The new authority would raise money from Members, through the issuance of debt, and by implementing rate increases to wholesale customers to buy these assets.

The cost of becoming a Member of the new authority was too high for some, while others would have received significant financial benefits; consequently, there was a lack of consensual support for this regionalization model among the regional partners.

The Shared Governance Option

The DMWW Board considered alternatives to the initial FCS Group model with a continued commitment to three guiding principles developed during early regional discussions.

1. Collaborative decision-making focused on conserving and protecting the natural resource of water is in the best interest of the people of the region.
2. Drinking water should be produced and made available in a manner that is fair and equitable to every person, business, government entity, and organization in the region.
3. Shared risk should result in shared benefits. The wise management and conservation of water is beneficial to the entire region and, over the long-term, will result in lower regional costs.

DMWW recognizes there may be other or additional opinions or perspectives by the suburban communities on why shared governance is important.

In September 2019, the DMWW Board issued an alternative framework to the initial FCS model in the form of a Term Sheet. The Term Sheet was intended to further stimulate discussion of a regional model, and regional discussions were actively resumed.

Micro Group Discussions

The Term Sheet generated healthy discussion and a number of questions among regional partners. It became clear more detailed discussions were needed to answer all the questions. Those discussions began in early 2020 shortly before the outbreak of the COVID-19 pandemic. It quickly became difficult to coordinate the type of large group discussions needed to answer the detailed questions. In July of 2020, representatives for the three Board-managed water utilities determined that, in order to ensure continued progress, the best path forward was to address the outstanding questions in more frequent, small group meetings. These Micro Group meetings have occurred weekly, and sometimes as often as three times a week since late July 2020.

These discussions have covered all the questions assembled by the larger, regional group in February of 2020. In discussing the issues, the Micro Group has been attentive to considering diverse perspectives and interests of all regional partners—from producers to non-producers, fast growing to slow growing communities, etc.

REGIONAL CONCEPTUAL FRAMEWORK AS PRESENTED BY THE MICRO GROUP

CONCEPTUAL FRAMEWORK FOR REGIONALIZATION

The Micro Group discussions have resulted in revised concepts for a discussion framework. The discussion framework contains the following concepts.

1. **Creation of Central Iowa Water Works (CIWW).** A new intergovernmental entity, CIWW, will be established under Iowa Code Chapters 28E and 28F to allow regional partners to make efficient use of existing water infrastructure and cooperate, to their mutual advantage, in the management of water as a natural resource. This new entity would also have the responsibility to deliver safe and abundant drinking water to Members of CIWW.
2. **Participation.** All Central Iowa water utility systems would be invited to join CIWW as Founding Agency Members. Total Service Customers of any Member would be deemed to be part of their Member service provider so long as they remain a party to their existing 28E agreement. If a water utility system wishes to join CIWW after the Authority has been established, the terms, including cost, of Membership would be established by the CIWW board.
3. **Exclusivity.** CIWW would have the exclusive right to purchase the full output of the Water Production and Supply Facilities of all its Members. All Members would exclusively contract with CIWW for their wholesale water supply.
4. **Operational Contracts.** CIWW would contract with Water Producing Members (e.g., DMWW and WDMWW) for the operation of existing water production assets for a minimum of 20 years.
5. **Regional Production Governance.** CIWW would have governance of production-related activities only, and Members would retain full governance of all matters related to their individual distribution and storage systems, including setting local water rates.
6. **Board Composition.** CIWW would be governed by a Board consisting of one representative from each of the Founding Agencies. Agencies serving an area with a population in excess of 100,000 would be represented by one additional representative.
7. **Ownership.** CIWW would purchase, by a date certain, designated Water Production and Supply Facilities from all its Water Producing Members to effectuate asset transfer. Until acting on asset transfer, asset owners would continue to own, maintain and finance improvements to their respective Water Production and Supply Facilities.
8. **Governance and Scope.** The CIWW Board would provide oversight and governance for managing water production and wholesale distribution to its Members, wholesale rate setting, and long-range planning. All financing and management issues related to water production would require approval from the CIWW board.

9. **Future Water Production Expansion.** The cost of expanding water production assets in the region may be shared among the Members of the CIWW proportionally based on each Member's forecasted incremental maximum day demand, or alternatively, a small portion of the cost of expansions may be shared among all members, with the remaining costs shared among all members of the CIWW proportionally and the remaining costs based on each member's forecasted incremental maximum day demand. The Micro Group has not yet reached consensus on this point.

10. **Upfront Capital Contribution.** Upon entering into CIWW, each Member would be required to contribute towards the entity's start-up fund. Each Member would be asked to contribute a proportionate share of the start-up fund based on their population or demand. The initial start-up fund is projected to be approximately \$2,000,000 in total, with contributions allocated among the Members.

MEMBERSHIP

All Central Iowa water utility systems will be invited to participate either as founding Members on equal terms, or as subsequently admitted Members on terms to be established by the CIWW Board.

Total Service Customers of any Member are deemed to be part of their Member service provider so long as they remain a party to their existing 28E agreement.

The existing Wholesale Water Service Master Agreement (“Master Agreement”) among DMWW and its wholesale customers dated June 10, 2005, which makes provision for purchased capacity will terminate among the founding Members as of the Operational Commencement Date of CIWW. The Master Agreement will otherwise remain in full force and effect for other DMWW wholesale customers that are not founding Members, and DMWW shall retain the right to set rates and provide service to those wholesale customers that are not Members of CIWW.

GOVERNANCE AND BOARD COMPOSITION

The initial Term Sheet issued by DMWW in September of 2019 included a Board composition proposal of at least 5 persons and not more than 9 persons. Two seats allocated to DMWW and one seat allocated to other entities over 25,000 in population with one or two additional at large seats.

The Micro Group discussed alternatives to this approach, reaching a Consensus on a proposed CIWW Board consisting of one Board Representative representing each of the Members, with members in excess of 100,000 population (as determined by the last Federal Census) entitled to one total additional representative (for DMWW a total of two representatives).

Each Member Agency retains the right to provide water service under existing Total Service Agreements, and the entity served under such agreements shall, for all purposes of CIWW, be considered part of the Member Agency providing total service and will be represented by that Member Agency's CIWW Board Member(s). Except in instances where a prospective Total Service customer cannot be reasonably directly served by the Regional Authority (i.e., due to geographical proximity), prospective Total Service contracts for any Member will be deemed to be for operation of the prospective community's local water system only, with wholesale water supply provided by the Regional Authority.

Board Representatives shall be appointed by the Member entity being represented. In the case of a member that is a city, the appointment would be made by the mayor of the city, subject to approval of its City Council. In the case of board-governed members, the appointment would be made by resolution of its governing body. Total Service Customers of any Member are deemed to be represented on the CIWW board by the Member so long as they remain a party to their existing 28E.

Board Representatives will serve at the pleasure of their Member Agency.

Each Board Representative will have one (1) vote and, except as provided for optional weighted voting, a majority vote cast by Board Members then duly appointed and acting will decide matters before the Board.

Provided representatives of two (2) or more entities request a weighted vote, the Board will, at their next regularly scheduled meeting, hold a weighted vote on the following actions/items:

- Annual budget or an amendment to an approved annual budget
- Setting wholesale rates
- Adoption or modification of a capital plan or a long-range plan
- Issuance of debt
- Accepting additional governmental entities to the Water Authority
- Employing, engaging, retaining, or terminating the Director of the Authority
- Removal of a Board Member for just cause

On the above weighted vote actions/items, a majority vote of the CIWW Board would decide those matters.

The Micro Group has not yet reached consensus on whether weighted voting would be determined based on population or a consumption-based measurement, such as total annual consumption or maximum day demand.

The Board will hold regular meetings, suggested to be monthly, and one regular meeting each year will be designated as the Annual Meeting at which officers will be elected.

Board Representatives will elect officers from among their Membership, including Chair, Vice Chair and Secretary.

