



Capital Projects Oversight Program

FACTORIA RECYCLING AND TRANSFER STATION PROJECT OVERSIGHT REPORT



February 5, 2013

Thomas Wood
Tina Rogers

Executive Summary

The Solid Waste Division (SWD) reduced the capacity, size, and estimated construction cost of the Factoria Recycling and Transfer Station in response to lower waste forecasts and recommendations from the 2011 performance audit. The total estimated cost for the project is \$88.8 million. Additional opportunities to make the project more cost effective exist. SWD is making progress but has not fully met new County project management requirements that apply to this project.



Metropolitan King County Council
King County Auditor's Office
Cheryle A. Broom, *King County Auditor*
King County Courthouse
516 Third Avenue, Room W1033
Seattle, WA 98104-3272
206.296.1655 Fax 206.296.0159
Email: KCAO@kingcounty.gov
TTY Relay: 711
www.kingcounty.gov/auditor

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Capital Projects Oversight Program

FACTORIA RECYCLING AND TRANSFER STATION PROJECT OVERSIGHT REPORT

Report Highlights

February 5, 2013

Purpose

The King County Auditor's Office (KCAO) is conducting capital project oversight on the Factoria Recycling and Transfer Station (Factoria RTS) project. In response to our 2011 "Performance Audit of Solid Waste Transfer Station Capital Projects," the Solid Waste Division (SWD) agreed to revisit the waste capacity assumptions, design, and delivery method for the project to achieve greater cost effectiveness. This document reports on SWD's progress and identifies opportunities for improvement.

Key Findings

In response to the 2011 performance audit, SWD:

- Revised the waste forecast for 2030 using updated economic data.
- Reduced the Factoria RTS size by 23 percent.
- Lowered the construction cost estimate by 14 percent.

SWD was late in setting the project baseline for assessing scope, cost, and schedule performance. Set in December 2012, the baseline shows:

- Total estimated project cost of \$88.8 million;
- Planned opening of new transfer building to customers in June 2016; and,
- End of construction by November 2017, including planned opening of new household hazardous waste building.

We identify additional opportunities to improve the cost effectiveness of the project.

SWD has not fully implemented King County guidelines and requirements intended to inform project management decisions and promote accountability for delivery results. SWD is making progress and is using the Factoria RTS to pilot their division's approach to meeting these requirements in the future.

What We Recommend

We encourage SWD to obtain a review by the Facilities Management Division of the administration building design, to evaluate whether staff areas align with County space standards and identify potential cost savings.

SWD should continue updating their project management procedures and comply with code requirements and executive policies applicable to capital improvement projects on future projects, using the Factoria RTS project pilot efforts for guidance.

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I. Factoria RTS Project Updates

Section Summary

In response to the 2011 performance audit, SWD updated its waste forecast for the Factoria RTS, reducing the size and estimated construction cost of the planned facility. SWD will be starting and ending construction later than previously forecasted. During the performance audit, the preliminary design documents showed SWD was planning to build a larger, more expensive facility than approved in the 2010 Facility Master Plan (FMP). KCAO recommended that SWD update its facility plan for the Factoria RTS. SWD agreed, making the revisions summarized below when they set the project baseline in December 2012.

Facility Size and Construction Cost Changes

SWD reduced the 2030 waste forecast for the Factoria RTS by 13 percent, from 800 to 700 tons per weekday, using updated economic data. This contributed to a 23-percent reduction in the size of the planned facility and a 14-percent reduction in the estimated construction cost. The revised construction estimate closely matches the amount shown in the FMP.

The following table summarizes the facility size and construction cost estimates for the Factoria RTS over time. The appendix at the end of this report provides a detailed summary of the facility size revisions.

Exhibit A: Comparison of Facility Size and Estimated Construction Cost Over Time

Facilities Master Plan (Nov 2010)	Preliminary Design (Apr 2011)	Baseline (Dec 2012)
88,500 square feet (sf) \$50.2 million*	103,400 sf \$58.3 million*	80,000 sf \$50.3 million*

*All costs shown were converted to 2016 dollars for comparison purposes.

