

# FUTURE WATER SUPPLY NEEDS FOR WEST DES MOINES

CHRISTINA MURPHY, GENERAL MANAGER, WEST DES MOINES WATER WORKS

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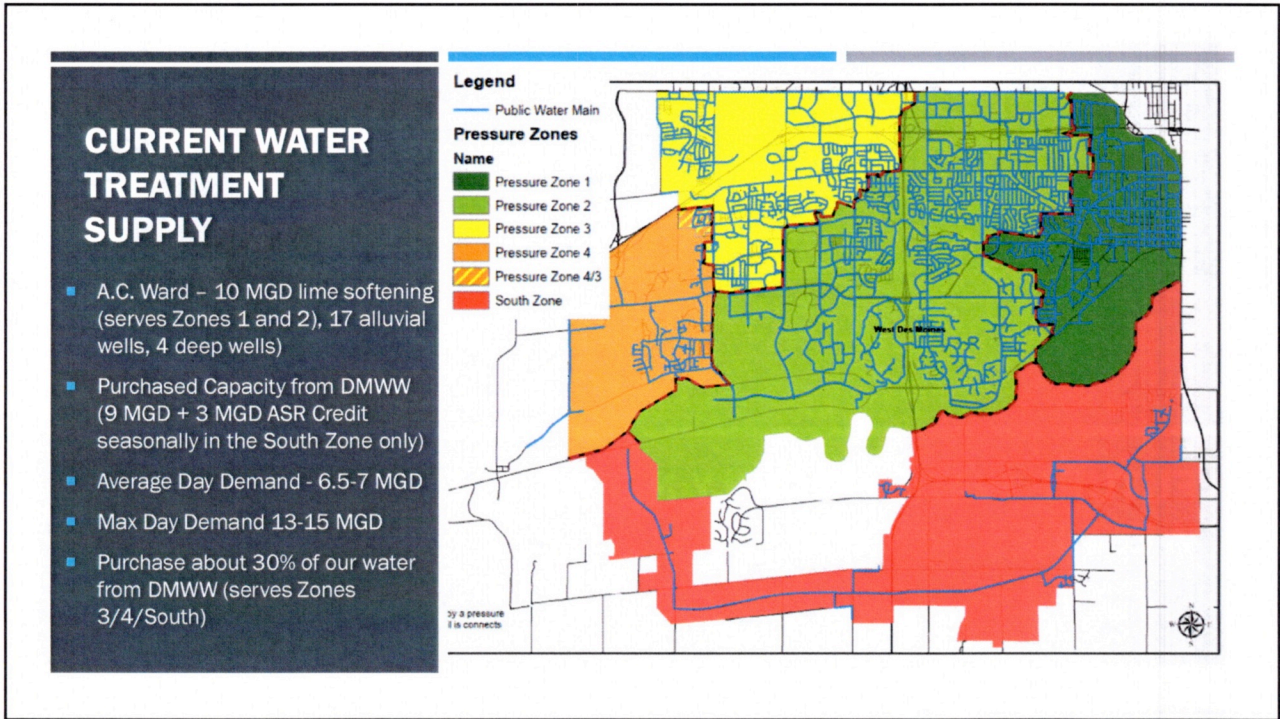
## WHO ARE WE?

- Three-member Board established originally in 1950, expanded to five in 1982
- Appointed by the mayor, approved by the city council, act independently in accordance with state statute to provide policies and direction on decisions related to the water utility.
  - Scott Brennan, Chair
  - Gretchen Tegeler, Vice Chair
  - Jody Smith, Trustee
  - Mary Thomsen, Trustee
  - Erin Sheriff, Trustee
- Funded through water revenues and water rates not taxes.
- Staff of 39 to manage water production, distribution, engineering and capital improvements, customer service and billing, and finance.



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## HISTORY OF CAPACITY CONTRIBUTIONS TO DMWW

- 1974 - WDMWW began to purchase water from DMWW through our Elm Street connection.
- 1992 - Growth to the west demanded more water. DMWW, WDMWW, Urbandale Water Utility spear headed an agreement to construct a feeder main and the Louise P. Moon Booster Station located at 156<sup>th</sup> and north of Hickman to deliver water west. WDMWW invested \$2.9 Million.
- 1993 - Construction of the Maffitt Water Treatment Plant to improve reliability and redundancy. WDMWW invested \$5 million to gain 5.0 MGD Purchase capacity.
- 2005 - Purchase capacity agreement (the agreement currently in use). WDMWW purchased additional 2.0 MGD for \$3.8 million through 2045 to reduce rates with purchased capacity
- 2006 - 98<sup>th</sup> Street Tower shared by Clive, WDMWW, and Waukee, benefitted DMWW in delivery of water.
- 2015 - WDMWW, City of West Des Moines, and DMWW construct the Army Post Aquifer Storage and Recovery Well (ASR)
- 2020 - Joint Feeder main and booster station
- 2022 - Throttling valve to support the two new data centers.