The Board shall establish committees including:

1. Executive Committee
2. Long Range Planning and Capital Improvements Committee
3. Finance & Audit Committee
4. Nominating Committee
5. Operating/Technical Committee

Committee Membership and Responsibilities

Executive Committee. An Executive Committee is established for the purposes, among other things, of reviewing and advising on policy issues at the request of the Executive Director and making recommendations to the Executive Director, and of making recommendations to the Board regarding the appointment of the Executive Director and thereafter periodically reviewing the performance of the Director.

The Executive Committee shall be chaired by the Board Chair, and shall be comprised of the current Chair, Vice-Chair, and Secretary of the Board, the most recently presiding Chair prior to the current Chair who remains a current Member of the Board, and additional/current Board Member(s) elected to serve on the Executive Committee following nomination by the Nominating Committee. The Membership of the Committee shall not equal or exceed the number constituting a quorum for the full Board.

Additionally, until such time assets are transferred to CIWW, each water-producing utility shall be represented as a non-voting Member of the Executive Committee, unless that entity is already represented on the Committee.

The Executive Committee shall meet at the call of the Chair or at the request of the Executive Director to fulfill its purposes as set forth herein and such other duties as may be assigned to the Executive Committee by resolution of the Board. The Executive Director of the Regional Authority and the General Manager(s) of Member contract operators shall all be provided advance notice of, and an Agenda for, meetings of the Executive Committee.

Long Range Planning and Capital Improvements Committee. A Long Range Planning and Capital Improvements Committee shall be chaired by a representative elected by the voting Members of the Committee. The Committee shall be comprised of one individual appointed by each Member (not necessarily the representative of the Regional Board) who shall be an individual familiar with the current and long-range drinking water requirements of the entity and with regional assets/infrastructure. Each Member may also appoint an alternate to its representative. The Committee shall include the Executive Director or his/her designee who shall not be a voting Member of the Committee. The Committee shall meet in accordance with a meeting schedule approved by the Committee, at the call of the Chair or at the direction of the Board, to provide technical advice or recommendation to the Board, including but not limited to: (i) planning for modifications, or additions to, source water and water treatment facilities

and timeline(s) for potential construction, and (ii) such other duties requiring technical, or business expertise as may be assigned by Resolution of the Board.

Finance & Audit Committee. A Finance & Audit Committee is hereby established for the purposes, among other things, of reviewing issues/items referred to it by the Board and making recommendations to the Board on, but not limited to, the following: (i) finances, budgets, and budget amendments of the Regional Authority, (ii) audits of Authority finances and Authority records, (iii) rates for sale of potable water, and (iv) such other duties as may be assigned by Resolution of the Board.

Members of the Finance & Audit Committee shall be appointed annually by the Board Chair after the Annual meeting of the Board in January. The Membership of the Committee shall not equal or exceed the number constituting a quorum for the full Board.

The Finance & Audit Committee shall include the Executive Director of the Authority or his/her designee and the contracted third-party financial advisor of the Authority, neither of which will be a voting Member of the Committee.

The Finance & Audit Committee shall meet in accordance with a meeting schedule approved by the Committee, at the call of the Chair or at the direction of the Board.

Nominating Committee. A Nominating Committee, consisting of at least three CIWW Board Members, shall be established for the purpose of selecting and offering nominations for election to each office of the Board at the annual meeting. Members of the Nominating Committee shall be appointed by the Chair at a regular Board meeting held at least three (3) months prior to the annual meeting. The Nominating Committee shall be chaired by a committee Member selected by the other Members of the Nominating Committee.

Operating/Technical Committee. A Technical Committee shall be chaired by a representative elected by the voting Members of the Technical Committee. The Technical Committee shall be comprised of one individual (not necessarily a representative of the Board) appointed by each Member who shall be an individual who is familiar with the Member's local distribution or business operations. Each Member may also appoint an alternate to its representative. The Technical Committee shall include the Executive Director of CIWW or his/her designee who shall not be a voting Member of the Committee. The Technical Committee shall meet in accordance with a meeting schedule approved by the Technical Committee, at the call of its chair or at the direction of the Board, to provide technical advice or recommendations to the Board, including but not limited to:

1. Determination of each Member's water consumption, including annual total consumption, maximum day demand, average day demand, average consumption over a specified number of years (e.g., 3 or 5 years), and weighted-average consumption over a specified number of years
2. Design flows for all capacity enhancements to be constructed by, or at the request and cost of, CIWW
3. Recommendations regarding capacity enhancements or other improvements proposed by one or more Members or proposed Members
4. The population served by each Member
5. Such other duties requiring technical, or business expertise as may be assigned by Resolution of the Board

Other Committees. The Board may, by resolution, designate two or more of its representatives to constitute a committee. Such committee shall, if authorized by resolution of the Board, provide advice and recommendations to the Board and/or act pursuant to the authority delegated by the Board resolution. The designation of such committee shall not operate to relieve the Board of any responsibility unless such responsibility is specifically delegated to the committee by Board resolution.

INITIAL CAPITAL CONTRIBUTIONS

Upon entering into CIWW, each Member will contribute towards the entity's start-up fund. Each Member will be asked to contribute a proportionate share of the start-up fund based on their population or demand. A total start-up requirement is yet to be finalized, but based on previous studies, is projected to be approximately \$2,000,000 in total, with contributions allocated among the Members. Assuming allocations are based on annual demand for illustration purposes, estimated contributions by Member are as follows:

Initial Start Up Contributions \$ 2,000,000 (tentative)

	% Allocation*	\$ Allocation
Altoona	4%	\$ 79,339
Ankeny	11%	224,721
Bondurant	1%	18,445
Clive	3%	64,204
DMWW	42%	841,422
Grimes	2%	49,870
Johnston	4%	75,334
Norwalk	2%	38,457
Polk City	1%	21,141
Urbandale	8%	155,383
Warren Water District	3%	57,731
Waukee	3%	66,933
WDMWW	12%	233,649
Xenia	4%	73,371
	100%	\$ 2,000,000

* For illustration purposes, allocation based on 2020 average annual demand

STAFFING AND ADVISORY SERVICE PROVIDERS

The Micro Group discussed the need for CIWW to initially employ or engage an Executive Director who is independent of any of the entities that are Members of the new Regional Authority. The Executive Director could be an individual or a firm. The Executive Director would be selected after the CIWW Board has been seated, but prior to the Operational Commencement Date. Additionally, the Micro Group discussed the need for the Executive Director to facilitate input from a specific committee or ad hoc committee on the recommendation for external financial, legal, and engineering services via a Request for Qualifications (RFQ) or Request for Proposal process (RFP). The financial, legal, and engineering consultants will assist with tasks including accounting, budgeting, rate-setting, planning, and project management and will ensure transparency and objectivity in reviewing allocation of costs, confirming operating agreement stipulations are met, implementing long range planning, etc.

The Board may employ other staff and/or engage other consultants and advisors as it determines to be appropriate and may contract with third parties for all necessary or desirable services such as billing, payroll, board administrative support, etc.

OPERATING CONTRACTS FOR PRODUCERS

The Micro Group discussed the need for CIWW and each Water Producing Member to enter into an operating contract for operation of its respective Water Production and Supply Facility. The Micro Group reached a consensus that the preferred length of the initial Operating Contract is twenty (20) years. This length of contract provides stability and certainty for the employees of the Water Producing Members and allows time for the CIWW agreement to mature before changes are made.

For newly constructed water facilities (not including expansions of currently existing facilities), CIWW may or may not contract with a Water Producing Member and could consider having employees that are directed by the Regional Authority.

ASSET TRANSFER CONSIDERATIONS

The Micro Group discussed the need for each Water Producing Member to grant to CIWW the right to acquire full ownership of their respective Water Production and Supply Facilities within five years after the Operational Commencement Date.

At such time that CIWW decides to pursue the asset transfer option, the price to acquire the Water Production and Supply Facilities of the Water Producing Members on the Asset Transfer Date shall be an amount equal to a specified percentage of net book value (e.g., 50% of net book value) of the actual Water Production and Supply Facilities transferred as of the Asset Transfer Date. The remaining, unpaid portion of the net book value will be issued as rate credits or “lease payments” until the assets are fully depreciated.