Total Project Cost Estimate

The project baseline, completed in December 2012, sets the estimated total cost of the Factoria RTS project at \$88.8 million. Comparison to the FMP is not possible since there was no total project cost estimate included. SWD previously published two total project cost estimates: \$77.5 million in July 2010 and \$84.0 million in mid-2012 in their 2013 budget request to the County Council. In addition to construction costs, total cost estimates include all costs to design and administer the project as well as any property acquisition costs. SWD spent approximately \$8 million to acquire 2.5 acres needed to expand the existing 8.7-acre Factoria RTS site. Acquisition of this property honored King County's agreement with the city of Bellevue for an alternative to using the County's SE Eastgate Way property originally planned for the project.

I. Factoria RTS Project Updates

Budget Appropriations

With the 2013 budget adoption, the County Council has appropriated a total of \$84.0 million for the Factoria RTS. This indicates a need for future supplemental appropriation if SWD cannot find additional project cost savings. Through December 2012, SWD has expended approximately \$17.9 million on the project.

Baseline Schedule

SWD has set the baseline schedule for the Factoria RTS project showing a four-phase construction plan that accommodates keeping the existing facility operating until the new transfer building opens in June 2016. Construction is planned to begin in May 2014, seventeen months later than forecast in the FMP, and continue through November 2017 with the opening of the new Household Hazardous Waste facility and substantial completion of the project.

According to SWD, the overall condition of the existing facility and the County Council adopted Solid Waste Management Plan are the main schedule drivers. The County built the existing Factoria station in the 1960s. The roof is unsafe in snow load conditions, requiring occasional shutdowns of the facility during winter months. The roof clearance and tipping floor space are inadequate for maneuvering today's larger commercial trucks, and the existing facility cannot meet level of service goals for wait times.

2. Opportunities for Additional Savings

Section Summary

Opportunities for further cost reductions exist. SWD engaged in an extensive assessment and redesign effort to deliver a more cost-effective project. They evaluated 37 specific proposals to lower estimated construction costs and to improve the facility design. The Auditor's Office has identified additional potential opportunities to reduce the cost of the Factoria RTS and they are presented below.

Solar Panel Costs

One opportunity to reduce costs is to delete the solar panel system currently designed for the roof of the transfer station building from the project scope. This may mean changing the LEED¹ certification goal for the Factoria RTS from Gold to Silver. According to studies by SWD's consultant, the solar panel system will cost over \$400,000 and show a negative return on the County's investment. The consultant's current estimate indicates it would take 65 years for the solar panel system to produce enough electricity to pay for itself, more than the expected 50-year life of the new facility.

SWD indicated that the solar panel system implements policy directives from the King County's Energy Plan and Strategic Climate Plan. They are reviewing the solar panel system design. SWD indicated they would not install the solar panel system as currently designed unless they can obtain a supplemental utility grant or other renewable energy incentive funding.

Administration Building Amenities

Another potential opportunity to reduce costs is to reevaluate the design of the public greeting areas and staff areas planned for the administration building of the Factoria RTS. For instance, the design duplicates conference space constructed at the new Bow Lake facility, which was justified as a centralized meeting area for staff across the solid waste transfer system and as a gathering place for school field trip groups. The staff area may also be too large for the staffing levels planned for this location. The finishes and amenities planned for the space may exceed the County's office standard and cost savings may be possible without sacrificing functionality.

Input from the Facilities Management Division (FMD) on the administrative building design could prove helpful in identifying cost savings. FMD is responsible for developing county space standards and designing facilities to meet the standards. They also have extensive recent experience and lessons learned from private sector development of LEED certified buildings for the County.

¹ LEED (Leadership in Energy and Environmental Design) is a green building certification. Platinum is the highest rating, followed by Gold, Silver, Bronze, and Certified.

2. Opportunities for Additional Savings

Recommendation I We encourage SWD to obtain a review by FMD of the design of the administration building to evaluate if staff areas align with the County's space standards and identify potential cost savings.

