

Internal Monitoring Report

Policy #: EL-2G Infrastructure

Date: May 24, 2016

Frequency: Annual

I certify that the following information is true.

Signed  _____, General Manager

Policy Language:

The General Manager shall not cause or allow conditions, procedures, or decisions that prevent Madison Water Utility from meeting its obligation to serve current and future generations of customers within the City of Madison and its authorized service areas.

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

1. Fail to assure that required rates fund all expenditures for timely and prudent capital improvements to existing utility systems, and that those capital improvements are driven by reliability, operational or regulatory requirements, replacement of aging infrastructure, utility relocations for public works and road projects, or extension of the life of existing systems.
2. Fail to identify and plan for resource and infrastructure needs for the provision of water service to customers within the City of Madison and the Madison Water Utility's service areas consistent with a reasonable planning period for that service.
3. Fail to coordinate Madison Water Utility activities and policies with the City of Madison's Comprehensive Plan and other relevant guidelines for community development.
4. Fail to consider participation with other governmental or private entities on regional major water infrastructure or water supply planning projects.

General Manager's interpretation and its justification:

This Executive Limitations policy requires that the Utility budget for, fund, prioritize, plan for, and construct the necessary system improvements to replace and sustain the Utility infrastructure for current and future generations. This policy recognizes that any and all long term planning shall be consistent with and comply with any and all City and regional plans. The Utility has the responsibility to establish, manage, and plan for the necessary water rates to fund all expenditures to meet identified capital and operational requirements. The Utility shall administer and conduct long term facility and system wide comprehensive planning to identify system needs and funding priorities. The Utility shall also maintain routine regular condition assessments of all facilities to allow for the planned upgrade and replacement of facilities to assure the long term capacity of the system to meet established levels of service. The Board has identified four specific areas: financial planning, asset management, long term planning and City and Regional planning as key components of this policy.

Data directly addressing the General Manager's interpretation:

1. *Assure that required rates fund the full cost of utility system capital improvements, and that those capital improvements are prioritized by reliability, operational or regulatory requirements, replacement of aging infrastructure, utility relocations for public works and road projects, or extension of the life of existing systems.*

Madison Water Utility has developed an annual capital improvement (CIP) budget for 2016 based on the Utility's Water Master Plan, water quality issues, level of service policies, the Utility's Infrastructure Management Plan, other known capital improvement needs, itemized maintenance of the system, and the Utility's financial capacity to fund the CIP. The 2016 Capital Budget was approved by the Common Council in November 2015 and is being implemented. The 2017 capital budget was developed in April and approved by the Water Utility Board at their April meeting. The proposed 2017 capital budget was submitted to the Mayor for consideration. The proposed 2017 capital budget provides projections through the year 2022 for long term planning purposes.

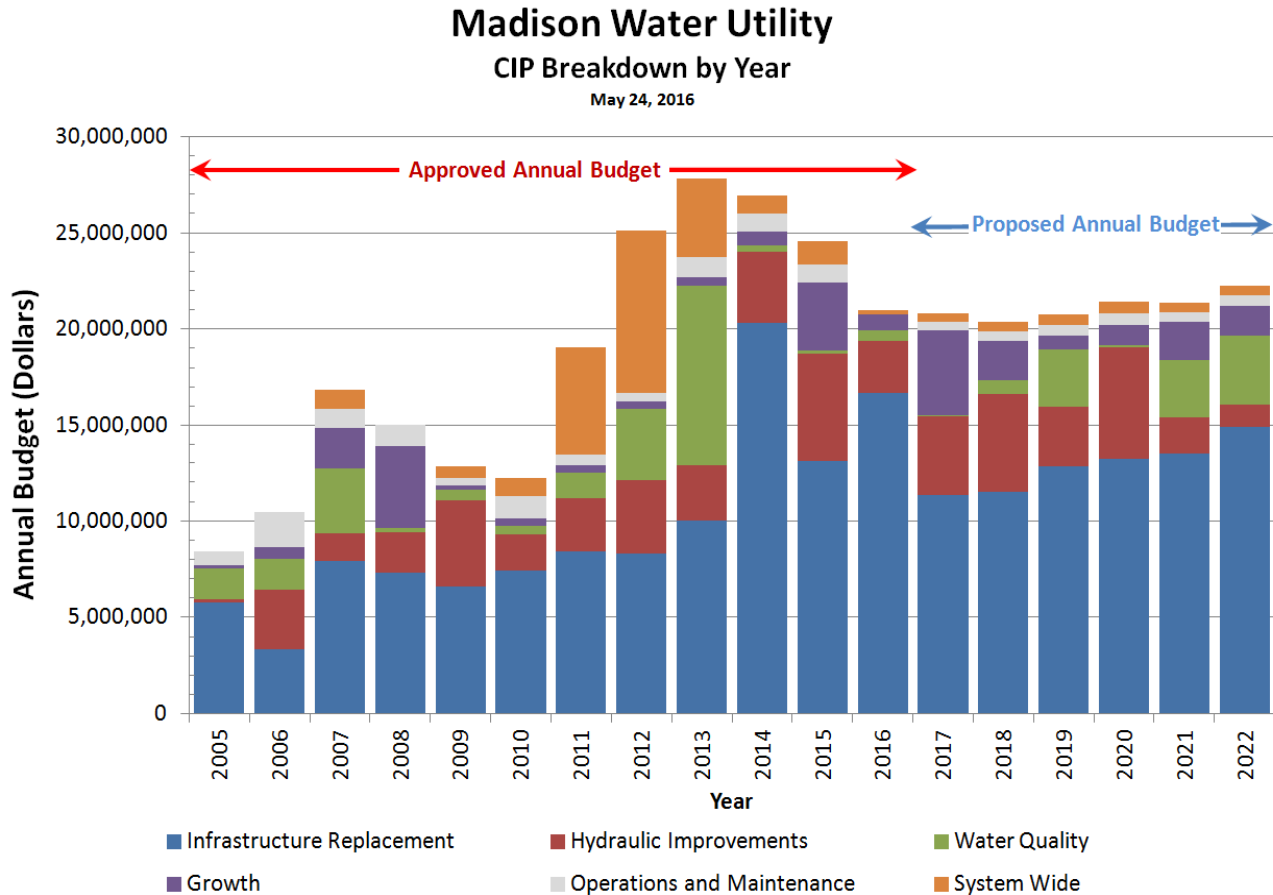
Projects included in the CIP are those needed to comply with minimum service levels established by the Utility. These projects include hydraulic upgrades, water quality improvements, and long term facility replacements identified and prioritized in the Water Master Plan, the Infrastructure Management Plan, and the East Side Water Supply Plan. The Utility currently uses a 5 to 10 year projection for the planning level CIP Budget projections.

