



DES MOINES WATER WORKS  
Board of Water Works Trustees

Agenda Item No. III-A  
Meeting Date: March 26, 2019  
Chairperson's Signature  Yes  No

**AGENDA ITEM FORM**

**SUBJECT: Receive and File 2020-2024 Five-Year Capital Improvement Plan**

**SUMMARY:**

Finance and Engineering have worked cooperatively to establish a process for developing and maintaining a five-year capital improvement plan (CIP.) Capital improvement planning was first introduced to our budgeting process in 2015 with the development of a three-year Capital Improvement Plan (CIP). Over the course of the last four years, the planning has been expanded to a five-year window. Previous CIPs have included the current approved capital budget as the beginning year. After the 2018-2022 effort, we decided future CIPs would not include the current capital budget and instead would be a true forward looking CIP. The 2020-2024 CIP is the first CIP to include only future years.

The 2020-2024 five-year CIP was reviewed with the Finance and Audit Committee at their March meeting.

**FISCAL IMPACT:**

None at this time. Information from this five-year capital improvement plan will be used to develop capital budgets that will be presented to the Board for action in future years.

**RECOMMENDED ACTION:**

Receive and file the 2020-2024 Five-Year Capital Improvement Plan.

**BOARD REQUIRED ACTION:**

Motion to receive and file the 2020-2024 Five-Year Capital Improvement Plan.

 Peggy Freese, CPA Chief Financial Officer 3/19/19 _____ (date)	_____ (date)	 William G. Stowe CEO and General Manager 3-21-19 _____ (date)
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Attachments: Memo and attachment

**MEMORANDUM**

DATE: March 18, 2019

TO: William Stowe, CEO and General Manager

FROM: Peggy Freese, Chief Financial Officer  
Michael J. McCurnin, Engineering Services Manager

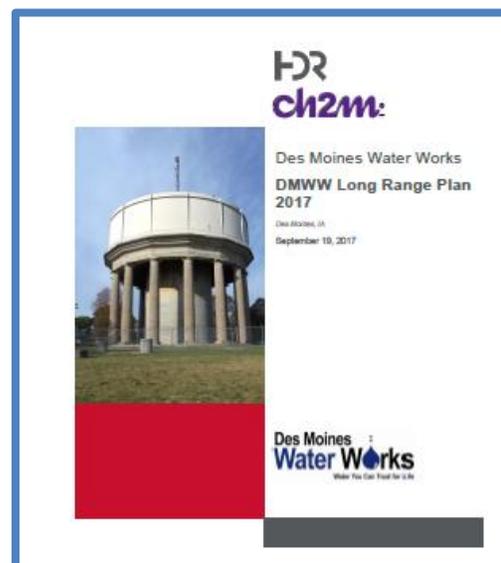
SUBJECT: 2020-2024 Five-Year Capital Improvement Plan

**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 four years, the planning has been expanded to a 5-year window. Previous CIPs have included the current approved capital budget as the beginning year. After the 2018-2022 effort, a conscious decision was made to not include an approved budget year in subsequent 5-Year CIP efforts. The 2020-2024 CIP represents our first effort with this alteration. The 2020-2024 Five-Year CIP is presented via this memorandum and identifies over \$245M in viable capital spending which includes system expansion projects to provide for projected water demand in the metro area.

The CIP is typically presented to the Board in the first quarter of each year. A comprehensive list of projects (mostly from long range planning efforts) is identified and then staff positions the costs for those projects across the five-year time window. The annual budgeting process is closely linked to this effort and follows in the second and third quarters of the year. The budgeting process typically includes a further narrowing of the CIP list, for the next budget year, to align with available funding.

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 guide post for the next several years.



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

- Population and water demands until 2040 for the metro area
- Standards of service for the entire system
- Hydraulic modeling of both Des Moines and regional distribution systems
- Improvements for source, treatment, pumping, storage, and transmission until 2040 totaling more than \$625M in project costs (2016 dollars)
- 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.

### **2020-2024 CIP**

A condensed version of the 2020-2024 5-Year CIP is attached to this memo. A more comprehensive listing was included in the Finance and Audit Committee materials, but due to size, it is not included in these Board materials.