Each Water Producing Member shall continue to own, maintain, and operate its respective Water Production and Supply Facilities, until the transfer option is exercised by CIWW, and shall have the right and obligation to invest in maintaining such facilities to maintain their current operational capacity. The Regional Authority shall be responsible for planning, decision making, and funding relating to the expansion of, or significant investment to, existing treatment facilities even if prior to the Asset Transfer Date. Such expansion of, or significant investment to, existing facilities prior to the Asset Transfer Date will cause the limited transfer of the affected asset(s) to the Regional Authority.

The Micro Group reviewed general principles that will be used to determine which Water Production and Supply Facilities will be transferred via asset transfer and which will not be included in asset transfer. In general, source water and water treatment facilities necessary to produce drinking water will be included in asset transfer. Regional drinking water transmission, storage and pumping facilities, including aquifer storage and recovery (ASR) facilities, which deliver drinking water to more than one Member will also be included. Storage and pumping facilities that primarily serve Des Moines retail or Total Service customers but will also continue to serve CIWW on a limited basis, will remain DMWW assets; however, a percentage of the O&M costs for these storage facilities equal to an agreed upon percentage of use by CIWW will be billed by DMWW to CIWW on an annual basis. ASR facilities, elevated storage, and booster stations located within a Member’s own local water distribution system will not be included in asset transfer (e.g., Ankeny ASRs). Further discussion is needed to understand how the O&M costs of some regional transmission, storage and pumping facilities will be covered.

In instances where real estate is shared use between Water Production and Supply Facilities and non-water supply purposes (e.g., parks, other city functions) or is owned by a separate party altogether, designated source, treatment, transmission, storage and pumping facilities will be transferred and dedicated for the use and benefit of CIWW, but the underlying real estate will remain with the original owner. The owner will grant CIWW an easement. A long-term lease agreement or 28E agreement may need to be executed to satisfy bonding requirements.

See **Appendix A** for a listing of Water Production and Supply Facilities and whether, or to what extent, they are considered for asset transfer.

DEPRECIATION

The Micro Group discussed and affirmed that a standard useful lives and depreciation schedule should be adopted for assets of Water Producing Members of the Regional Authority.

Net book value (that is, original cost minus accumulated depreciation) has been used in the regional financial model to determine 1) joint capital cost components of the rates and 2) rate credits or fixed lease payments to asset owners and purchased capacity owners. It has also been proposed to be the basis for any cash payment to asset owners when asset transfer occurs (e.g., 50% of net book value)

The Micro Group is supportive of adopting DMWW's useful lives schedule used for financial reporting for existing assets of each Water Producing Member. For assets subsequently constructed or acquired by the region, the regional board/staff would assign the appropriate useful life.

INITIAL CAPACITY AND GROWTH-RELATED COSTS

Initial Capacity

The September 2019 Term Sheet issued by DMWW contemplated that each Member that purchased capacity in the DMWW system would receive consideration for its Purchased Capacity in the DMWW system. This consideration has been modeled as an annual lease payment (previously known as “rate credits”) comprised of two components, rate of return and annual depreciation, based on the prorated share of capacity purchased. Because Purchased Capacity owners would be compensated for their capacity in the DMWW system and capacity is effectively “reset,” each Member would be assigned an initial capacity based on historic use which would serve as the Agency’s baseline demand for future planning purposes.

Growth Related Costs

DMWW’s Phase 3 Regional Financial Model allocates growth capital based on the projected increase in Maximum Daily Demand over the next 5-year period. DMWW’s September 2019 Term Sheet outlined that funding for regional growth-related improvements would be the responsibility of the communities requiring the growth based on each community’s pro rata share of maximum day growth. A counter argument has been made that expansion projects benefit all Members, even those not growing. Examples of benefits to all may include redundancy in facilities and technological advances resulting in operational efficiencies. Under this premise that growth benefits all communities, it has been argued that all Members should share in a portion of expansion projects (commonly referred to as “benefit-pays-for-benefit”). The Micro Group agrees that all Members benefit, to some extent, from growth.

PFM Financial Advisors LLC prepared an analysis that quantifies the financial impact of adjusting the allocation of expansion costs under a regional model. PFM’s analysis considered 5 independent cost allocation scenarios representing a “benefit percentage” (i.e., 0%, 5%, 10%, 15% and 20%) and blended these independent benefit scenarios with each community’s prorated share of demand (using average day or maximum day). Under the 0% benefit scenario, the analysis assumes that all expansion costs are allocated based only on each community’s pro rata share of growth over the next five years. For the 5% scenario, the analysis assumes 5% of expansion project costs are assigned to all Members based on their prorated share of average or maximum day demand, and the remaining 95% of expansion costs are assigned to Members based on their prorated share of growth, and so on for the remaining scenarios.

In comparing the approaches, the relative impact to any Member is approximately one percent (1%) or less for each 5% “benefit” increment. **Appendix C** illustrates the analysis and the incremental changes based on these independent scenarios.

The Micro Group studied the differences in the two approaches but has not yet reached consensus on what percentage, if any, (0% - 20%) of expansion projects should be assigned to average or maximum day demand, rather than growth.

MAXIMUM DAY/PEAK DEMAND CONSIDERATIONS

Four key elements of maximum day demand and peaking were discussed by the Micro Group:

- 1) **Growth Capital** – The capital costs each Member would be responsible for in order to meet their projected growth in terms of Maximum day (discussed in the previous section “Initial Member Capacity and Growth-Related Costs”), and any reconciliation that would occur if communities exceed their allotted capacity. As stated in the previous section, the Micro Group has not yet reached a consensus on this point.
- 2) **Peaking Surcharge** - Whether a surcharge or penalty should apply if communities exceed a set maximum peaking factor (e.g., 2.5). The September 2019 Term Sheet issued by DMWW proposed Members exceeding a peak ratio of 2.5 would be subject to a surcharge. In lieu of this approach, Urbandale Water Utility and WDMWW proposed setting a future goal for Members to reach a benchmark and allow the regional board to set an ultimate peaking factor and determine the appropriate penalty when Members exceed this peaking threshold set by the regional board. It was suggested that setting a future goal (as opposed to a surcharge or penalty) would allow higher-peaking communities more time to consider what their strategy will be to achieve the goal. The Micro Group has not yet reached consensus on this point.

It was noted and agreed upon that the surcharge for peaking should not be confused with any reconciliation payments from communities whose usage exceeds their projected growth.

- 3) **Allocation of Capital Costs**– Whether the Regional Authority should allocate capital costs using maximum day units or an allocation between average day and maximum day units. Allocation of costs to maximum day may be appropriate because water systems are designed to meet maximum day demand. On the other hand, an allocation between average day and maximum day units recognizes not all water system assets are sized for maximum day demand (i.e., buildings, vehicle fleet, water source, etc.). Also, source and treatment components are used on a regular basis, not just to meet maximum demand, which supports a more blended approach. It should be noted that DMWW has historically used a blended approach in their cost of service study for capital costs. Either approach is considered consistent with principles outlined in AWWA’s M1 manual. The Micro Group has not yet reached consensus on this point.
- 4) **Allocation of Fixed O&M Costs** - Whether the Regional Authority should allocate fixed O&M costs to average day units only or an allocation between average day and maximum day units. The Base Extra Capacity cost allocation methodology outlined in AWWA’s M1 manual and used currently by DMWW and most other large wholesale water providers assigns O&M costs based on both average day and maximum day demand units. The Micro Group expressed support for following an industry-accepted methodology in assigning costs.

PRODUCTION COST ALLOCATION METHODOLOGY

The Micro Group reviewed a comparison of WDMWW and DMWW O&M fixed and variable production costs that would be proposed to be borne by the regional utility. Efforts were coordinated between DMWW and WDMWW to ensure the methodologies between the two producer utilities are consistent. The analysis shows that, using consistent methodologies for 2016 and 2020, O&M production costs stated as a cost per thousand gallons are closely aligned between those two utilities, with DMWW's allocated 2020 cost per thousand gallons of \$1.72 being slightly lower than WDMWW's allocated cost of \$1.83.