The Utility's total annual capital budget capacity is based on the current and projected rate base and the Utility's borrowing capacity. Water rates and any projected rate increases are in compliance with the Water Board policy on the affordability of water. To manage water rates and ensure that the rate structure will cover anticipated capital expenditures and provide infrastructure renewal, the Utility has developed and uses a financial planning model to evaluate and project rate needs based on projected capital spending. As a part of the 2015 rate case submitted to the PSC, revenue projections and future rate increases were developed within the Utility water rate policy guidelines. Based on these rate projections and the Utility's borrowing capacity, the Capital Budget going forward will be limited to \$20 million per year (2015 dollars).

The City's Capital budget is developed during May and June each year, the next year's capital budget is refined based on need, funding, current conditions, public feedback, and staff availability. The proposed capital budget is submitted first to the Water Utility Board for review and then to the Mayor and the Common Council for approval.

A copy of the approved Water Utility 2016 Capital Budget prepared and approved in November 2015 is attached for information and use. The approved capital budget indicates authorized projects for 2016 and provides projections through the year 2021. A graph illustrating the approved annual capital budgets from 2005 to 2016 and the projected annual budgets through the year 2022 is included below. The graph shows the total capital budget by year and also the breakdown by infrastructure replacement, hydraulic improvements, water quality improvements, growth, operations and maintenance, and system wide projects. This

graph illustrates that the Utility has aggressively increased capital budget spending over the past decade to replace and upgrade its aging infrastructure.



Historically CIP spending has been budgeted for the year in which the project starts. This process allowed the contract to be issued and fully funded within the approved budget. The majority of facility projects executed by the Utility span several years starting with conceptual development and then moving to final design and construction. Budgeting for the full project in a single year does not provide a good illustration of annual spending and requires a significant routine reauthorization component in the budget from year to year. Beginning in 2015 a budget based on spending projections has been developed with the objective of budgeting spending in the year projected. Budgeting based on projected spending provides a better picture of Utility spending and borrowing needs.

Based on recommendations in the 2005 Infrastructure Management Plan, the Utility dedicated itself to actively funding infrastructure renewal. Reflecting that effort, funding of the CIP was increased from \$6 to \$8 million per year to \$20 million per year. With this increase came an associated increase in borrowing. To support this infrastructure renewal funding level, aggressive rate increases will be required. To remain in compliance with Water Utility Board policy to limit annual rate increases to less than 10%, the CIP will be funded at a level of approximately \$20 million per year (2015 dollars). This funding level reflects a significant

commitment to infrastructure renewal. This effort far exceeds that done by other utilities across the State of Wisconsin and the majority of utilities across the country.

At the end of 2015, the Utility hired an Asset Manager. This new position is coordinating the development and implementation of an Asset Management Program. The Asset Management Program will build on existing processes to assess and catalogue the condition of all of the Utility's assets and develop a long range process to maximize the value of all assets. Through a process of assessment, risk analysis, preventive maintenance and planning, the Utility's investment in its capital assets will be maximized and a long term plan for system renewal will be implemented.