The 2020-2024 CIP continues to embrace the most important themes presented in previous 5-Year CIPs and also includes the full 10 MGD upgrade at the Saylorville Water Treatment Plant (SWTP). A summary is as follows:

- A number of previously identified projects (storage tank aeration, etc.) to counter disinfection byproduct (DBP) issues have been left out.
- A number of previously identified projects (park wetland, ion exchange system expansion, etc.) to counter nitrate concentration issues have been left out.
- In place of the DBP and nitrate projects, staff feels 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 it also provides benefits in regard to ammonia, cyanobacteria, and cyanotoxin issues which have also created significant operational challenges in recent years.
- This CIP, like the last, recommends integration of two additional aquifer storage and recovery (ASR) wells, one within the Des Moines distribution system and the second, funded by others, within a suburban customer’s distribution system.
- This CIP, like the last, recommends aggressive reinvestment in water main replacement. Efforts by HDR communicate that DMWW needs to nearly triple its historical reinvestment levels to maintain or slightly improve main break statistics. DMWW, within the past two years, has begun to follow the report recommendations. This CIP reaffirms the importance of remaining vigilant with our distribution system reinvestment.
- The 5-year window of the 2018-2022 CIP called for completing only a portion of the 10 MGD expansion at SWTP. The window of this CIP calls for completing the entire expansion to keep this treatment upgrade on schedule (per the DMWW Long Range Plan 2017).

A quick comparison of the two most recent CIP efforts is as follows:

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Totals</b>
<b>2018-2022</b>	\$17.3M	\$39.5M	\$41.6M	\$31.5M	\$56.5M	\$186M
<b>2020-2024</b>	\$43.3M	\$43.4M	\$35.0M	\$53.8M	\$70.6M	\$246M

As noted previously, the 2018-2022 CIP included the 2018 budget year and then four years of CIP projections and the 2020-2024 CIP includes five years of CIP only. The \$60M plus difference between these two CIP efforts is largely attributed to the 2018-2022 CIP including a budget year amongst its 5-year window and only a portion of the expenses related to expanding SWTP another 10 MGD. A variety of other projects were also made part of the 2020-2024 scope.

After a staff review of the 2020-2024 CIP effort, two items are of note. The integration of the ASR units into the overall system are behind the original schedule by nearly two years. Secondly, the typical budget year for DMWW includes near \$17M for capital projects from DMWW revenue. The annual average in the 2020-2024 CIP comes in just below \$50M per year. This is three times the funds typically available for a given budget year. This bold statement can and should be tempered. The CIP includes a variety of joint projects that include presumed coordinating and funding with other entities. However, for capacity increases such as the SWTP expansion, no funding offsets have been assumed. We could explore funding offsets as we have in the past. If funding offsets were provided for the SWTP expansion, the sum of the CIP reduces to near \$188M. The annual average of the CIP drops to near \$38M, which is more than double the funds typically available for a given budget year. Either approach yields a significant and weighty result.

Staff understands that funds are not unlimited, yet feel strongly we are falling behind in regard to proper reinvestment in the broader system. Tough decisions are in our future.

### **Funding**

As noted previously, our first source for funding capital improvements is our annual revenue. In the approved 2019 budget, \$17M of capital spending was funded by revenue. Assuming an annual increase in this amount, we might expect revenue funding to total \$110M over the 2020-2024 CIP. This leaves a significant funding gap and it will be necessary to look to other funding sources.

Historically, DMWW has been conservative in issuing debt. We set water rates at a level that enables us to fund capital expenditures on a “pay as you go” basis. That works well for smaller projects and single-year projects, but not for large-scale projects that require a large amount of cash available up front. Borrowing is the best way to accommodate the necessary cash flow. The downside of borrowing is that, even with favorable bond interest rates, we pay back much more than we borrow.

DMWW has the debt capacity to issue approximately \$110 million of water revenue bonds. After establishing a bond reserve fund and paying issuance costs, net proceeds available to spend will be around \$100 million. Total debt service payments over 20 years will be approximately \$145 million or \$7.25 million annually. The combination of \$110M of funding from revenue and \$100M of bond proceeds results in a \$36M gap from the \$246M included in this CIP which would need to be covered by additional rate increases.