Final allocation of production costs may warrant further discussion, and allocation of costs for other Water Producing Members will be evaluated. See **Appendix B** for DMWW's Preliminary Breakdown of Cost by Type/Relationship to Regional Entity and WDMWW's Draft Allocation of Costs.

RATE OF RETURN

A rate of return is used generally in utility rate making analyses to identify capital costs for a utility under the utility basis approach for determining capital-related costs. In the regional FCS model, it is also used to calculate the “lease payments” (also called “rate credits” in prior versions of the model) to producers for the region’s use of assets not owned by the region. These “lease payments” also include payment to purchased capacity owners; consequently, rate of return impacts both Water Producing Members and purchased capacity owners.

The FCS Regional Financial model uses a rate of return assumption of 6%. FCS chose this rate of return for modeling because this is the rate of return DMWW has used in recent years for its annual cost of service study.

The Micro Group discussed that there should be a basis for the rate of return used, and studied several options common in the water industry:

1. **Benchmark Rate with Margin**

One common and simple approach is to use an industry standard benchmark rate, like prime rate or Bond Buyer index, plus a margin. The margin could be a fixed percentage (e.g., prime rate plus 2%) or a multiplier (e.g., prime rate times 1.25).

Definitions:

Prime Rate - The federal funds overnight rate is the basis for the prime rate. The prime rate is the interest rate that commercial banks charge corporate customers with the lowest credit risk, and prime serves as the starting point for most other interest rates.

As of 3/18/2021, the prime rate is 3.25%.

Bond Buyer Index - Created by the Chicago Board of Trade and published by *The Bond Buyer*, the Bond Buyer Index is a daily index of municipal bond prices. There are several versions of this index, such as the prices of 20 or 40 recently issued general obligation and revenue municipal bonds, or recently issued revenue bonds only.

As of 3/18/2021, the revenue bond buyer index was 2.76.

Calculations:

Calculated rate of returns using these benchmarks:

Prime Rate + 2% = 5.25% rate of return

Bond Buyer Index + 2% = 4.76% rate of return

It is recommended that if a benchmark is used, a “floor” or minimum rate of return be established, such as 5%.

2. Weighted Average Cost of Capital

More complex in its approach, another commonly used approach is the Weighted Average Cost of Capital. The cost of capital is calculated as a weighted average cost of capital (WACC) that takes into consideration the cost of equity and debt used by the entity as investment capital to finance the water utility assets. The formula is a simple weighted average, stated as:

$$WACC = K_e W_e + K_d W_d$$

WACC = weighted average cost of capital

K_e = cost of equity capital expressed as a percentage annual rate of return required

W_e = the relative amount of equity used in the overall capital structure

K_d = the cost of debt issued and outstanding expressed in an annual percentage rate

W_d = the relative amount of debt used in the overall capital structure

Therefore, to determine the WACC, the capital structure, interest cost on outstanding debts, and opportunity cost of the equity capital must be determined. Calculating the cost of equity is challenging due to the fact that local governments do not serve the investment community and do not provide returns to equity investors the same way that private enterprises would. Where costs of equity are easily determined for private enterprise by studying readily available market data, the equity costs of public utilities must be estimated by proxy. This means cost of equity is derived by comparing it to private utilities that are publicly traded in the markets and making a number of measured adjustments resulting in a reasonable estimate specific to the entity.

It was noted that DMWW's weighted average cost of capital is approximately 8% as shown below:

Component	Raw Cost	% of Capital Structure	Weighted Cost
Cost of Equity	8.4%	93%	7.8%
Cost of Debt	3.2%	7%	0.2%
		Weighted Avg. Cost	8.0%

It should be noted that the calculation above is for DMWW and offered here for illustrative purposes only. While debt is a relatively small percentage of capital structure for DMWW, a regional utility would likely leverage debt to a greater extent. This would increase the weighting of the debt cost in the calculation, and at current market conditions, this would decrease the weighted average cost of capital compared to the 8% shown.

Regardless of the basis chosen, rate of return should be calculated periodically to account for changes in inputs. It should be noted that changing the rate too frequently, however, could result in rate volatility. A balance should be achieved, such as evaluating rate of return every five years with capital needs.

The Micro Group also discussed that it would be appropriate to agree on a fixed rate of return for existing assets since those costs have already been incurred and allow the Regional Authority to determine an appropriate approach and basis for rate of return on newly acquired assets.

LONG RANGE PLANNING

Within one year of the Operational Commencement Date, CIWW will contract for, and adopt, a comprehensive, regional Long Range Plan which will guide regional investment in source, treatment, transmission, storage, and pumping facilities to meet drinking water needs of the Members over a planning horizon of not less than ten (10) years.

The Long Range Plan shall take into account all factors relevant to the mission of CIWW, including: expected growth in water requirements of the Members; source water availability and quality; long range trends affecting source water supplies and allocations, including impacts of climate change, water treatment capacities and requirements, and the sufficiency of quantity to meet demands at reasonable cost; and all other matters as needed to assure the safety of drinking water supplies.

The Long Range Plan shall be updated on a regular basis as determined by the CIWW Board.

Each Member shall participate in, and support, the process of preparing and updating the Long Range Plan by making its data and information available to CIWW and to its consultants and contractors. Each Member shall supply its best estimates of its future water requirements and demand in support of CIWW's planning efforts within a reasonable time after requests.

In 2017, DMWW contracted for completion of the DMWW Long Range Plan (2017 LRP). The 2017 LRP used population, water use, and production statistics from all regional entities to project the necessary source, treatment, transmission, storage, and pumping needs for the Des Moines metropolitan region through the year 2040. In 2021, DMWW contracted for an update to the 2017 LRP considering five additional years of project and demand data. Other Water Producing Members have completed similar Long Range Plans and Needs Assessments. Initially, these Long Range Plans and Needs Assessments will guide capital investment by the Water Producing Members.

The Regional Authority will maintain a sufficient reserve capacity (e.g., 10% of total capacity).

WATER SHORTAGE PLANNING

The group discussed the need for CIWW to adopt a universal water shortage plan in the case of drought, mechanical failure, or other adversity that would jeopardize water production in the region. In 2013, DMWW developed and approved a water shortage plan, which was presented and supported by Central Iowa Regional Drinking Water Commission (CIRDWC). Since 2013, with little variance, wholesale customers have adopted and implemented the plan.

STANDARD OF CARE

The group discussed that CIWW should establish standards of care provisions, which should be part of the 28E forming CIWW. Standards of care related to adequate planning, meeting drinking water standards, complying with water supply operations obligations, and other factors will be considered. Members will be expected to make their best efforts to meet these standards of care laid out in the 28E agreement.

CIWW 28E AGREEMENT

The outcomes described in this Micro Group Report will be used to inform the development of the CENTRAL IOWA WATER WORKS 28E/28F AGREEMENT. The 28E/28F agreement will serve as the offer for participation in Regional Governance of water production in the Des Moines metro area and will further detail the structure and operation of the proposed regional entity.

Subsequent amendments to the 28E/28F will be subject to a significantly higher weighted vote (e.g., 75% or higher) of the CIWW Board.

SUMMARY OF OPEN ISSUES

The following is a summary of issues noted throughout this document for which the Micro Group has not yet reached consensus.

Summary of Open Issues for Ongoing Discussion:

1. How weighted voting will be determined (for example, based on population or a consumption-based measurement such as total annual consumption or maximum day demand).
2. What percentage of expansion costs, if any, are considered to benefit all Members and should therefore be based on average or maximum day demand, rather than growth projections.
3. Whether or when a surcharge or penalty should apply if communities exceed a set maximum peaking factor (e.g., 2.5).
4. Whether the Regional Authority should allocate capital costs to maximum day units only or an allocation between average day and maximum day units.

