

CITY OF SANTA ROSA
BOARD OF PUBLIC UTILITIES

TO: BOARD OF PUBLIC UTILITIES
FROM: CLAIRE MYERS, ENERGY AND SUSTAINABILITY
REPRESENTATIVE
SANTA ROSA WATER DEPARTMENT

SUBJECT: ACCEPTANCE OF ENERGY OPTIMIZATION PLANS

AGENDA ACTION: MOTION

RECOMMENDATION

It is recommended by the Santa Rosa Water Department that the Board of Public Utilities, by motion, accept the final Energy Optimization Plans for Regional Water Reuse and Water Operations.

EXECUTIVE SUMMARY

Water Department staff have completed Energy Optimization Plans (EOPs) for Regional Water Reuse and Water Operations. The EOPs serve as roadmaps for strategically and systematically optimizing energy use in Santa Rosa's water systems. Accepting the final EOPs will allow staff to further investigate projects recommended in the plans, with the goal of reducing energy costs, reducing greenhouse gas (GHG) emissions, and moving the Department towards energy independence.

BACKGROUND

The recently completed EOPs for Water Operations and Regional Water Reuse guide the Department to better optimize energy use in Santa Rosa Water's systems. The purpose of the EOPs is two-fold: (1) to evaluate current systems and practices and memorialize the many energy efficiency and renewable energy projects completed to-date; and (2) to identify opportunities and a cost-effective project portfolio to move towards energy independence and meeting or exceeding Santa Rosa's greenhouse gas (GHG) reduction target (20% below 2000 levels by 2020). The EOPs also support City Council's Goal, Promote Environmental Sustainability: Santa Rosa protects and improves the environment through its policies and actions.

Kennedy/Jenks Consultants (K/J), with assistance from City staff, completed audits of the four Regional Water Reuse systems (Laguna Treatment Plant, Biosolids/Compost,

Reclamation, and Geysers), and an audit of Water Operations systems. K/J then completed detailed investigations of projects and processes (“measures”) within these systems that would enhance energy efficiency, reduce energy demand, increase renewable energy generation, and/or improve energy management. These audits and investigations, and the recommendations they provide, are analyzed in technical memorandums.

The technical memorandums evaluate over 100 Energy Efficiency Measures, Renewable Energy Measures, and Process Improvements. The analyses are meant to provide enough information to determine if a measure is feasible, if it would likely result in energy reductions and/or cost savings for the City, and the approximate magnitude of those savings. For measures with direct energy savings, the technical memorandums provide a quantified cost-benefit analysis. For measures with indirect energy savings that are difficult or impossible to quantify (e.g., updating SCADA dashboards to show pump station specific energy), potential energy and cost savings are discussed but not calculated.

Staff evaluated and prioritized potential measures for implementation using several metrics. Staff first evaluated the feasibility of measures, given the parameters of the department’s water system and how implementation could affect operations. For measures deemed operationally feasible, staff considered the potential costs and energy savings, staff availability, and how easily the measure could be implemented. Measures were ultimately sorted into four broad categories of prioritization:

- **Pursue:** These measures are considered top priority. Staff will gather additional research to confirm if and how the measure should be implemented. If a measure is confirmed for implementation it will be evaluated as part of the Capital Improvements Plan, as appropriate. Six measures are recommended to pursue in the Regional Water Reuse EOP, and ten measures are recommended in the Water Operations EOP.
- **Completed or In Planning:** These measures have been implemented by staff, are currently in the process of being implemented, or are already in planning stages for future implementation. Nine measures in the Regional Water Reuse EOP have been completed or are in planning, as are four measures in the Water Operations EOP.
- **Not Pursue at this Time:** These measures will not be pursued at this time for reasons such as operational infeasibility, cost, increased risk of permit violations, or because they were tested and didn’t work. Twenty-five measures in the Regional Water Reuse EOP and four measures in the Water Operations EOP will not be pursued at this time.
- **Not Recommended:** These measures were evaluated by K/J but not recommended for implementation. In most cases, the capital costs outweighed potential cost savings. In other cases, the potential measure did not generate

energy savings, was infeasible, and/or was operationally impractical. Twenty-one measures in the Regional Water Reuse EOP and thirty measures in the Water Operations EOP were not recommended.

PRIOR BOARD OF PUBLIC UTILITIES REVIEW

On September 5, 2013, the BPU approved by motion a contract with Kennedy Jenks (K/J) in the amount of \$28,700 for Phase 1 of the EOP project. Phase 1 included the development of a scope of work for establishing an EOP for the Santa Rosa Water Department.

On January 16, 2014, the BPU approved by motion contract Amendment No.1 (not to exceed \$159,700) to conduct energy and process efficiency audits of the Subregional (now Regional Water Reuse) System and to identify potential practices, programs, and projects for optimizing energy use in the Subregional System.

On September 18, 2014, the BPU approved by motion contract Amendment No.2 (not to exceed \$19,500) to assess the potential energy and cost savings associated with modifying recycled water pump stations.

On March 19, 2015, the BPU approved by motion a contract with K/J in the amount of \$121,960 for Phase 2 of the Regional Water Reuse EOP project.

On September 1, 2016, the Board approved by motion an amendment with K/J for \$8,030 to complete Phase 2 of the Regional Water Reuse project.

On August 1, 2019, the Board conducted a Study Session to review the draft EOPs for Water Operations and Regional Water Reuse.

ANALYSIS

The EOP memorializes the many energy efficiency and renewable energy measures already completed by the Department, as well as support the Department's efforts to reduce energy consumption, GHG emissions, and costs associated with purchasing electricity and natural gas.

Acceptance of the EOPs does not commit the Department to moving forward with any of the recommended measures. Accepting the EOPs would, however, allow staff to continue investigating the sixteen measures prioritized as "to pursue" to better understand if the measures should be implemented, and if so, when and how. The additional investigation would also include more refined calculations of potential capital costs, energy cost savings, and GHG savings. Measures approved for implementation would be evaluated as part of the Capital Improvement Plan and be brought forward to the BPU for additional discussion and approval as appropriate.

FISCAL IMPACT

There is no fiscal impact of accepting the EOPs. The plans conduct preliminary assessment of possible projects but do not approve implementation of any specific projects. Projects chosen to implement would be evaluated as part of the Capital Improvement Plan as appropriate and brought forward to the BPU for additional discussion and approval.

ENVIRONMENTAL IMPACT

This action is exempt from the California Environmental Quality Act (CEQA) because it is not a project at this time pursuant to CEQA Guideline Section 15378. Any future projects that result from this planning exercise will be subject to CEQA review..

BOARD/COMMISSION/COMMITTEE REVIEW AND RECOMMENDATIONS

Not applicable.

ATTACHMENTS

- Attachment 1 – City of Santa Rosa Water Operations Energy Optimization Plan
- Attachment 2 –City of Santa Rosa Regional Water Reuse Energy Optimization Plan

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