At the current time, uncertainty surrounding Regionalization prevents us from issuing debt. DMWW will continue to exist if Regionalization occurs. However, it will change the nature of our business significantly. This uncertainty would impact our bond rating and ultimately the pool of prospective buyers of our bonds. More importantly, bond covenants normally contain a clause that pledges all assets of the issuer and prohibits the sale or transfer of those assets. Issuing bonds would prohibit DMWW from transferring assets to a regional entity until the bonds were paid off. Although there are provisions for paying off bonds early, it is usually prohibited in the first five years.

**Conclusion**

The delay of these capital improvements continues to increase the cost of future 5-year CIPs, hampering our ability to continue to provide the high level of service our customers have enjoyed and the ability to meet the increase demands of the suburbs.

Staff will begin work on the 2020 operating and capital budgets in June which the Board will approve in the fall. The CIP will provide the basis for the 2020 capital budget, with further refinement of the numbers occurring as we go through the budget development process. Alternative sources of funding these needs must be addressed in the 2020 budget process.

**Des Moines Water Works**  
**5 Year CIP**  
**2020-2024**

3/1/2019

	<b>2019 BGT</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>5 Year</b>
Customer Service - Meters, MTUs	\$ 1,469,975	\$ 1,423,114	\$ 1,495,597	\$ 1,571,778	\$ 1,650,367	\$ 1,732,885	\$ 7,873,739
Information Technology							
Normal Replacement	479,549	514,000	571,000	501,000	626,000	476,000	2,688,000
CRM	274,807	-	-	-	-	-	-
PeopleSoft	46,280	2,075,000	1,575,000	-	-	-	3,650,000
Water Distribution	1,095,840	1,396,038	1,383,359	1,417,834	1,453,343	1,489,917	7,140,490
Water Production							
Vehicle & Equipment Replacement	472,000	800,000	800,000	500,000	500,000	500,000	3,100,000
Normal WP Replacement	547,923	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
<b>TOTAL UTILITY w/o Engineering</b>	<b>\$ 4,386,375</b>	<b>\$ 7,208,151</b>	<b>\$ 6,824,956</b>	<b>\$ 4,990,611</b>	<b>\$ 5,229,709</b>	<b>\$ 5,198,802</b>	<b>\$ 29,452,229</b>
Engineering							
Plant/Raw Water Capacity	\$ -	\$ 934,504	\$ 8,927,523	\$ 4,467,879	\$ 29,678,751	\$ 29,564,065	\$ 73,572,722
Transmission Capacity	-	-	4,828,436	2,492,500	-	26,792,445	34,113,380
<i>Offsetting Revenue</i>	-	-	-	-	-	(23,336,819)	(23,336,819)
Water Quality	506,789	13,495,317	3,408,461	6,070,729	-	5,439,699	28,414,206
Water Main Replacement	8,168,781	8,233,826	8,522,010	8,820,280	9,128,990	10,327,823	45,032,930
Core Network	2,632,932	11,232,455	6,453,795	4,465,912	6,017,689	4,798,148	32,967,998
DMWW Capital	1,388,916	2,394,651	4,547,668	3,187,118	7,038,109	11,882,024	29,049,571
<i>Offsetting Revenue</i>	(70,304)	(162,120)	(75,311)	(77,947)	(3,283,934)	(83,499)	(3,682,811)
Work for Other Entities	2,519,997	-	-	5,560,376	20,419,745	10,400,337	36,380,458
<i>Offsetting Revenue</i>	(2,495,641)	-	-	(5,004,339)	(20,419,745)	(10,400,337)	(35,824,420)
<b>TOTAL ENGINEERING</b>	<b>\$ 12,651,470</b>	<b>\$ 36,128,633</b>	<b>\$ 36,612,582</b>	<b>\$ 29,982,508</b>	<b>\$ 48,579,605</b>	<b>\$ 65,383,886</b>	<b>\$ 216,687,214</b>
<b>TOTAL UTILITY</b>	<b>\$ 17,037,845</b>	<b>\$ 43,336,784</b>	<b>\$ 43,437,538</b>	<b>\$ 34,973,119</b>	<b>\$ 53,809,314</b>	<b>\$ 70,582,688</b>	<b>\$ 246,139,443</b>