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Central Iowa Regional Drinking Water Commission formed through a 28E back in early 2000s conducted a study by Black & Veatch to look at Regional Governance Feasibility.

FCS was hired DMWW, Urbandale, and WDMWW to help facilitate discussion; WDMWW pursued options for source water for a west plant.

2014

2015

2017

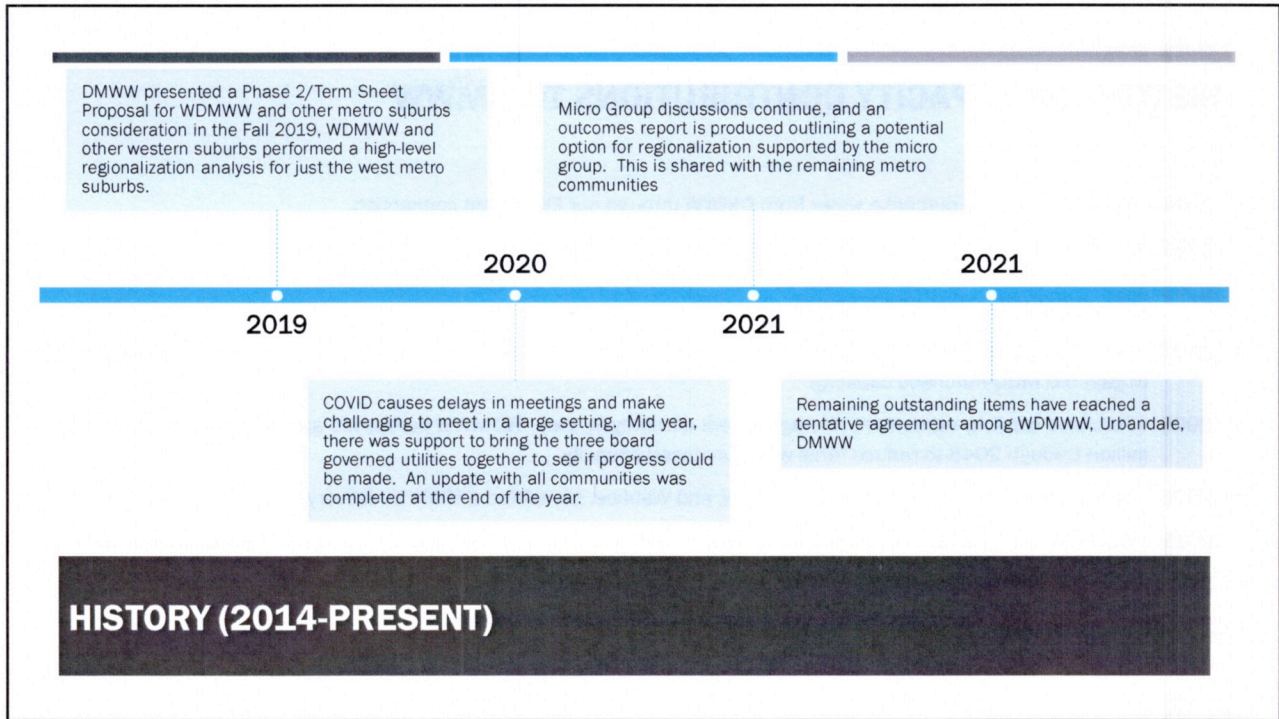
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Financial and Technical Advisory Subcommittees were formed to look at more specific discussions regarding regionalization

