

# Internal Monitoring Report

**Policy:** EL-2C Financial Planning/Budgeting

**Frequency:** Twice a year (May and August)

**Date:** May 22, 2018

## Policy Language:

The General Manager shall not cause or allow financial planning to deviate materially from the board's Outcomes priorities, risk financial jeopardy or fail to be derived from a multiyear plan.

Accordingly, the General Manager shall not cause or allow conditions, procedures or decisions that:

1. Allow budgeting which would risk incurring those situations or conditions described as unacceptable in the Financial Condition and Activities policy (EL-2D).
2. Fail to provide the full amount established by the board according to the Agenda Planning to Achieve Board Outputs policy (BP-2C).
3. Fail to provide the board with an opportunity for one month's deliberation prior to approval of cost increases in excess of 15% of the established budget for a project.

## General Manager's interpretation and its justification:

This Executive Limitations policy recognizes that financial planning and sound budgeting are necessary for the achievement of the board's Outcomes priorities and in order to avoid financial jeopardy. Sound budgeting is also necessary for the board to invest resources in improving its own governance capacity. The Utility has the responsibility to establish, manage and plan for the necessary water rates and debt to fund all expenditures to meet identified capital and operational requirements, and to budget accordingly.

The board has enumerated in this policy three specific areas: budgeting in accordance with policy EL-2D, and providing funds for board education and training as described in policy BP-2C, and providing the board with an adequate opportunity to deliberate and weigh options prior to making a decision on projects that are over the established budget.

## Data directly addressing the General Manager's interpretation:

The proposed Water Utility Capital Budget and Capital Improvement Plan is aligned materially with the board's Outcomes priorities and projects capital expenditures through the year 2024. However, due to the water utility's current financial condition, facility projects to accomplish Water Quantity, Water Quality, and Reliability Outcomes have been postponed. The Capital Budget for 2019 and 2020 provides primarily for pipeline projects. A copy of this document is attached.

The utility uses a financial planning model developed by Springsted Financial to evaluate and project funding required for financing infrastructure and operating needs. This model is being used to plan the budget, revenue bond offerings, and develop future rate requirements.

The 2019 Operating Budget is a master agenda item for the August board meeting.

In the past year, the board has always been provided with a one month period of time for review and deliberation of cost increases in excess of 15% of the established budget for a project.

I report compliance.

**Attachment:**

2019 Capital Budget and Capital Improvement Plan

City of Madison 2019 Capital Improvement Plan  
 Agency Request Summary

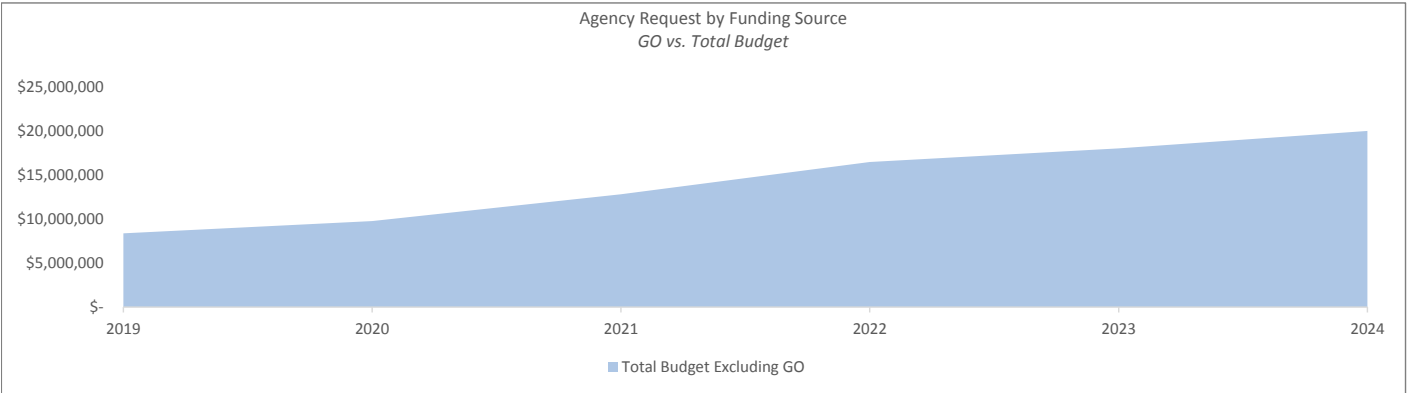
Agency : Water Utility

Agency Request by Project (All Funds)