Capital budget projects currently underway in 2016 include over 7 miles of water main replacement, over \$1 million in pipe lining work, completion of the reconstruction of the Lake View Reservoir, and reconstruction of the Paterson Street Operations Center. Major projects currently in design and planned to start construction in 2017 include Well 31 and the Blackhawk Reservoir. The reconstruction of Well 12 and conversion to a two zone well is being designed with construction scheduled to start in 2018. During the past decade only a small percentage of CIP spending is investing in facilities required to support growth or expansion of the system.

I report compliance.

- 2. Identify and plan for resource and infrastructure needs for the provision of water service to customers within the City of Madison and the Madison Water Utility's service areas consistent with a reasonable planning period for that service.*

A system wide Water Master Plan has been used by Madison Water Utility for long term system planning since 1964. The plan is routinely updated every 5 to 10 years and outlines the needed improvements to facilities and piping systems. The latest version of the Master Plan was developed from 2004 to 2006 and approved by the Water Utility Board in December 2006.

The Water Master Plan is a key planning tool for the preparation of the annual capital budget. During 2010 to 2012 the area east of the Yahara River including the north side and the southeast corner of the City, was evaluated for long term water demand and water quality needs. This planning project was titled the "East Side Water Supply Project". The East Side Water Supply Project verified the need for several water supply projects and identified several water quality improvement projects. The Utility has been actively completing those recommended projects over the last few years.

A request for proposals was issued to solicit a consultant to update the Utility's Water Master Plan. It is expected that the update of the Water Master Plan will start in the summer of 2016 and be completed by the end of 2017. One focus of this update will be to incorporate the water demand data from the Utility's AMI system. Using AMI data to update computer model demands, develop diurnal water demand curves, and evaluate seasonal peaking factors will be instrumental in improving our system planning model. It is anticipated that extensive modeling on system reliability, impacts of water conservation, and asset criticality will provide an excellent picture of long term capital needs. The Water Master Plan update will also look at

financial planning parameters, financial capacity, and long term rate needs. The Water Master Plan will provide the basis for the Capital Improvement Program for the Utility. This Water Master Plan will shape the development and renewal of the system for the next 20 years.

Madison Water Utility completed its first Infrastructure Management Plan in 2005. This Plan evaluated and documented the condition of the Utility's assets with the objective of planning and budgeting for long term maintenance and replacement. The information gathered during the preparation of the Infrastructure Management Plan is used to identify needs, prioritize maintenance and replacement, and assist in the development of the annual capital budget.

Since completion of the 2005 Infrastructure Management Plan, the pipe replacement budget has increased by over 350% as the Utility works to replace an aging water distribution system. The Utility has approximately 400 miles of pipe to replace over the next several decades. Due to the heavy commitment to distribution system replacement, only critical facility upgrade projects have been completed over the past 10 years. It is expected that work on wells, pump stations, and reservoirs will continue to ramp up over the next several years. Routine inspections and facility assessments are continuing and work is planned and prioritized as determined by the inspections.

The Utility Asset Manager has developed and issued a request for proposal to hire a consultant to develop an Asset Management Strategic Plan. The Asset Management Strategic Plan will assess what has been done and will lay the groundwork for developing the Asset Management Program. The consultant is also being asked to provide educational opportunities for staff and the Water Utility Board. This will be the first step in formalizing the asset management program. It is expected that an asset management program will take several years to fully implement and refine.

I report compliance.

- 3. Coordinate Madison Water Utility activities and policies with the City of Madison's Comprehensive Plan and other relevant guidelines for community development.*

Madison Water Utility works closely with the City Planning Department during the preparation of the Water Master Plan to ensure coordination and compliance with City long term planning efforts. Population estimates, development patterns and neighborhood plans are drawn from the City of Madison Planning Department's Comprehensive Plan and other planning documents. Utility engineering staff relies on the Planning Department to revise and update the City Comprehensive Plan per community development patterns and guidelines, changes in Zoning codes and revisions to economic development projections within the planning area.

I report compliance.

- 4. Participate with other governmental or private entities on regional major water infrastructure or water supply planning projects.*

During the past year, no major regional water infrastructure or water supply projects were developed or planned. Madison Water Utility is forming a working group with Madison Metropolitan Sewerage District and City Engineering to develop a comprehensive water

sustainability plan. The Utility is dedicated to protecting the groundwater resource and promoting long term water conservation initiatives.

To address regional planning issues, Madison Water Utility participates in regional water groups as they develop and is an advocate of regional water supply planning. Over the years, the Utility has facilitated some high level discussions within Dane County regarding regional groundwater management. Utility management, water quality and engineering staff actively participate on Wisconsin Section of the American Water Works Association committees. AWWA committee participation facilitates the exchange of information and ideas with regard to drinking water industry issues and regulations.

I report compliance.