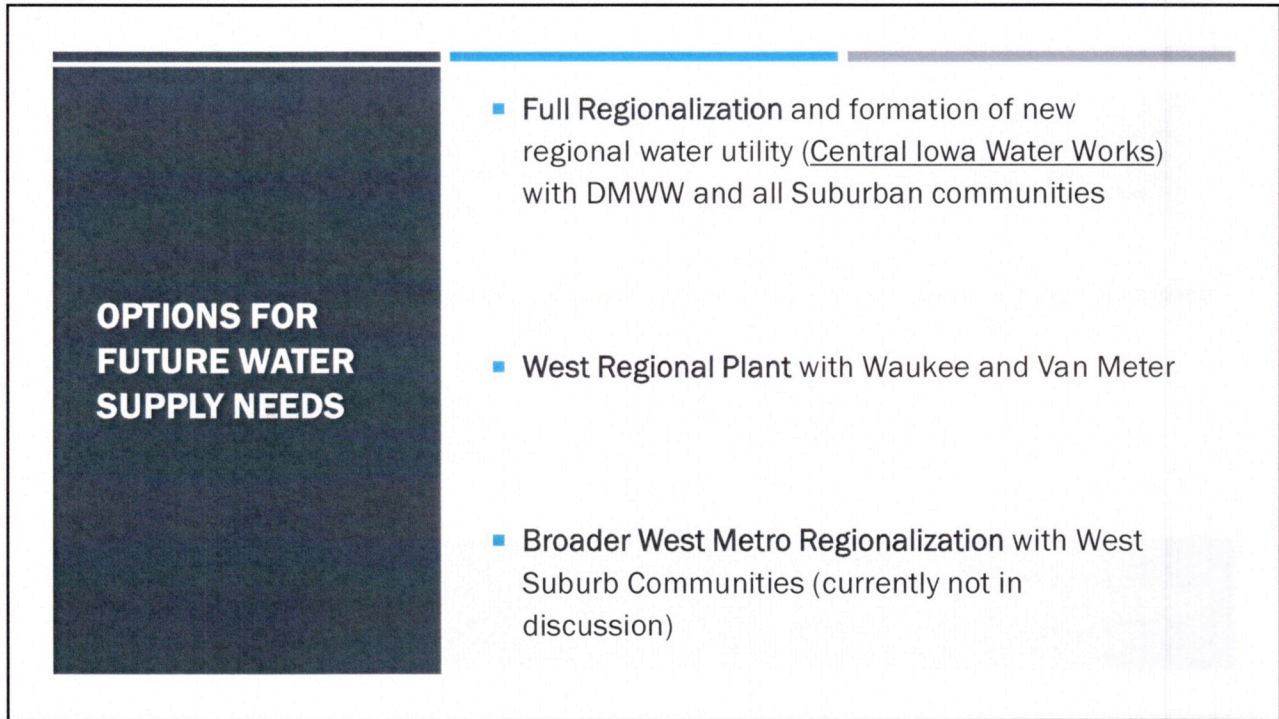
After legislative pressures, DMWW presented an initial proposal for regionalization, discussions stalled, and consensus was not reached.

## HISTORY (2014-PRESENT)

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## OPTION 1 – FULL REGIONALIZATION

### What Does Regionalization mean?

- Shared production of all drinking water
  - For WDMWW -21 wells, raw water transmission main, and A.C. Ward treatment plant
  - Also includes DMWW source water and three treatment plants
  - Could include Grimes and Altoona water production if they join
- Includes core network transmission (large feeder mains, shared pumping stations such as LP Moon)
- Participating members will still own and maintain responsibility for their own distribution systems and set rates for their own customers.



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## REGIONALIZATION – KEY POINTS

### Shared Governance –

- Currently West Des Moines Water Works has no say or full knowledge in the decisions of Des Moines Water Works
- DMWW accounts for 30% of our water supply, and under contractual agreement, will continue to provide a significant share until 2045. Under a regionalized water production approach, all our water will come from CIWW.
- Governing board members will each have one vote, DMWW will receive 2 votes since they represent a population greater than 100,000 people.
- Representatives from any two members of the new regional utility can call for a weighted vote, which is based on a community's water consumption. In a weighted vote, WDMWW currently has 14% of the total vote. Under the weighted vote structure, Des Moines Water Works, with about 39% of the total vote, cannot achieve a majority vote on its own.

### Asset Transfer –

- WDMWW and DMWW Water Works source water, treatments plants and core main/pumping infrastructure will become assets of the regional utility within 5 years.
- Depreciation schedules will be reconciled
- Method to handle existing debt (SRF or Private)
- Credit for existing purchased capacity
- All communities buy in or buy out based on assets contributed

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## OPTION 1 – REGIONALIZATION (CONTINUED)

### Those Benefited Pay for Benefit – (how growth will be handled)

- 91% of the system's expansion costs will be paid for only by those entities needing additional system capacity.
- 9% of the system's expansion costs will be shared by all, whether the entity is growing or not, to support reliability and redundancy.
- **Example 1:** if Saylorville Water Plant expanded in the future under a regional model and even though WDMWW does not get water from Saylorville, it will still be responsible for its proportion of 9% of the costs whether it needed more water or not.
- **Example 2:** if McMullin or AC Ward were expanded to accommodate West Des Moines growth, all communities would contribute to that 9%. Those communities needing additional water would be responsible for their proportion of the 91% costs of the system expansion.

### Approval process

- All capital and maintenance projects for all source, treatment and core mains/pumping will be planned and approved at the regional level following work through technical committees with input from individual members.

