

**MEMORANDUM**

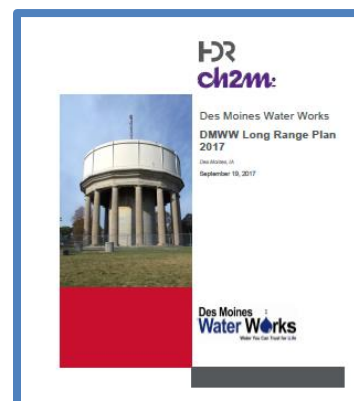
**DATE:** June 6, 2023  
**TO:** Ted Corrigan, P.E., CEO and General Manager  
**FROM:** Amy Kahler, Chief Financial Officer  
Michael J. McCurnin, Director of Engineering Services  
**SUBJECT:** 2024-2028 Five-Year Capital Improvement Plan

**Background**

Capital improvement planning was first introduced to our budgeting process in 2015 with the development of a 3-year Capital Improvement Plan (CIP). Over the course of the last several years, the planning has been expanded to a five-year window. The 2024-2028 Five-Year CIP is presented via this memorandum and identifies almost \$400 million in viable overall capital spending. Much like the 2023-2027 Five-Year CIP, this CIP continues to advocate for the same key themes and projects present in previous CIP efforts including treatment plant expansion, aquifer storage and recovery (ASR), water quality projects, water main replacement projects, and other reinvestments in the broad system. It is projected to use water rates to fund \$140 million of the total while using a combination of regional participation, debt, and funding by others for the remaining \$260 million.

The CIP is typically presented to the Board in the first half of each year. Staff begins the process with a comprehensive list of projects (mostly from long-range planning efforts, preliminary engineering reports, or other special studies or investigations). Staff trims this initial list and then positions project costs across the five-year window. The annual budgeting process is closely linked to this effort and follows in the latter half of the year.

Throughout its history, Des Moines Water Works (DMWW) has completed a variety of long-range planning documents to provide guidance for treatment, distribution, and other utility needs. Most recently, DMWW consulted with consultants CH2M and HDR to complete the DMWW Long Range Plan 2017. The DMWW Long Range Plan 2017 stands to serve as a guidepost for the next several years.



The work for this planning document was broad and intensive. It included:

- Population and water demand until 2040 for the metro area (wholesale customers participated in this effort)
- Standards of service for the entire system
- Hydraulic modeling of both Des Moines and regional distribution systems
- More than \$625 million in project costs (2016 dollars) for source, treatment, pumping, storage, and transmission improvements until 2040
- A water main replacement model with main break targets (breaks per 100 miles of pipe) through 2040 for the Des Moines water distribution systems

All departments participate in the CIP process by identifying the capital needs within their respective areas. The components of the CIP completed by the Engineering Services Department is more comprehensive because projects range from the “unsafe to consume” source water all the way through the process of delivering “safe to consume” finished water at customers’ taps.

### **Key 2021 and 2022 Efforts Impacting 2024-2028 Five-Year CIP**

DMWW consulted with HDR in the first quarter of 2021 to complete a DMWW Long Range Plan Update and Progress Report. An element of this effort was to determine if the timing of key projects included in the original plan could be delayed by evaluating recent average-day and peak-day customer demands. HDR collected five more years of operational data from metro area water producers and included new water demands that were unknown at the time of the original long-range plan. Based upon the data and related analysis, the report concluded that these projects should not be delayed, and in fact, consideration should be given to expediting or altering the order of the “expansion” projects.

In 2022, an HDR and Black & Veatch consulting team completed a preliminary engineering report for both a 10 million gallon per day (MGD) expansion and a 25 MGD expansion at the Saylorville Water Treatment Plant (SWTP). This extensive effort included necessary interactions and iterations with stakeholders to define critical design parameters for each plant expansion. Additionally, the report included revised and updated opinions of probable cost to be integrated into the CIP for these key projects. Staff and Board, in concert with HDR and Black and Veatch, shared report contents with regional parties in 2022. Regional support was garnered in 2022 to advance with a 10 MGD expansion at SWTP. Design work, via agreement with an HDR and Black & Veatch team, has begun on the 10 MGD expansion in 2023 and this CIP contains both the ongoing design and the necessary construction contracts that will ultimately be needed for the 10 MGD expansion.