Project	2019	2020	2021	2022	2023	2024
Lakeview Reservoir Reconstruction	-	-	2,081,000	-	-	680,000
Water Utility Facility Improvements	491,000	512,000	704,000	1,132,000	768,000	1,158,100
Booster Station 106 Reconstruction	-	-	-	-	-	813,000
Far West Elevated Reservoir	-	-	-	-	-	1,355,000
Well 19 Iron and Manganese Filter	-	-	-	-	-	665,330
Unit Well 12 Conversion to a Two Zone Well	-	-	228,960	3,816,000	804,000	-
Booster Pump Station 109 (Spaanem Ave)	-	-	-	-	345,000	2,873,000
Water Mains Replace Rehab Improve - Pipe Lining	-	1,040,000	1,082,000	1,125,000	1,170,000	1,217,000
Water Mains Replace Rehab Improve - Reconstruct Streets	4,887,000	5,180,000	5,491,000	5,820,000	6,169,000	6,539,000
Water Mains Replace Rehab Improve - Pavement Manageme	1,620,000	1,717,000	1,820,000	1,929,000	2,045,000	2,168,000
Water Mains - New	1,382,000	1,317,000	1,396,000	2,261,000	2,397,000	2,541,000
Booster Pump Station 129 Reconstruction	-	-	-	384,240	4,330,000	-
	<b>\$ 8,380,000</b>	<b>\$ 9,766,000</b>	<b>\$ 12,802,960</b>	<b>\$ 16,467,240</b>	<b>\$ 18,028,000</b>	<b>\$ 20,009,430</b>

Agency Request by Funding Source

Project	2019	2020	2021	2022	2023	2024
Revenue Bonds-Water	8,380,000	9,766,000	12,802,960	16,467,240	18,028,000	20,009,430
<b>Total</b>	<b>\$ 8,380,000</b>	<b>\$ 9,766,000</b>	<b>\$ 12,802,960</b>	<b>\$ 16,467,240</b>	<b>\$ 18,028,000</b>	<b>\$ 20,009,430</b>





**Madison  
Water Utility**

**Final**

				2019	2019 Capital Budget						
				2019-2030 CIP							
				Updated:	May 10, 2018	(120,000)	586,000	802,960	467,240	748,000	1,349,430
				Budget Goal w/ Inflation	8,500,000	9,180,000	12,000,000	16,000,000	17,280,000	18,660,000	
				Annual Totals	\$ 8,380,000	\$ 9,766,000	\$ 12,802,960	\$ 16,467,240	\$ 18,028,000	\$ 20,009,430	
Line	Project	Description/Purpose	Primary Construction Year	Tasks	2019	2020	2021	2022	2023	2024	
1	<b>BPS #106 Area Hydraulic Improvements</b>		<b>Ongoing</b>								
2		The upgrade of Booster Pump Station 106 was finished in 2014. Piping improvements to the system have made over several years in the Sunset Hills area. Funds are budgeted for piping improvements to benefit this area on		Pipeline Improvements						813,000	
3				<b>Total</b>	-	-	-	-	-	813,000	
4											
5	<b>Well 7 Area Hydraulic Improvements</b>		<b>Ongoing</b>								
6		Well 7 was totally reconstructed in 2015. To fully benefit from the well upgrade, hydraulic capacity improvements to the distribution system have been budgeted and planned. Piping improvements on Schlimgen Avenue and Mac Pherson Street will improve east west water flow.		Finalize Construction							
7				Pipeline Improvements							
8				<b>Total</b>	-	-	-	-	-	-	
9											
18	<b>Lake View Reservoir and BPS Reconstruction (Res 113)</b>		<b>2021</b>				<b>Start Const</b>				
19		Construction of the Lake View Reservoir was completed in 2017. Reconstruction of the Lake View Reservoir and associated pipe upgrades is the first phase of a significant water supply facility upgrade on the north side of Madison. Funds are budgeted in 2020 to upgrade the existing Lake View Booster Pumping station to increase capacity. Hydraulic improvements are being made to the distribution system in 2020 along Lake View Avenue, Esch Lane, and N. Sherman Avenue to improve hydraulics within Pressure Zone 5. This will allow the Zone to be significantly expanded.		Public Engagement			5,000				
20				Engineering Services			156,000				
21				Construct 2-Zone Reservoir							
22				System Hydraulic Imp			620,000			680,000	
23				Upgrade Pumps @ BPS 213			1,300,000				
24				Water Main Imp. To BPS 213							
25				<b>Total</b>	-	-	2,081,000	-	-	680,000	
26											
27	<b>Well 31 Design and Construction</b>		<b>Ongoing</b>								
28		In 2015 a 1.5 MG reservoir was constructed on the Well 31 site as Phase 1 of development of the facility. The well house, filter, and booster pump station were bid in early 2017 with construction slated to start in June 2017 and complete by June 2018. Well 31 project will correct a significant system fire protection deficiency identified by the Water Master Plan Pressure Zone 4. Significant expansion of the system over the years to the south and east has resulted in a significant supply restriction in Zone 4. Adding a second source of supply south of the Beltline Highway will improve fire flow capacity. Funds are budgeted for 2019 and 2023 for distribution system improvement along Dutch Mill Road and Voges Rd extended.		Public Engagement							
29				Drill Production Well							
30				Engineering Services							
31				Construction							
32				Hydraulic Improvement							
33				<b>Total</b>	-	-	-	-	-	-	
34											
35	<b>Blackhawk Elevated Reservoir (Zone 10)</b>		<b>Ongoing</b>								
36		Due to growth on the far west side, a 1.0 MG elevated reservoir is required to meet fire protection requirements. The tower will combine Pressure Zones 10 and 11 and provide additional gravity fed water storage capacity within Pressure Zone 10. The Blackhawk Reservoir is currently under construction and is scheduled to be in service by September 2018. Piping will be added along Old Sauk to connect the reservoir to the system in early 2018. To further improve north south hydraulic connectivity, piping will be added and improved as the area develops. Funds are budgeted in 2021 for anticipated needed piping improvements.		Public Engagement							
37				Engineering Services							
38				Construct 1 MG reservoir							
39				Reservoir piping improvements							
40				Water Main Improvements						1,355,000	
41				<b>Total</b>	-	-	-	-	-	1,355,000	
42											
43	<b>Unit Well 12 Conversion to a Two Zone Well</b>		<b>2022</b>					<b>Start Const</b>			
44		Well 12 will be converted to a two zone well to provide water supply capacity to both Pressure Zone 7 and		Engineering Services			228,960				