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## REGIONALIZATION – KEY POINTS (CONTINUED)



### 3<sup>rd</sup> Party Fiduciary –

Allows for transparency and confidence in allocation of costs



### Peaking Rates

Regional Board will evaluate if a peaking goal makes sense for the region



### Operating Contract –

DMWW & WDMWW would continue to operate their own plants under contract for the first 20 years.



### Long Range Planning–

A new long-range plan within one year of commencement to consider all participating members needs

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## OPTION 2 – WEST REGIONAL PLANT

- 8 MGD state-of-the-art Reverse Osmosis Plant near Van Meter using alluvial sources initially.
- Serve WDMWW, Van Meter and potentially Waukee as a wholesale customer.
- WDMWW would continue to purchase some water from DMWW, per contract, through 2045.
- After 2045, WDMWW would either continue to purchase some water from DMWW or produce 100 percent of its needs. The latter decision is not being made at this time.

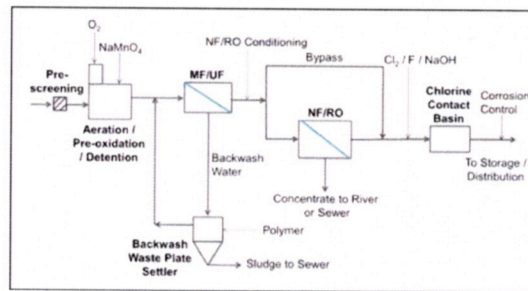


Figure 1.1.6: Membrane Treatment Alternative Process Schematic

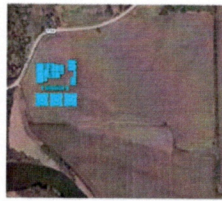


Figure 1.1.3: Membrane Treatment Plant Site Plan Concept, Scenario 1



Figure 5.3.3: Typical High Pressure Membrane System

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## WATER QUANTITY CONSIDERATIONS

- New Permit issued August 6, 2020
  - Allows for 12 MGD in source water in two alluvial well fields
  - Requires a reduction to 2.88 MGD when the Racoon River hits 114 cfs at 63<sup>rd</sup> Street
  - Requires a reduction to 0 MGD when the Racoon River hits 10 cfs at Fleur Drive, 63<sup>rd</sup> Street or Van Meter Gage and DMWW has implemented Stage 3 and has tried to use all other source water sources.
  - Required to have a backup supply plan. Submitted and approved by DNR in October 2021. WDMWW and Waukee will use Purchase Capacity/Waukee ASR and Van Meter will use ground storage and current wells to supplement.
  - Future water supply sources include quarries and Jordan wells which we would expect not to be subject to the same restrictions.