APPENDIX A

LISTING OF WATER PRODUCTION AND SUPPLY FACILITIES

Function*	Facility Name / Asset Description	Owner	Comments
MTR	Wholesale Meters	DMWW	
SOS	Fleur Infiltration Gallery	DMWW	Easement***
SOS	Raccoon River Intake	DMWW	Easement***
SOS	Des Moines River Intake	DMWW	Easement***
SOS	Saylorville Lake Storage Contract	DMWW	Assignment**
SOS	Maffitt Raw Water - Collector Wells	DMWW	Easement***
SOS	Maffitt Reservoir	DMWW	Easement***
SOS	Chain of Lakes	DMWW	Easement***
OS	Saylorville Raw Water - Collector Wells	DMWW	Easement***
SOS	AC Ward Jordan Aquifer Wells	WDMWW	Easement***
SOS	AC Ward Alluvial Aquifer Wells	WDMWW	Easement***
SOS	Altoona Jordan Aquifer Wells	Altoona	
OS	Polk City Alluvial Aquifer Wells	Polk City	
SOS	Urbandale Raw Water Quarries	Urbandale	Easement***
SOS	AC Ward Wells and Equipment	WDMWW	Easement***
STO	Army Post Road ASR Well	DMWW	Existing agreement
STO	LP Moon ASR Well	DMWW	
STO	McMullen ASR Well	DMWW	
STO	Ankeny ASR Wells	Ankeny	Excluded
STO	Waukee ASR Well	Waukee	Excluded
STO	98th Street Tower	WDMWW	Existing agreement
STO	Joint East Side Tower	DMWW	Existing agreement
STO	Tenny Standpipe	DMWW	
STO	Wilchinski Standpipes	DMWW	Exclude****
BPS	LP Moon Booster & Storage	DMWW	
BPS	Polk Co. Booster & Storage	DMWW	
BPS	Nollen Booster & Standpipe	DMWW	Excluded****
BPS	Hazen Booster & Storage	DMWW	Excluded****
BPS	Joint SW Booster Station	DMWW	
BPS	Polk City Booster Station	DMWW	
BPS	Urbandale Booster Station	Urbandale	Excluded
BPS	Waukee Booster Station	Waukee	Excluded
BPS	Norwalk Booster Station	Norwalk	Excluded
BPS	Airport Booster Station	DMWW	Excluded
TMT	Fleur WTP	DMWW	Easement***
TMT	Fleur Laboratory	DMWW	Process Analysis Only
TMT	McMullen WTP	DMWW	Easement***

TMT	Saylorville WTP	DMWW	
TMT	AC Ward WTP	WDMWW	Easement***
TMT	Altoona WTP	Altoona	Easement***
TMT	Polk City WTP	Polk City	Easement***
TRN	Core Network Transmission Mains (706,450 LF)*****	DMWW	

**MTR = Meters; BPS = Booster/Pumping Station; SOS = Sources of Supply; STO = Storage; TMT = Treatment Facilities; TRN= Transmission Lines*

**It is not clear that DMWWs rights to water storage in Saylorville Reservoir are transferable.

***Facilities transferred for the use and benefit of the Regional Authority but Real Estate to remain with the original owner in cases where facilities are on land that is either owned by a separate party altogether or dedicated to a non-utility purpose (e.g., parks, other city functions).

**** Storage and pumping facilities that primarily serve Des Moines retail or DMWW total service customers would remain DMWW assets but a percentage of the O&M costs for these storage facilities equal to an agreed upon percentage of use by the Regional Authority, would be billed by DMWW to the Regional Authority on an annual basis.

APPENDIX B

BREAKDOWN OF PRELIMINARY DMWW COST BY COST TYPE/RELATIONSHIP TO REGIONAL ENTITY

Related to Region	Cost Breakdown	Breakdown Type	% related to Region
Yes	ASR Maintenance	100% Region	100.00%
	DMWW Park (excluding venues)	100% Region	100.00%
	Engineering - WP	100% Region	100.00%
	Storage/Booster Maintenance	100% Region	100.00%
	WP - Administration	100% Region	100.00%
	WP - Chemicals	100% Region	100.00%
	WP - Energy	100% Region	100.00%
	WP - Laboratory & Research	100% Region	100.00%
	WP - Lime Residuals	100% Region	100.00%
	WP - Source of Supply	100% Region	100.00%
	WP - Treatment Maintenance	100% Region	100.00%
Allocated	Corporate Insurance - Property	Assets	93.10%
	Corporate Insurance - Work Comp	Employees	48.57%
	Customer Service-Related Expenses	Accounts	0.06%
	Engineering Related Expenses	Capital Exposure	52.02%
	Facility Maintenance	Buildings	83.33%
	Finance Related Expenses	Consumption	51.36%
	Fleet Maintenance	Vehicle	31.00%
	HR Related Expenses	Employees	48.57%
	Information Technology Related Exp	Consumption	51.36%
	OCEO Related Expenses	Consumption	51.36%
	Security/EOC Related Expenses	Consumption	51.36%
	WD - Operations	Water Mains	30.18%
No	Botanical Center	No Allocation	0.00%
	Corporate Insurance - General Liability	No Allocation	0.00%
	Direct Customer Service	No Allocation	0.00%
	Engineering - Direct	No Allocation	0.00%
	WD - Direct Maintenance	No Allocation	0.00%
	WD - Hydrant Operations	No Allocation	0.00%

DRAFT Allocation of Costs – West Des Moines Water Works

Using FY 2019 as model

10-30-20

Labor

Administration

General Manager – 50%

Customer Service and Finance

Finance Manager – 25%

Accountant -30%

Secretary - 25%

Business Relations Manager – 5% (remaining is included in costs for basic service charge)

IT Director – 25%

Engineering

Engineering Manager – Project dependent (~10-15%)

Engineer – Project dependent (~10-15%)

Water Production

Water Production Manager – 70%

Water Production Supervisor – 90%

Plant Operator -80%

Maintenance Technician –80%

Plant Utility Worker -80%

Press Operator - 90%

Plant Secretary – 40%

Customer Service Representatives, Meter Technician, Distribution Specialists, Distribution Supervisor, Distribution Manager – 0%

Other Costs

Water Treatment Plant Operation and Maintenance

Payroll and Employee Benefits

Salaries and Wages - *Proportioned using numbers above*

Overtime – *proportioned using numbers above*

Water Works' Share - FICA– *proportioned using numbers above*

Water Works' Share - IPERS moved to Pension Expense in 2015– *proportioned using numbers above*

Accrued Sick Leave Expense – *proportioned using numbers above*

"Water Works' Share Deferred Compensation"– *proportioned using numbers above*

Group Health and Life Insurance– *proportioned using numbers above*

Allowances– *proportioned using numbers above*

Mileage – *100% regional (very minor here)*

Commodities and Services

Consulting Fees – IDNR/Water quality testing – *100% regional cost*
IDNR and Water Quality Testing"

Consulting Fees – Safety - - *100% regional cost (these costs are divided among our divisions)*

Data Processing - Maintenance and Consulting Fees – *proportioned using numbers above*

IDNR Operation Permit – *100% regional cost*

Property and Other Insurance – *Treatment Plant and Source Water Portions Only (confirming this is currently split out)*

Maintenance -Buildings and Structures - - *100% regional cost (pump stations and towers maintenance are billed in distribution)*

Maintenance -Equipment– *100% regional cost*

Maintenance-Generators– *100% regional cost*

Maintenance-Vehicles - *Proportioned using numbers above*

Communication - *Proportioned using numbers above*

Continuing Education and Travel -- *Proportioned using numbers above*

Electricity – *Not currently split, could sub meter or subtract out percentage for distribution, engineering, and admin (needs more evaluation)*

Natural Gas - *Not currently split, could sub meter or subtract out percentage for distribution, engineering, and admin (needs more evaluation)*

Stormwater Fees-City of WDM – *Now \$0 unless they won't honor the agreement with regionalization*

Depreciation – *100% regional cost*

Maintenance – Grounds – *current all ground maintenance goes here but serves same complex as distribution and administration, could calculate percentage on square feet.*

Purchased Water - (Elm Street, 88th & University, Westside O&M, 92 & University, 88th Street, Maffitt Lake Dr., Alluvion, Osmium) - *100% WDMWW cost*

Purchased Water -Westside O & M - - *100% WDMWW cost*

Purchased Water -Grand & Glen Oaks -- *100% WDMWW cost*

Minor Equipment - *Proportioned using numbers above*

Miscellaneous Commodities - *Proportioned using numbers above*

Vehicles and Equipment - Fuel - *Proportioned using numbers above*

Water Treatment Chemicals and Laboratory Supplies

Lime Residuals Removal (Lagoons) – *100% regional cost*

Lime Residuals Hauling (Press) – *100% regional cost*

Lime– *100% regional cost*

Soda Ash– *100% regional cost*

Coagulant– *100% regional cost*

Carbon Dioxide– *100% regional cost*

Salt– *100% regional cost*

Hypo-Chlorite– *100% regional cost*

Other Chemicals– *100% regional cost*

Laboratory Supplies– *100% regional cost*

Engineering

%time on projects for region

ie. 10% of Engineering Project Manager

10% of Salary and benefits + some fixed overhead cost per employee?