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Line	Project	Description/Purpose	Primary Construction Year	Tasks	2019	2020	2021	2022	2023	2024
45	Pressure Zone 8. This conversion will provide operational flexibility and reliability to the west side supply system. The project will be under construction in 2018 and in service in 2019. Piping improvements along Whitney way are planned for 2023 to bolster hydraulic capacity.			Well House Construction				3,816,000		
46				Water Main Improvements					804,000	
47				<b>Total</b>	-	-	228,960	3,816,000	804,000	-
48										
49	<b>Water Treatment System at Well 19</b>		<b>2025</b>							
50	Iron, manganese and radium at Well 19 require treatment. These three contaminants exceed Madison Water Utility water quality goals. A pressure filter system will remove these contaminants from the water and improve overall water quality bringing the system into compliance with Utility goals.			Public Engagement						5,000
51				Engineering Services						660,330
52				Filter Construction						
53				<b>Total</b>	-		-	-	-	665,330
54										
55	<b>BPS 129 Reconstruction</b>		<b>2023</b>						<b>Start Const</b>	
56	Construction of a new and upgraded booster pump station 129 is needed to increase water transfer capacity from Zone 6E to Zone 3. This project will replace the temporary pump station constructed on the Well 29 site in 1990. Pump Station 129 will continue to transfer water from Zone 6E to Zone 3 and back again through a PRV. This operation will provide supply and fire flow capability to the far east side of the system. It will benefit customers through gained reliability and flexibility of operations.			Public Engagement					7,000	
57				Engineering Services			384,240			
58				Water Main Improvements					1,121,000	
59				Construct BPS 129					3,202,000	
60				<b>Total</b>	-		-	384,240	4,330,000	-
61										
62	<b>Booster Pump Station 109 (Spanem Ave)</b>		<b>2024</b>							<b>Start Const</b>
63	With the addition of Well 31 on Tradewinds, water can be moved from Pressure Zone 4 to Pressure Zone 6E to improve overall operational flexibility and reliability. Booster Pump Station 109 is proposed to be constructed at Well 9 to fulfill that function. The pump station will move water from Pressure Zone 4 to Pressure Zone 6E and a pressure reducing valve station will allow water to move from Pressure Zone 6 E to Pressure Zone 4. Piping improvements are budgeted for Buckeye Road and Dean Avenue to improve hydraulic connectivity.			Public Engagement						
64				Engineering Services	-	-	-		345,000	
65				Construct BPS 109						2,873,000
66				Water Main Improvements						
67				<b>Total</b>	-	-	-	-	345,000	2,873,000
68										
69	<b>Well 28 Iron and Manganese Filter</b>		<b>2026</b>							
70	Iron and manganese concentrations at Well 28 exceed Utility water quality standards and guidelines. Construction of an Iron and Manganese Filter at Well 28 will address the water quality issues and risk of colored water events and customer complaints on the far west side. A filter will also reduce the need for flushing and will allow Well 28 to become a year around well if necessary due to increasing demands.			Public Engagement						
71				Engineering Services						
72				Filter Construction						
73				<b>Total</b>	-	-	-	-	-	-
74										
75	<b>Well 30 Iron and Manganese Filter</b>		<b>2027</b>							
76	Iron and manganese concentrations at Well 30 exceed Utility water quality standards and guidelines. Construction of an Iron and Manganese Filter at Well 30 will address the water quality issues and risk of colored water events and customer complaints in the Well 30 service area. A filter would improve finished water quality and reduce the need for annual flushing in the Well 30 service area.			Public Engagement						
77				Engineering Services						
78				Filter Construction						
79				<b>Total</b>	-	-	-	-	-	-
80										
81	<b>Well 14 Mitigation</b>		<b>2028</b>							