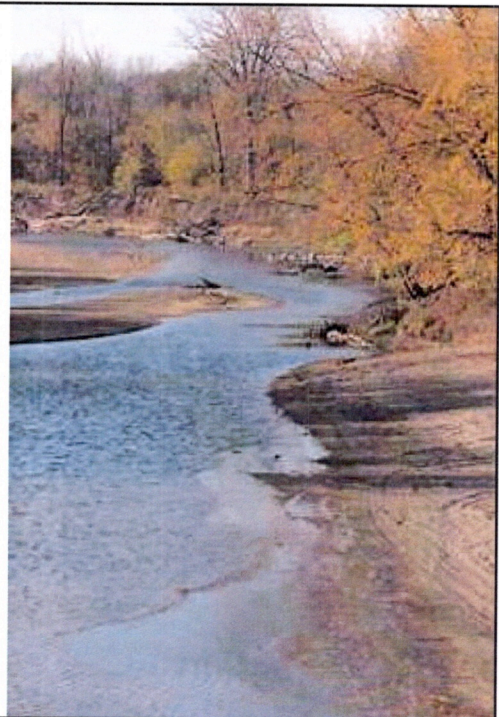
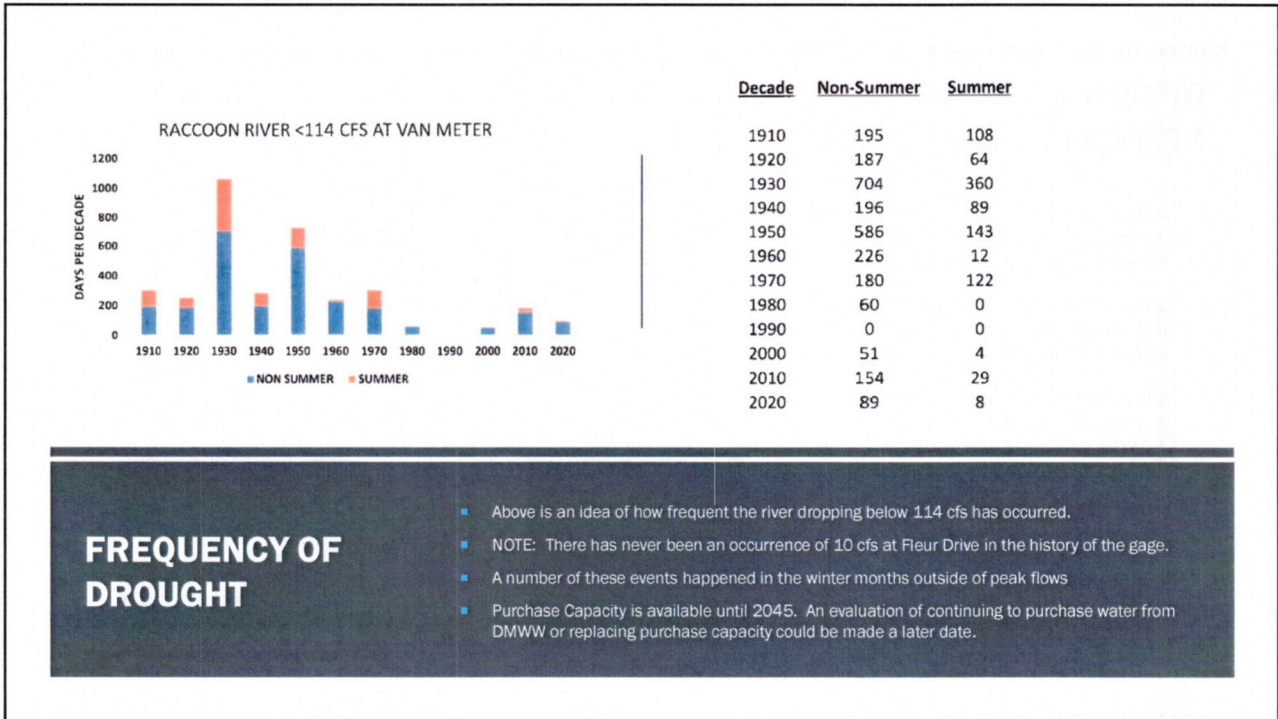


Photo Courtesy of DMWW

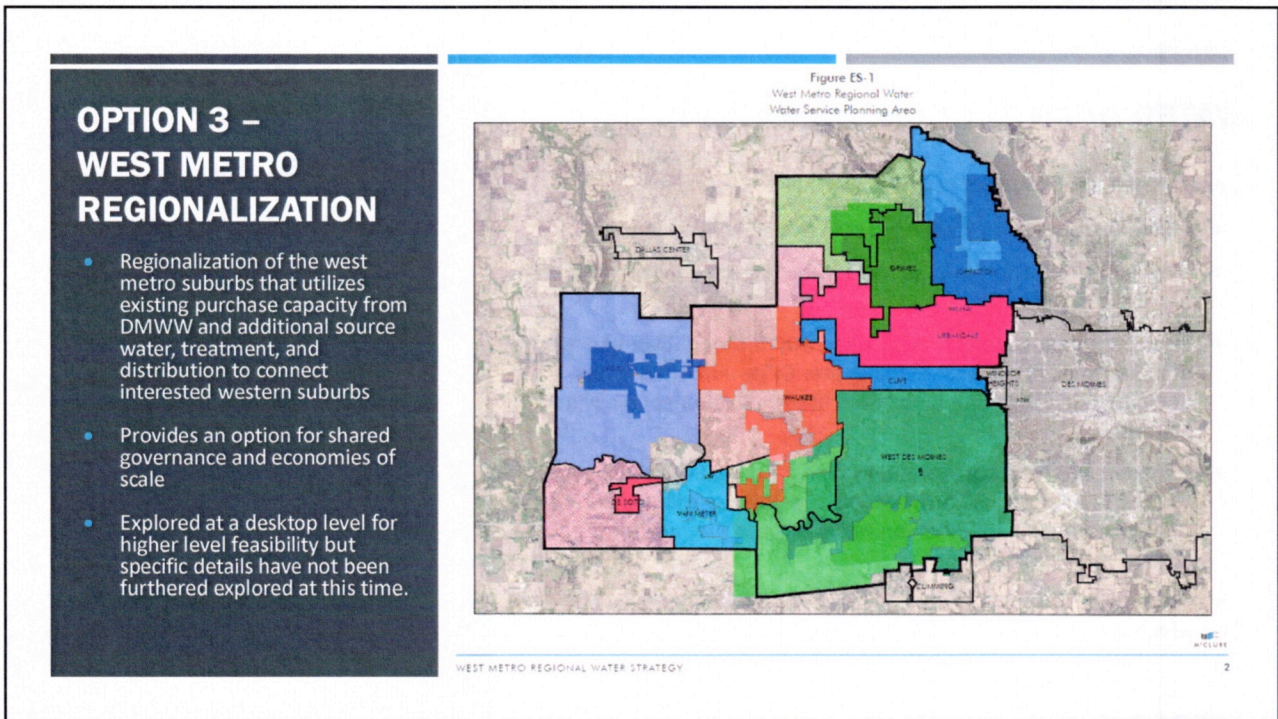
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**FREQUENCY OF DROUGHT**