Finance

50% Salary and benefits Finance Manager + some fixed overhead cost per employee

50% Salary and benefits Accountant + Some fixed overhead cost per employee

5% Salary and benefits Business Relations Manager + some fixed overhead cost per employee

25% Salary and benefits Secretary + Some fixed overhead cost per employee

25% Salary and benefits IT Director + Some fixed overhead cost per employee

Administration

Salaries and Trustees - *Remove trustees' stipend and use percentage above for GM comp*

Employee Fitness Incentive Program – *proportioned using numbers above*

Water Works' Share - FICA– *proportioned using numbers above*

Accrued Sick Leave Expense– *proportioned using numbers above*

Other Post-Employment Benefits Expense– *proportioned using numbers above*

GASB 68 Pension Expense- excess over IPERS employer contributions–
proportioned using numbers above

Water Works' Share -Deferred Compensation– *proportioned using numbers above*

Group Health and Life Insurance– *proportioned using numbers above*

Allowances– *proportioned using numbers above*

Mileage– *proportioned using numbers above*

Employee Recognition Program – *proportioned using numbers above*

Commodities and Services

Economic Development Contribution

Advertising and Legal Publications – mostly related to board actions. Some proportion

Consulting Fees – *project specific, could be 100%, could be 0%, could be proportional to the numbers above*

Engineering, Accounting and Legal

Consulting Fees -Data Processing – *proportioned using numbers above*

Dues and Memberships – *proportioned using numbers above*

Postage and Shipping – *proportioned using numbers above*

Maintenance – Building – *proportioned using numbers above*

Communication -- *proportioned using numbers above*

Continuing Education and Travel – *proportioned using numbers above*

Electricity – *proportioned using numbers above*

Natural Gas – *proportioned using numbers above*

Maintenance – Grounds – *proportioned using numbers above*

Miscellaneous Commodities – *proportioned using numbers above*

Vehicles and Equipment - Fuel -\$0

Office Supplies – *proportioned using numbers above*

Raccoon River Reimbursement to City of WDM – *100% WDMWW*

APPENDIX C

Growth Pays for Growth vs. Benefit Pays for Benefit

Exhibit 1: Allocation Assumptions

Consistent with Phase 3 Regional Projection Model Prepared by FCS Group updated in Fall 2019

2020 Growth Needs (5 years)			Average Daily Demand (ADD)			Max Day Demand (MDD)		
	2020	% Allocation		2020	% Allocation		2020	% Allocation
Des Moines	0.821	7.114%	Des Moines	21.60	34.729%	Des Moines	43.20	33.439%
Berwick	0.013	0.116%	Berwick	0.07	0.119%	Berwick	0.13	0.103%
Bondurant	0.580	5.027%	Bondurant	0.72	1.158%	Bondurant	1.44	1.115%
Clive	0.250	2.167%	Clive	1.80	2.894%	Clive	4.50	3.484%
Cumming	0.040	0.346%	Cumming	0.07	0.115%	Cumming	0.13	0.099%
Johnston	0.690	5.981%	Johnston	2.84	4.560%	Johnston	7.09	5.489%
Norwalk	0.400	3.467%	Norwalk	1.00	1.608%	Norwalk	1.90	1.471%
Pleasant Hill	0.110	0.954%	Pleasant Hill	1.47	2.369%	Pleasant Hill	2.45	1.893%
Polk County	0.178	1.546%	Polk County	1.46	2.344%	Polk County	2.62	2.032%
Runnells	0.012	0.102%	Runnells	0.07	0.105%	Runnells	0.12	0.091%
Warren County	-	0.000%	Warren County	0.02	0.039%	Warren County	0.04	0.033%
Warren Rural	0.188	1.628%	Warren Rural	1.75	2.814%	Warren Rural	3.52	2.726%
Windsor Heights	0.004	0.035%	Windsor Heights	0.45	0.716%	Windsor Heights	0.89	0.689%
Xenia	0.786	6.814%	Xenia	1.59	2.564%	Xenia	2.87	2.222%
Altoona	0.840	7.279%	Altoona	2.30	3.701%	Altoona	4.20	3.250%
Ankeny	2.100	18.204%	Ankeny	7.02	11.288%	Ankeny	13.93	10.786%
Grimes	0.870	7.541%	Grimes	1.85	2.975%	Grimes	3.14	2.431%
Polk City	0.147	1.274%	Polk City	0.60	0.965%	Polk City	1.26	0.975%
Urbandale	1.167	10.118%	Urbandale	4.63	7.452%	Urbandale	11.22	8.682%
Waukee	0.680	5.891%	Waukee	2.25	3.621%	Waukee	5.63	4.359%
WDMWW	1.661	14.397%	WDMWW	8.62	13.865%	WDMWW	18.90	14.631%
Total	11.537	100.000%	Total	62.19	100.000%	Total	129.18	100.000%
Total Service	0.357	3.098%	Total Service	3.61	5.807%	Total Service	6.38	4.940%
Des Moines (with)	1.178	10.212%	Des Moines (with)	25.21	40.536%	Des Moines (with)	49.58	38.379%

Exhibit 2: Allocations % Considered for Discussion

	Expansion Allocation (% of Average Day Demand Included)					Change to Allocation vs 100% Growth				
	0%	5%	10%	15%	20%	5%	10%	15%	20%	
Des Moines	7.114%	8.495%	9.876%	11.256%	12.637%	1.381%	2.762%	4.142%	5.523%	
Berwick	0.116%	0.116%	0.116%	0.116%	0.117%	0.000%	0.000%	0.000%	0.001%	
Bondurant	5.027%	4.834%	4.640%	4.447%	4.253%	-0.193%	-0.387%	-0.580%	-0.774%	
Clive	2.167%	2.203%	2.240%	2.276%	2.312%	0.036%	0.073%	0.109%	0.145%	
Cumming	0.346%	0.334%	0.323%	0.311%	0.300%	-0.012%	-0.023%	-0.035%	-0.046%	
Johnston	5.981%	5.910%	5.839%	5.768%	5.697%	-0.071%	-0.142%	-0.213%	-0.284%	
Norwalk	3.467%	3.374%	3.281%	3.188%	3.095%	-0.093%	-0.186%	-0.279%	-0.372%	
Pleasant Hill	0.954%	1.025%	1.096%	1.166%	1.237%	0.071%	0.142%	0.212%	0.283%	
Polk County	1.546%	1.586%	1.626%	1.666%	1.706%	0.040%	0.080%	0.120%	0.160%	
Runnells	0.102%	0.102%	0.102%	0.102%	0.103%	0.000%	0.000%	0.000%	0.001%	
Warren County	0.000%	0.002%	0.004%	0.006%	0.008%	0.002%	0.004%	0.006%	0.008%	
Warren Rural	1.628%	1.687%	1.747%	1.806%	1.865%	0.059%	0.119%	0.178%	0.237%	
Windsor Heights	0.035%	0.069%	0.103%	0.137%	0.171%	0.034%	0.068%	0.102%	0.136%	
Xenia	6.814%	6.602%	6.389%	6.177%	5.964%	-0.212%	-0.425%	-0.637%	-0.850%	
Altoona	7.279%	7.100%	6.921%	6.742%	6.563%	-0.179%	-0.358%	-0.537%	-0.716%	
Ankeny	18.203%	17.856%	17.511%	17.166%	16.819%	-0.347%	-0.692%	-1.037%	-1.384%	
Grimes	7.541%	7.313%	7.084%	6.856%	6.628%	-0.228%	-0.457%	-0.685%	-0.913%	
Polk City	1.274%	1.259%	1.243%	1.228%	1.212%	-0.015%	-0.031%	-0.046%	-0.062%	
Urbandale	10.118%	9.985%	9.851%	9.718%	9.585%	-0.133%	-0.267%	-0.400%	-0.533%	
Waukee	5.891%	5.778%	5.664%	5.551%	5.437%	-0.113%	-0.227%	-0.340%	-0.454%	
WDMWW	14.397%	14.370%	14.344%	14.317%	14.291%	-0.027%	-0.053%	-0.080%	-0.106%	
Total	100.000%	100.000%	100.000%	100.000%	100.000%	0.000%	0.000%	0.000%	0.000%	
Total Service	3.099%	3.234%	3.370%	3.504%	3.642%	0.135%	0.271%	0.405%	0.543%	
Des Moines (with)	10.213%	11.729%	13.246%	14.760%	16.279%	1.516%	3.033%	4.547%	6.066%	