### **2024-2028 Five-Year CIP**

The 2024-2028 Five-Year CIP continues to embrace many of the themes presented in the most recent five-year CIP, but there are also a few adjustments. A summary of this CIP is as follows:

- A number of previously-identified projects (storage tank aeration, etc.) to counter disinfection byproduct (DBP) concerns continue to be left off the plan.
- A number of previously-identified projects (park wetland, ion exchange system expansion, etc.) to counter nitrate concentration issues continue to be left off the plan.
- In place of the DBP and nitrate projects, staff continues to feel strongly that garnering more source water from the Des Moines River alluvium is most beneficial. Water from this source is not only beneficial for nitrate and DBP issues, but also provides benefits regarding ammonia, cyanobacteria, and cyanotoxin issues which have created significant

operational challenges in recent years. Blending of source waters remains one of the most powerful pre-treatment options at our disposal.

- While a clear focus on the Des Moines River alluvium remains prudent, this plan also inserts \$8 million in enhancements and improvements to Crystal Lake processes at the McMullen Water Treatment Plant (MWTP). This project was not part of the most recent CIP.
- The window of this CIP continues to recommend completing all remaining elements of a 10 MGD expansion of the SWTP. The entire expansion involves source, treatment, and transmission projects totaling near \$159 million.
- In addition to the 10 MGD expansion, this CIP introduces the preliminary engineering, design, and initial construction elements associated with a 25 MGD expansion in the metropolitan area.
- The integration of a DMWW ASR site remains in the CIP to assist with addressing peak-day demands. Regional coordination is occurring as Ankeny, Waukee, West Des Moines, and DMWW are actively pursuing ASR sites. Regional coordination of plant expansion facilities and ASR facilities will be important for the region to collectively provide production volumes to meet peak-day demands in the next several years.
- This CIP continues to recommend aggressive reinvestment in water main replacement. Long-range planning documents from 2017 communicated that DMWW needed to nearly triple its historical reinvestment levels to maintain or slightly improve main break statistics. Escalations beyond that level were also recommended to allow for a target annual break rate of 20 main breaks per 100 miles of piping by 2040. DMWW, within the past few years, has begun to invest more in water main replacement to move toward the report recommendations. This CIP continues to reaffirm the importance of remaining vigilant with our distribution system reinvestment by calling for approximately \$15 million per year in projects across the five-year window.
- A study completed in 2022 by CDM Smith recommends rehabilitation of the filter plant at the Fleur Drive Water Treatment Plant. Nearly \$14 million has been included in this CIP to address several of the recommendations from that study. Other recommendations in the report will need to be included in future CIP.

A comprehensive listing of all the projects included in the 2024-2028 Five-Year CIP has been included in an attachment to this memorandum.

Managing the design, construction, and commissioning of these projects is clearly a tall order. Success will not be possible without outside assistance and likely the creative use of outside assistance. Acquiring more services for both design and construction efforts is an easily identifiable option, but other creative measures will also be necessary to achieve success within the five-year window.

### **Funding**

DMWW has several funding options for the utility's projected CIP commitments. For purposes of projecting financial viability of the five-year CIP totaling nearly \$400 million, staff has developed a funding plan consisting of a combination of regional participation, water rate revenues, and debt. These funding sources are discussed in more detail below.

### ***Regional Participation***

The 10 MGD expansion of the SWTP, along with its related source, treatment, and transmission projects, is included in the five-year CIP. Additionally, some planning and design costs for the subsequent 25 MGD expansion (location to be determined) are included in the latter years of the five-year window. Total expansion costs in the 2024-2028 CIP are approximately \$176 million. These costs are anticipated to be recovered largely through regional participation. If regionalization discussions are finalized and Central Iowa Water Works (CIWW) is formed, these expansion-related costs would be allocated as outlined in the draft 28E agreement, or 9% allocated to all participants based on each community's proportional capacity in CIWW and 91% allocated based on each community's proportional and incremental growth needs. Under a regional scenario as currently outlined in the draft 28E agreement, DMWW would be responsible for approximately \$19 million of expansion costs over the next five years, and other regional participants would pay the remaining \$157 million. The annual debt service on DMWW's share of the expansion costs, assuming a 20-year SRF loan at a 2% borrowing rate, would be about \$1.2 million.

If CIWW does not come to fruition, staff recommends that purchased capacity be sold for the 10 MGD of additional capacity constructed. In either case, with or without formal regionalization, the funding model for the 2024-2028 CIP assumes expansion costs are primarily borne by regional participants, which helps ensure Des Moines customers are not later saddled with the burdensome costs of a stranded treatment expansion.

Additionally, there is \$11.5 million participation in joint projects, such as the construction or improvement of various booster stations, that will be funded by other communities over the five-year period.