- Above is an idea of how frequent the river dropping below 114 cfs has occurred.
- NOTE: There has never been an occurrence of 10 cfs at Fleur Drive in the history of the gage.
- A number of these events happened in the winter months outside of peak flows
- Purchase Capacity is available until 2045. An evaluation of continuing to purchase water from DMWW or replacing purchase capacity could be made a later date.





## NON-FINANCIAL CONSIDERATIONS

### REGIONALIZATION

#### PROS

- *Economies of scale*
- *Larger voice on source water/treatment concerns and other issues*
- *Shared resources/redundancies in emergencies*
- *More input over costs than in current DMWW contract.*
- *History of successful regionalization efforts (WRA, DART, MPO, West Comm, Metro Waste)*

#### CONS

- *A few cities could control the direction and decisions especially initially – will that include WDMWW at 14% of the flow?*
- *Possible future peaking charges/rate structure changes that could have unforeseen financial impacts*
- *Employee equity perception among the different treatment plant employees....e.g. Does one employee under one plant get more/less benefits or pay than the others.*
- *Challenging to divide costs fairly to the region, more staff/resources*
- *Will AC Ward get regional support for necessary infrastructure upgrades*

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## NON-FINANCIAL CONSIDERATIONS

### WEST REGIONAL PLANT

#### PROS

- *In the driver's seat of water needs timing for WDMWW*
- *Don't have to worry that WDMWW's needs will be secondary*
- *Membrane plant has the capability to address source water quality concerns (Nitrate, Microcystins, PFOS/PFAS)*
- *Improved taste and perception to some of our customers*
- *More control over costs*
- *Grow the utility in a manner that is strategic and cooperates with other entities*

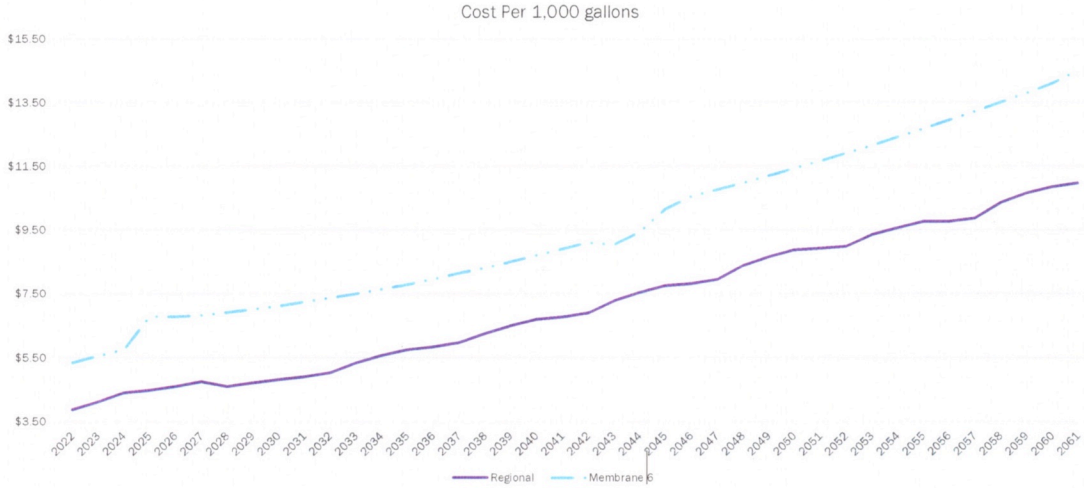
#### CONS

- *Will we have source water quantity issues beyond 2050/2060 and in times of extreme drought?*
- *Could require WDMWW to ask for conservation or do more to drive down peak in the summer especially during extreme droughts*
- *Could be seen as uncooperative in the metro*
- *Cannot separate from purchasing water from DMWW at least through 2045 or until other costly infrastructure improvements are made*