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Line	Project	Description/Purpose	Primary Construction Year	Tasks	2019	2020	2021	2022	2023	2024
82		Well 14 provides an excellent source of water to the west side of Madison and it is in the Utility's best interests to maintain the water supply point in the system. Due to winter road salt operations on University Avenue and the surrounding neighborhoods chloride levels in the water pumped from Well 14 have been rising for several years. A project is proposed for 2018 to investigate alternatives to reduce the Cl concentrations at Well 14.		Public Engagement						
83				Engineering Services						
84					Property Purchase					
85					Well 14 Facility and Well Modifications					
86					<b>Total</b>	-	-	-	-	-
87										
88	<b>Well 18 VOC Air Stripper</b>		<b>2029</b>							
89		Water Quality monitoring at Well 18 has indicated an upward trend in the VOC levels. Construction of a VOC Air Stripper at Well 18 will address regulatory issues due to these increasing VOC levels at the well. Well 18 provides an excellent source of water to the south side of Madison within Pressure Zone 6W and it is in the Utility's best interests to maintain the well.		Public Engagement						
90				Engineering Services						
91					VOC Treatment Construction					
92					<b>Total</b>	-	-	-	-	-
93										
94	<b>Well 24 Iron and Manganese Filter</b>		<b>2030</b>							
95		Iron and manganese concentrations at Well 24 exceed Utility water quality standards and guidelines. Construction of an Iron and Manganese filter will address the water quality issues and risk of colored water events and customer complaints in the service area.		Public Engagement						
96				Engineering Services						
97					Filter Construction					
98					<b>Total</b>	-	-	-	-	-
99										
100	<b>New Well - Zone 7 &amp; 8</b>		<b>2031</b>							
101		The 2006 Water Master Plan recommends an additional well to serve both Pressure Zones 7 and 8. The proposed well will improve operational flexibility and system reliability. From Zones 7 and 8 water can be moved to Zones 9 and 10 through existing pumping stations. Water can also be moved to Zone 6W through existing pressure reducing stations. This facility will provide significant operational flexibility to the Utility on the west side of the system and ultimately benefit 5 different pressure zones. Projected development and growth on the west side and the Utility stated policy of limiting average well pumping to 50% of capacity for long term groundwater management make this an important water supply project.		Public Engagement						
102					Site Selection & Property Purchase					
103					Drill test well					
104					Drill production Well					
105					Well Siting Eng Services					
106					Unit Well Engineering Services					
107					Construct Facility					
108					Pipeline Improvements					
109				<b>Total</b>	-	-	-	-	-	-
110										
111	<b>Unit Well No. 8 - Re-Construction</b>		<b>2032</b>							
112		Unit Well No. 8 Re-Construction will totally upgrade and replace the reservoir and pumping station at Well 8. The project will install an iron and manganese filtration system to address current water quality issues. Due to the colored water resulting from the iron and manganese, well operation is currently severely limited to summer only and a total annual production of less than 100 million gallons. The need for this project was verified by the East Side Water Supply project, however, due to concerns about the nearby KIP Corporation VOC contamination, the project has been delayed. The Utility will continue to study the KIP contamination and monitor groundwater quality and flow patterns. Flexibility will be designed into the project to allow the addition of an air stripper if VOC contamination from the KIP site were to reach the well. Funds are included in the budget for a sentinel well in 2019 to allow the water quality to be monitored before it reaches Well 8.		Public Engagement						
113					Groundwater Study					
114					Sentinel Well					
115					Engineering Services					
116					Property Acquisition and Permitting					
117					Well 8 Re-Construction					
118				<b>Total</b>	-	-	-	-	-	-