### ***Water Rate Revenues***

The utility's primary source for funding capital improvements is water rate revenues. In the 2024- 2028 CIP, staff has programmed \$26 million in capital expenditures to be recovered through water rates in 2024, and then increased water rate revenue for capital spending by an additional \$1 million each year, ending with \$30 million in 2028. Under these assumptions, water rate revenue accounts for a total of \$140 million over the five-year period. This level of annual capital spending is comparable to budgeted capital costs recovered through rates in recent years, adjusted for typical inflation of 3-4%.

### ***Debt***

The remaining funding lever is debt. Any capital needs remaining after regional participation (i.e., expansion-related projects) and a level of recovery through water rates ranging from \$26 million to \$30 million annually as discussed above, are proposed to be financed through the State Revolving Fund (SRF) loan program. This results in an average of about \$18.3 million of debt issued per year, or a cumulative projected debt load of \$91.3 million by 2028. At this highest level of debt projected, the annual debt service would be approximately \$5.2 million. As DMWW is currently debt-free, this amount of projected debt is within DMWW's debt capacity.

Historically, DMWW has been conservative in issuing debt. For the most part, DMWW has set water rates at a level that enables the utility to fund capital expenditures on a "pay as you go" basis. That works well for smaller projects and single-year projects, but not necessarily for large-scale projects that require a large amount of cash available up front. Assuming favorable

interest rates, which do, in fact, exist with the SRF program, borrowing is the best way to accommodate the necessary cash flow for large-scale projects. While annual debt service must be recovered through water rates, the benefit of debt is that expenditures can be recovered over a longer period of time, lessening the impact on rates in a single year. Additionally, to the extent that borrowed funds are invested in significant infrastructure projects that improve the long-term productivity of the water system, future generations benefit from those improvements; therefore, the use of debt creates intergenerational equity by better matching the cost of improvements to the customers who benefit from the improvements.

Although DMWW has favored water revenue bonds over SRF borrowings in the past, SRF is preferred to water revenue bonds in this five-year period due to the flexibility and potential for refinancing if and when production-related assets transfer to CIWW. Projects eligible for SRF funding include construction of new facilities, improvements or rehabilitations to existing and/or aging water facilities, water storage facilities, and wells. Specific qualifying projects most appropriate for funding through the SRF program will be identified and prioritized for financing during each annual budget process during the five-year CIP period.

A summary of the cumulative effect of debt financing is shown below:

<b>FINANCING</b>	<b><u>2024</u></b>	<b><u>2025</u></b>	<b><u>2026</u></b>	<b><u>2027</u></b>	<b><u>2028</u></b>
Amount Financed By Year	\$ 12,127,019	\$ 20,948,326	\$ 27,563,436	\$ 21,206,200	\$ 9,476,426
Cumulative Financed	12,127,019	33,075,345	60,638,781	81,844,980	91,321,406
Principal	\$ -	\$ 335,956	\$ 875,494	\$ 1,711,164	\$ 2,528,455
Interest	\$ 422,955	\$ 1,041,931	\$ 1,993,589	\$ 2,519,417	\$ 2,621,890
Total Debt Pmt	\$ 422,955	\$ 1,377,887	\$ 2,869,083	\$ 4,230,581	\$ 5,150,345

### ***Impact to Rates***

Finance staff has taken the recommended CIP funding program discussed above and modeled the rate increases necessary to support this level of capital spending. At the recommended spending levels and funding sources outlined, retail water rates would need to increase 9 – 10% each year to support capital spending. Wholesale water rates would see increases ranging from 3- 7%.

The CIP is an important planning and management tool; however, it is important to note the utility adopts spending and revenue projections and sets water rates each year during the annual budget cycle. The CIP and the funding plan as presented here do not commit the utility to the level of capital spending outlined, nor does it commit the utility to the stated level of projected water rate increases. Depending on the outcome of the retail rate affordability study underway and other economic or operational considerations, it may be necessary to adjust and/or prioritize capital spending in the five-year planning period to lessen the impact on retail water rates and operations.