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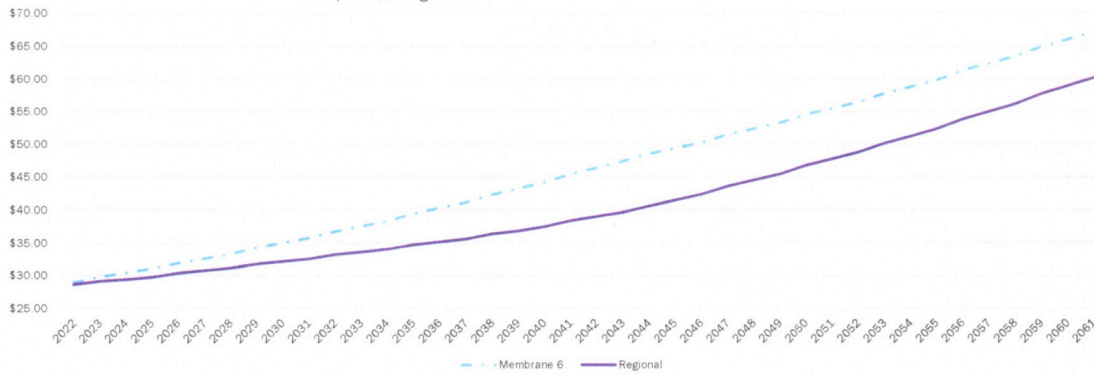
# FINANCIAL CONSIDERATIONS



Note: This is a cost comparison between the two scenarios, not a rate that encompasses all costs.

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# Cost per 4,000 gallons



Note: This is a cost comparison between the two scenarios, not a rate that encompasses all costs.

# AVERAGE HOUSEHOLD (4,000 GALLONS)

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## COST COMPARISON

- Modeling indicates that WDMWW rate payers should expect average of 30% savings over the course of 40 years by choosing regionalization over building a west regional plant.

### Cost Comparison

	2025		2030		2035		2040	
	Membrane 6	Regionalization	Membrane 6	Regionalization	Membrane 6	Regionalization	Membrane 6	Regionalization
Average WDM Household 4,000 Gallons	\$6.79	\$4.49	\$7.12	\$4.82	\$7.80	\$5.76	\$8.71	\$6.69
Restaurant - Small Commercial 46,000 gallons	\$27.16	\$17.96	\$28.48	\$19.28	\$31.20	\$23.04	\$34.84	\$26.76
Large User Commercial 8,658,825 gallons	\$312.34	\$206.54	\$327.52	\$221.72	\$358.80	\$264.96	\$400.66	\$307.74
Large User Commercial 8,658,825 gallons	\$58,794.61	\$38,878.91	\$61,652.08	\$41,736.38	\$67,540.20	\$49,875.84	\$75,419.89	\$57,928.71

	2045		2050		2055		2060	
	Membrane 6	Regionalization	Membrane 6	Regionalization	Membrane 6	Regionalization	Membrane 6	Regionalization
Average WDM Household 4,000 Gallons	\$10.16	\$7.74	\$11.44	\$8.92	\$12.68	\$9.76	\$14.11	\$10.85
Restaurant - Small Commercial 46,000 gallons	\$40.64	\$30.96	\$45.76	\$35.68	\$50.72	\$39.04	\$56.44	\$43.40
Large User Commercial 8,658,825 gallons	\$467.36	\$356.04	\$526.24	\$410.32	\$583.28	\$448.96	\$649.06	\$499.10
Large User Commercial 8,658,825 gallons	\$87,975.44	\$67,020.66	\$99,058.96	\$77,238.28	\$109,796.12	\$84,511.84	\$122,178.49	\$93,950.15

\* This is not reflect an actual rate to customers just a cost comparison for the same relative costs for water production and core transmission infrastructure included in both models  
\*\* This assumes no change in rate structure fom DMWW for water still purchased as part of the Membrane 6 option