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Line	Project	Description/Purpose	Primary Construction Year	Tasks	2019	2020	2021	2022	2023	2024	
119		for a chemical well in 2019 to allow the water quality to be monitored before it reaches well 6.									
120				Pipe Replacement Reinvestment Budget Goal	13,610,000	14,020,000	14,440,000	14,880,000	15,320,000	15,780,000	
121	<b>Pipeline Replacement/Rehab/Improvements</b>		<b>Ongoing</b>	<b>Total Pipe Rehab Budget</b>	<b>6,507,000</b>	<b>7,937,000</b>	<b>8,393,000</b>	<b>8,874,000</b>	<b>9,384,000</b>	<b>9,924,000</b>	
122		Madison Water Utility has a planned piping system replacement and upgrade program that provides for annual main replacement and rehabilitation to keep the system at an acceptable service level. Assessment of an aging infrastructure indicates the Utility needs to replace or rehabilitate over 400 miles of pipe in the next 40 years to renew and maintain the system. Madison Water Utility will continue to develop and expand the pipe lining program that was started in 2011. Lining pipe instead of replacing it saves money and extends the useful life of existing assets. The Utility's Water Master Plan also recommends hydraulic improvements to the system to correct hydraulic bottlenecks, fire protection limitations, and other identified issues.		Reconstruction Pipe Projects	4,887,000	5,180,000	5,491,000	5,820,000	6,169,000	6,539,000	
123				Pavement Management	1,620,000	1,717,000	1,820,000	1,929,000	2,045,000	2,168,000	
124				Water Main Rehabilitation		1,040,000	1,082,000	1,125,000	1,170,000	1,217,000	
125				Water Mains - New	1,242,000	1,317,000	1,396,000	1,480,000	1,569,000	1,663,000	
126				Hydraulic Improvement Projects	140,000			781,000	828,000	878,000	
127				<b>Total</b>	<b>7,889,000</b>	<b>9,254,000</b>	<b>9,789,000</b>	<b>11,135,000</b>	<b>11,781,000</b>	<b>12,465,000</b>	
128				Pipe Hydraulic Improvements	1,382,000	1,317,000	1,396,000	2,261,000	2,397,000	2,541,000	
129	<b>Water Utility Facility Improvements</b>		<b>Annually</b>								
130				SCADA System Upgrade and Expansion	22,000	23,000	24,000	25,000	26,000	26,700	
131				Fiber Optic system installation and upgrade	20,000	20,000	20,000	20,000	20,000	20,400	
132				Flow Meter and VFD Conversion		-					
133				Addition of separate Chemical Feed Rooms at Well 6, Well 11, Well 13 & Well 14				329,000		356,000	
134				Development of 2 PRV sub zones. One near Pflaum Rd and one in the Nakoma neighborhood				68,000			
135				Various Facility Upgrade Projects	50,000	53,000	200,000	210,000	221,000	232,000	
136				Meter and fixed network Program	379,000	394,000	410,000	426,000	443,000	461,000	
137				Facility Safety Additions, Olin Roof fall protection system		-	-	-	-	-	
138				Various Olin and Paterson Upgrades and Improvements	20,000	22,000	50,000	54,000	58,000	62,000	
				Retrofit Chlorine Shutoff Valves at 4 Wells							
				HMI Install at Well 29							
				Security Upgrades							
139											
140				<b>Total</b>	<b>491,000</b>	<b>512,000</b>	<b>704,000</b>	<b>1,132,000</b>	<b>768,000</b>	<b>1,158,100</b>	
141					112,000	118,000	294,000	706,000	325,000	697,100	
142				<b>Total Estimated Annual Costs</b>	<b>8,380,000</b>	<b>9,766,000</b>	<b>12,802,960</b>	<b>16,467,240</b>	<b>18,028,000</b>	<b>20,009,430</b>	
143				Facility Reinvestment and Renewal Goal	3,780,000	3,890,000	4,010,000	4,130,000	4,260,000	Facility Reinvestment ar	
144				Facility Reinvestment and Renewal Actual	20,000	22,000	50,000	54,000	58,000	Facility Reinvestment ar	