The tables below summarize the capital spending by year and category, along with the projected funding sources:

	CAPITAL DOLLARS					
	2024	2025	2026	2027	2028	5-YEAR
Customer Service - Meters, MTUs	\$ 1,845,485	\$ 2,069,152	\$ 2,040,994	\$ 2,170,222	\$ 2,307,271	\$ 10,433,124
Information Technology	728,000	578,000	628,000	528,000	428,000	\$ 2,890,000
OCCO (Grounds)	125,000	125,000	125,000	-	-	\$ 375,000
Water Distribution	1,576,725	1,562,241	1,609,115	1,657,389	1,706,279	\$ 8,111,749
Water Production						
Vehicle & Equipment Replacement	1,190,000	1,250,000	1,320,000	550,000	580,000	\$ 4,890,000
Normal WP Replacement	1,200,000	1,240,000	1,280,000	1,320,000	1,360,000	\$ 6,400,000
<b>DEPARTMENTS w/o Engineering</b>	<b>\$ 6,665,210</b>	<b>\$ 6,824,393</b>	<b>\$ 7,003,109</b>	<b>\$ 6,225,611</b>	<b>\$ 6,381,550</b>	<b>\$ 33,099,873</b>
Engineering						
Plant/Raw Water Capacity	9,933,121	27,721,546	47,052,213	54,588,731	33,149,850	172,445,461
Transmission Capacity	7,874,920	2,913,137	-	-	-	10,788,057
Water Quality	-	6,195,750	15,187,582	12,205,601	-	33,588,934
Water Main Replacement	15,746,443	15,194,526	15,387,873	15,204,416	16,483,874	78,017,132
Core Network	6,761,534	9,042,041	8,893,783	9,949,186	12,326,311	46,972,856
DMWW Capital	4,505,665	3,505,378	1,341,279	616,625	638,207	10,607,154
Work for Other Entities	-	7,011,698	7,257,108	-	-	14,268,806
<b>TOTAL ENGINEERING</b>	<b>44,821,683</b>	<b>71,584,077</b>	<b>95,119,837</b>	<b>92,564,559</b>	<b>62,598,242</b>	<b>\$ 366,688,399</b>
<b>TOTAL UTILITY CIP</b>	<b>\$ 51,486,894</b>	<b>\$ 78,408,470</b>	<b>\$ 102,122,946</b>	<b>\$ 98,790,170</b>	<b>\$ 68,979,792</b>	<b>\$ 399,788,272</b>

	TOTAL UTILITY CIP BY FUNDING SOURCE					
	2024	2025	2026	2027	2028	5-YEAR
Funded by Rates	\$ 26,000,000	\$ 27,000,000	\$ 28,000,000	\$ 29,000,000	\$ 30,000,000	\$ 140,000,000
Funded by Other Entities (Cash)	45,009	5,818,267	5,587,973	-	-	11,451,249
DMWW Debt	10,481,362	17,902,700	22,499,538	15,201,439	5,829,942	91,321,406
Regional Participation	14,960,523	27,687,502	46,035,435	54,588,731	33,149,850	157,015,617
<b>TOTAL by FUNDING SOURCE</b>	<b>\$ 51,486,894</b>	<b>\$ 78,408,470</b>	<b>\$ 102,122,946</b>	<b>\$ 98,790,170</b>	<b>\$ 68,979,792</b>	<b>\$ 399,788,272</b>

The “DMWW Debt” line item in the chart above includes \$19.4 million for DMWW’s estimated share of the source, treatment, and transmission expansion projects.

### ***Impact of Regionalization***

The financial implications of the CIP as presented is a conservative plan, or “worst case scenario.” The region is in a transitory period between status quo and the potential formation of CIWW, which creates some complexities in preparing a five-year CIP and recommending a funding plan. As a CIWW 28E has not yet been executed, the capital funding program as presented above does not include certain regionalization considerations that may in fact occur, such as an estimated payment of approximately \$50 million DMWW could receive in an asset true-up transaction. If regionalization were to occur, this anticipated \$50 million would be an additional funding stream available for capital projects benefiting Des Moines customers, such as replacing aged water mains.

Another change to funding assumptions under a regional CIWW model is that DMWW would not be responsible for financing production-related capital improvements; rather, the funding for these improvements would become the responsibility of CIWW and DMWW would pay only a proportionate share of the costs in cash or assume a proportionate share of the debt. Rather than being responsible for funding 100% of the costs upfront and recovering costs through the capital component of water rates as the utility does today, DMWW’s upfront financial obligation would be reduced to about 40%, thereby significantly reducing the amount of debt assumed (or cash paid) by DMWW.

## **Conclusion**

The 2024-2028 Five-Year CIP as outlined above is a projection of needs and resources to assist the utility in its capital planning efforts. Staff believes the plan, as presented, is an aggressive plan that allows the utility to continue to serve as responsible stewards of the system, provides a high level of service to customers, and enables the utility to meet growing water demands in the region. This plan will be adjusted as necessary through the annual budget process over the five-year period as regionalization outcomes and annual capital and operational needs evolve.