Growth Pays for Growth vs. Benefit Pays for Benefit

Exhibit 3: Financing Assumptions for \$191 Million of Project Costs

Example Water Revenue Bonds, Series 2021

SOURCES & USES			DEBT SERVICE SCHEDULE					
SOURCES			Date	Principal	Coupon	Interest	Debt Service	Annual Debt Service
Par Amount of Bonds	208,885,000.00		12/1/2021			4,177,700	4,177,700	
Accrued Interest	0.00		6/1/2022	7,015,000	4.000%	4,177,700	11,192,700	15,370,400
Other Monies	0.00		12/1/2022			4,037,400	4,037,400	
Total Sources	208,885,000.00		2	6/1/2023	7,285,000	4.000%	4,037,400	11,332,400
				12/1/2023		3,891,500	3,891,500	15,369,800
			3	6/1/2024	7,585,000	4.000%	3,891,500	11,476,500
				12/1/2024		3,739,800	3,739,800	15,368,000
			4	6/1/2025	7,890,000	4.000%	3,739,800	11,629,800
				12/1/2025		3,582,000	3,582,000	15,369,000
			5	6/1/2026	8,205,000	4.000%	3,582,000	11,787,000
				12/1/2026		3,417,900	3,417,900	15,370,800
			6	6/1/2027	8,535,000	4.000%	3,417,900	11,952,900
				12/1/2027		3,247,200	3,247,200	15,369,400
			7	6/1/2028	8,875,000	4.000%	3,247,200	12,122,200
				12/1/2028		3,069,700	3,069,700	15,369,400
			8	6/1/2029	9,230,000	4.000%	3,069,700	12,299,700
				12/1/2029		2,885,100	2,885,100	15,370,200
			9	6/1/2030	9,600,000	4.000%	2,885,100	12,485,100
				12/1/2030		2,693,100	2,693,100	15,371,200
			10	6/1/2031	9,985,000	4.000%	2,693,100	12,678,100
				12/1/2031		2,493,400	2,493,400	15,371,800
			11	6/1/2032	10,385,000	4.000%	2,493,400	12,878,400
				12/1/2032		2,285,700	2,285,700	15,371,400
			12	6/1/2033	10,800,000	4.000%	2,285,700	13,085,700
				12/1/2033		2,069,700	2,069,700	15,369,400
			13	6/1/2034	11,230,000	4.000%	2,069,700	13,299,700
				12/1/2034		1,845,100	1,845,100	15,370,200
			14	6/1/2035	11,680,000	4.000%	1,845,100	13,525,100
				12/1/2035		1,611,500	1,611,500	15,368,000
			15	6/1/2036	12,145,000	4.000%	1,611,500	13,756,500
				12/1/2036		1,368,600	1,368,600	15,372,200
			16	6/1/2037	12,635,000	4.000%	1,368,600	14,003,600
				12/1/2037		1,115,900	1,115,900	15,371,800
			17	6/1/2038	13,140,000	4.000%	1,115,900	14,255,900
				12/1/2038		853,100	853,100	15,371,200
			18	6/1/2039	13,665,000	4.000%	853,100	14,518,100
				12/1/2039		579,800	579,800	15,369,600
			19	6/1/2040	14,210,000	4.000%	579,800	14,789,800
				12/1/2040		295,600	295,600	15,371,200
			20	6/1/2041	14,780,000	4.000%	295,600	15,075,600
						208,885,000	98,519,600	307,404,600
								307,404,600

ASSUMPTIONS			
Dated Date	6/1/2021		
Delivery Date	6/1/2021		
First Interest Date	12/1/2021		
First Principal Date	6/1/2022		
Last Principal Date	6/1/2041		
Arbitrage Yield	4.00000%		
TIC	4.11293%		
AIC	4.13583%		
Average Life	11.79 Years		

Average Debt Service	Project Proceeds	Allocation
\$6,609,199	\$108,870,000	43% Core
\$8,761,031	\$82,130,000	57% Expansion
\$15,370,230	\$191,000,000	100% Total

Scale: Revenues Bonds 4% Coupons - Estimated

Growth Pays for Growth vs. Benefit Pays for Benefit

Exhibit 4 - Annual Cost Allocation

	Expansion Allocation (% of Average Day Demand Included)					Change to Allocation vs 100% Growth				
	0%	5%	10%	15%	20%	5%	10%	15%	20%	
Des Moines	\$623,260	\$744,250	\$865,239	\$986,142	\$1,107,132	\$120,990	\$241,980	\$362,882	\$483,872	
Berwick	\$10,163	\$10,163	\$10,163	\$10,163	\$10,250	\$0	\$0	\$0	\$88	
Bondurant	\$440,417	\$423,508	\$406,512	\$389,603	\$372,607	-\$16,909	-\$33,905	-\$50,814	-\$67,810	
Clive	\$189,852	\$193,006	\$196,247	\$199,401	\$202,555	\$3,154	\$6,396	\$9,550	\$12,703	
Cumming	\$30,313	\$29,262	\$28,298	\$27,247	\$26,283	-\$1,051	-\$2,015	-\$3,066	-\$4,030	
Johnston	\$523,997	\$517,777	\$511,557	\$505,336	\$499,116	-\$6,220	-\$12,441	-\$18,661	-\$24,881	
Norwalk	\$303,745	\$295,597	\$287,449	\$279,302	\$271,154	-\$8,148	-\$16,296	-\$24,443	-\$32,591	
Pleasant Hill	\$83,580	\$89,801	\$96,021	\$102,154	\$108,374	\$6,220	\$12,441	\$18,573	\$24,794	
Polk County	\$135,446	\$138,950	\$142,454	\$145,959	\$149,463	\$3,504	\$7,009	\$10,513	\$14,018	
Runnells	\$8,936	\$8,936	\$8,936	\$8,936	\$9,024	\$0	\$0	\$0	\$88	
Warren County	\$0	\$175	\$350	\$526	\$701	\$175	\$350	\$526	\$701	
Warren Rural	\$142,630	\$147,799	\$153,055	\$158,224	\$163,393	\$5,169	\$10,426	\$15,595	\$20,764	
Windsor Heights	\$3,066	\$6,045	\$9,024	\$12,003	\$14,981	\$2,979	\$5,958	\$8,936	\$11,915	
Xenia	\$596,977	\$578,403	\$559,742	\$541,169	\$522,508	-\$18,573	-\$37,234	-\$55,808	-\$74,469	
Altoona	\$637,715	\$622,033	\$606,351	\$590,669	\$574,986	-\$15,682	-\$31,364	-\$47,047	-\$62,729	
Ankeny	\$1,594,770	\$1,564,370	\$1,534,144	\$1,503,919	\$1,473,518	-\$30,401	-\$60,626	-\$90,852	-\$121,253	
Grimes	\$660,669	\$640,694	\$620,631	\$600,656	\$580,681	-\$19,975	-\$40,038	-\$60,013	-\$79,988	
Polk City	\$111,616	\$110,301	\$108,900	\$107,585	\$106,184	-\$1,314	-\$2,716	-\$4,030	-\$5,432	
Urbandale	\$886,441	\$874,789	\$863,049	\$851,397	\$839,745	-\$11,652	-\$23,392	-\$35,044	-\$46,696	
Waukee	\$516,112	\$506,212	\$496,225	\$486,325	\$476,337	-\$9,900	-\$19,888	-\$29,788	-\$39,775	
WDMWW	\$1,261,326	\$1,258,960	\$1,256,682	\$1,254,317	\$1,252,039	-\$2,365	-\$4,643	-\$7,009	-\$9,287	
Total	\$8,761,031	\$8,761,031	\$8,761,031	\$8,761,031	\$8,761,031	\$0	\$0	\$0	\$0	
Total Service	\$271,504	\$283,332	\$295,247	\$306,987	\$319,077	\$11,827	\$23,742	\$35,482	\$47,572	
Des Moines (with)	\$894,764	\$1,027,581	\$1,160,486	\$1,293,128	\$1,426,208	\$132,817	\$265,722	\$398,364	\$531,444	