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SUMMARY OF OTHER CONSIDERATIONS		
	REGIONALIZATION	WEST REGIONAL PLANT
<b>Availability</b>	<ul style="list-style-type: none"> <li>Uncertain of the timing of necessary improvements to provide water further west (i.e., not currently in 5-year CIP for DMWW)</li> <li>Could impact economic development if treatment capacity, transmission, or pumping is delayed because of competing needs in other cities.</li> <li>Long term (i.e., beyond 2055) water availability is more certain</li> </ul>	<ul style="list-style-type: none"> <li>WDMWW in the driver's seat of timing of necessary improvements.</li> <li>Long term source water needs beyond 2055 would need further evaluation and study. Availability uncertain.</li> <li>Water Use Permit in place and ready to begin design, DMWW still in study phase. Treatment transmission &amp; pumping concerns all addressed in the near term.</li> </ul>
<b>Quality</b>	<ul style="list-style-type: none"> <li>Planning to expand a Des Moines River wellfield should help improve source water quality to Fleur Dr. plant in 4-5 years. Will not address future contaminants such as PFAS/PFOS but impact unknown at this time.</li> <li>No current plans for McMullen plant but no urgent water quality issues</li> </ul>	<ul style="list-style-type: none"> <li>New membrane plant will address source water quality concerns for about 3/4 of our rate payers (includes AC Ward). AC Ward has no current issues.</li> <li>Improved taste and aesthetics for those on new plant <u>only (~1/4 of our customers)</u>.</li> <li>AC Ward or customers that get DMWW water quality will remain unchanged.</li> </ul>
<b>Cost</b>	<ul style="list-style-type: none"> <li>If modeling and assumptions are correct, could be up to a 30% savings to WDMWW ratepayers over the next 40 years.</li> <li>WDMWW will have input on all production/core main costs through regional governance.</li> <li>WDMWW will require regional board approval for improvements to AC Ward.</li> </ul>	<ul style="list-style-type: none"> <li>If modeling and assumptions are correct, could be up to 30% higher total cost over the course of 40 years.</li> <li>With continued successful local control, everything can be done to manage those additional costs.</li> <li>WDMWW will not require regional board approval for improvements to AC Ward.</li> </ul>

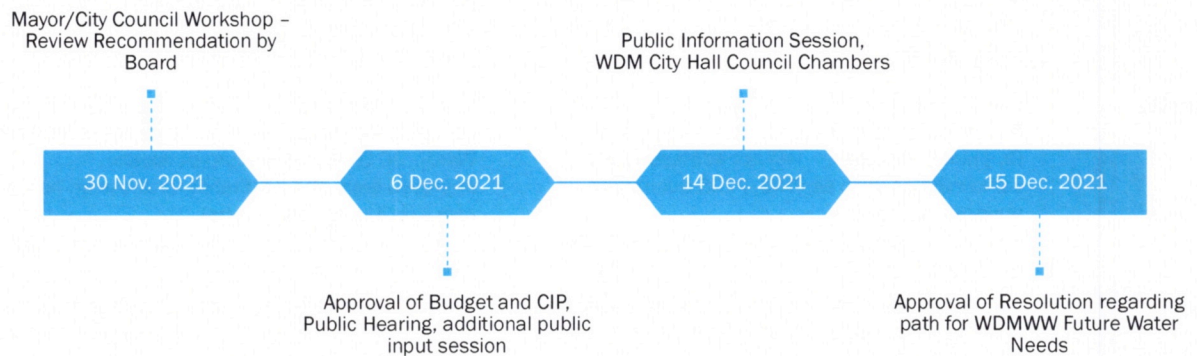
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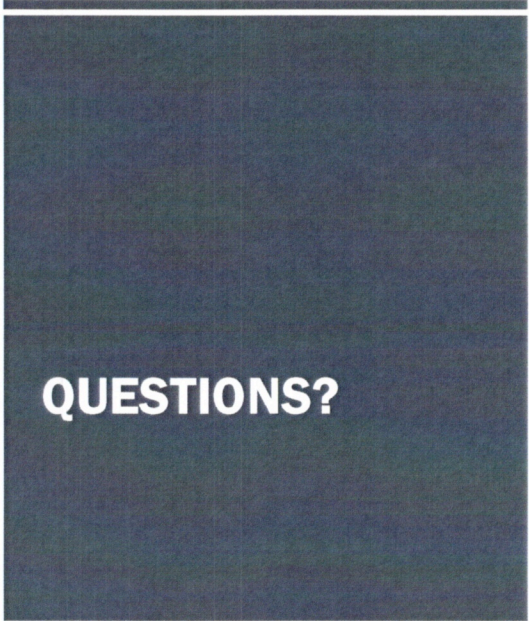
## PATH FORWARD

-  WDMWW went back to DMWW with some additional points to address some of our non-financial concerns. They have agreed to these in principle. Language has been finalized.
-  Public Input: December 6, 2021 at 4:00 pm at 1505 Railroad Ave and December 14, 2021, at 5:30 pm in the City Council Chambers. Information regarding the decision will be posted to the water works website and shared out via several media methods
-  December 15, 2021 – WDMWW Board of Trustees will sign a resolution committing to a path forward.
-  Should WDMWW approve a regionalization path, there are several milestones outlined in the next year to stand a regional water utility up by January 1, 2023.

## TIMELINE FOR WEST DES MOINES WATER WORKS BOARD







**QUESTIONS?**



For more information:  
[www.wdmww.com/ciww](http://www.wdmww.com/ciww)