Exhibit 5: Change to Cost Allocation vs Estimated 2020 Regional Cost Allocation (% Increase to Allocation)

	Total Rate 2020 (FCS)	Annual Demand (kgal)	Annual Budget Allocation	5% Change to Allocation		10% Change to Allocation		15% Change to Allocation		20% Change to Allocation	
Des Moines	\$2.80	7,883,275	\$22,073,169	\$120,990	0.55%	\$241,980	1.10%	\$362,882	1.64%	\$483,872	2.19%
Berwick	\$2.80	27,101	\$75,884	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$88	0.12%
Bondurant	\$5.96	262,800	\$1,566,288	-\$16,909	-1.08%	-\$33,905	-2.16%	-\$50,814	-3.24%	-\$67,810	-4.33%
Clive	\$3.01	657,000	\$1,977,570	\$6,396	0.16%	\$6,396	0.32%	\$9,550	0.48%	\$12,703	0.64%
Cumming	\$2.80	26,025	\$72,869	-\$1,051	-1.44%	-\$2,015	-2.77%	-\$3,066	-4.21%	-\$4,030	-5.53%
Johnston	\$5.42	1,035,140	\$5,610,459	-\$6,220	-0.11%	-\$12,441	-0.22%	-\$18,661	-0.33%	-\$24,881	-0.44%
Norwalk	\$4.17	365,000	\$1,522,050	-\$8,148	-0.54%	-\$16,296	-1.07%	-\$24,443	-1.61%	-\$32,591	-2.14%
Pleasant Hill	\$2.80	537,655	\$1,505,435	\$6,220	0.41%	\$12,441	0.83%	\$18,573	1.23%	\$24,794	1.65%
Polk County	\$2.80	532,188	\$1,490,127	\$3,504	0.24%	\$7,009	0.47%	\$10,513	0.71%	\$14,018	0.94%
Runnells	\$2.80	23,849	\$66,777	\$0	0.00%	\$0	0.00%	\$0	0.00%	\$88	0.13%
Warren County	\$2.80	8,760	\$24,528	\$175	0.71%	\$350	1.43%	\$526	2.14%	\$701	2.86%
Warren Rural	\$3.38	638,750	\$2,158,975	\$5,169	0.24%	\$10,426	0.48%	\$15,595	0.72%	\$20,764	0.96%
Windsor Heights	\$2.80	162,425	\$454,790	\$2,979	0.65%	\$5,958	1.31%	\$8,936	1.96%	\$11,915	2.62%
Xenia	\$4.42	582,107	\$2,572,913	-\$18,573	-0.72%	-\$37,234	-1.45%	-\$55,808	-2.17%	-\$74,469	-2.89%
Altoona	\$3.54	840,033	\$2,973,716	-\$15,682	-0.53%	-\$31,364	-1.05%	-\$47,047	-1.58%	-\$62,729	-2.11%
Ankeny	\$4.52	2,562,300	\$11,581,596	-\$30,401	-0.26%	-\$60,626	-0.52%	-\$90,852	-0.78%	-\$121,253	-1.05%
Grimes	\$3.97	675,250	\$2,680,743	-\$19,975	-0.75%	-\$40,038	-1.49%	-\$60,013	-2.24%	-\$79,988	-2.98%
Polk City	\$4.62	219,000	\$1,011,780	-\$1,314	-0.13%	-\$2,716	-0.27%	-\$4,030	-0.40%	-\$5,432	-0.54%
Urbandale	\$3.90	1,691,568	\$6,597,114	-\$11,652	-0.18%	-\$23,392	-0.35%	-\$35,044	-0.53%	-\$46,696	-0.71%
Waukee	\$4.75	822,038	\$3,904,682	-\$9,900	-0.25%	-\$19,888	-0.51%	-\$29,788	-0.76%	-\$39,775	-1.02%
WDMWW	\$3.97	3,147,395	\$12,495,158	-\$2,365	-0.02%	-\$4,643	-0.04%	-\$7,009	-0.06%	-\$9,287	-0.07%
Total		\$22,699,659	\$82,416,623	\$0		\$0		\$0		\$0	
Total Service	n/a	\$1,318,003	\$3,690,409	\$11,827	0.57%	\$23,742	1.27%	\$35,482	1.84%	\$47,572	2.78%
Des Moines (with)	\$3	\$9,201,278	\$25,763,579	\$132,817	0.52%	\$265,722	1.03%	\$398,364	1.55%	\$531,444	2.06%

GLOSSARY

Asset Transfer Date

The date at which all production-related assets of Water Producing Members transfer to CIWW.

Board of Trustees

The regional governing body of CIWW comprised of one or two representatives for each Member.

Board Trustee (or Trustee)

An individual, selected by each Member, to serve on the regional Board of Trustees of CIWW.

Central Iowa Water Works (CIWW)

The name of the regional production entity formed to provide wholesale water service to Members. Also called **Regional Authority**.

Consensus

As used in this document, consensus implies agreement among individuals comprising the Micro Group. It should not be construed in any way to imply formal or informal agreement by the governing boards of the Micro Group Members.

Founding Agency Members

An original participating entity to the regional water authority, involved in the initial set up of CIWW.

Member(s)

A city or board-governed entity party to the 28E Agreement forming the Regional Authority.

Micro Group

An ad hoc group of board and staff representatives from the board-governed utilities of Des Moines Water Works, West Des Moines Water Works, and Urbandale Water Utility, formed to study certain issues and questions related to the formation of a regional water production utility. The opinions expressed by the Micro Group solely reflect those of the individuals participating, and in no way should be interpreted to reflect the views of their associated governing boards.

Operating Contract

The contract entered into by CIWW and Water Producing Members outlining the terms and responsibilities of the Water Producing Members and CIWW.

Operational Commencement Date

The date on which the operations of the Regional Authority begin, which is subsequent to the effective date.

Regional Authority

The regional production entity formed to provide wholesale water service to Members. Also called **Central Iowa Water Works** or **CIWW**.

Total Service Customer

Communities or entities served under 28E Agreement by another entity, such as Des Moines Water Works, for the operation and maintenance of that community/entity's water system.

Water Producing Members

Members of the regional utility owning water production and supply facilities and serving as municipal water suppliers to wholesale and/or retail customers.

Water Production and Supply Facility

Source, treatment, and transmission assets used to provide water supply to wholesale or retail customers.