Contractor Input for Savings There may be opportunities for contractors to help SWD identify additional cost savings. SWD will be using an alternative delivery method that allows for dialogue with contractors² during procurement. SWD indicated they hope to improve the utility design details and to develop more cost-effective construction phasing through discussions with contractors during the procurement period. The Auditor's Office also encourages SWD to seek contractor input to help reduce the \$786,000 estimated cost of the aesthetic treatment planned on the 35-foot tall retaining wall. We suggest they work with the Finance and Business Operation Division to help facilitate contractor input on opportunities for cost savings using the flexibility of the alternative procurement process. SWD intends to apply lessons learned from the recently completed Bow Lake Recycling and Transfer Station project to guide their effort.

² SWD is using the alternative delivery method provided in RCW 36.58.090 for the construction of solid waste handling facilities. It allows general contractor selection based on terms determined "... to be fair and reasonable and in the best interest of the County." It also allows for increased coordination between the general contractor, designer, and the division prior to award of the construction contract.

3. Project Management Issues

Section Summary

SWD has not fully implemented important King County project management guidelines but is striving to do so. They completed some major project management steps required by Executive Policy and King County Code late. They also did not conduct a comprehensive assessment of the alternative project delivery methods recommended in the 2011 performance audit. SWD is using the Factoria RTS project to pilot updates to several project management processes.

Project Baseline Timing

SWD was late in setting the baseline for measuring project scope, schedule, and budget performance reducing transparency and accountability. SWD finalized their baseline report in December 2012, six months after reaching the 60-percent design milestone in June 2012. King County Code 4.04.245 and Executive Policy CIP 8-1 state that the baseline should be set at 30 to 40-percent design, which was reached in January 2012. SWD indicated they did not want to set the project baseline until after they received the conditional use permit from the city of Bellevue, expected in late 2012. The city did not impose any special permit conditions beyond what SWD anticipated, and while awaiting this outcome, SWD advanced the design to 90 percent and gained additional certainty in project cost and schedule forecasts.

Prior to establishing a formal baseline, SWD told us they produced internal reports for performance monitoring, measuring against the schedule and costs from the FMP. We reviewed their June – November 2012 status report and agree it offers a comprehensive project summary. However, earlier baselining of cost and schedule would have achieved greater transparency through quarterly performance reporting on the County’s website.³

Project Designated for Increased Scrutiny

In October 2010, the County’s Joint Advisory Group designated the Factoria RTS to be a mandatory phased appropriation (MPA) project deserving of increased scrutiny by the County Executive and County Council. Among other things, King County Code Section 4.04.245 requires agencies to

³ “Baselined Projects” reports at <http://www.kingcounty.gov/exec/PSB/Budget/CIP.aspx>.

3. Project Management Issues

provide specific information on MPA projects when requesting appropriation for their next phase. The County Executive's 2013/2014 budget request for the Factoria RTS did not comply with the code requirement to set the baseline before requesting implementation phase funding.

SWD's baseline report for the Factoria RTS is comprehensive and provides a model for future projects. Except for being late, it fully addresses current code and guidelines. It provides a comprehensive plan for complying with MPA project requirements for the Factoria RTS during final design and construction.

LEED Cost Assessment Concerns

SWD's cost assessment of green building features to achieve LEED certification was completed late. Their preliminary estimates for the incremental costs to achieve a LEED Gold rating exceeded code cost limits. SWD recently released a new cost estimate indicating that achieving LEED Gold is possible within the code cost limit, but we have not yet thoroughly reviewed it.

King County's Green Building Code requires LEED cost assessments at no later than 30 percent project design. It also directs agencies to seek LEED Gold certification, as long as the incremental cost does not exceed 2-percent of the project construction cost. If LEED costs exceed 2-percent, the code directs agencies to seek the next highest LEED rating available within that percentage. The Auditor's Office is aware of projects where County divisions lowered their LEED certification goal to keep costs under the code threshold.

SWD completed its LEED cost assessment late, in January 2013 at greater than 90-percent design. Prior to completing the assessment, SWD continued to invest resources designing the project for LEED Gold even though their project documents indicated this would cost approximately 3-percent or 50-percent more than the 2-percent code threshold.

SWD's January 2013 revised LEED cost assessment indicates that LEED Gold is achievable at an incremental cost just under the 2-percent code threshold. We have not fully reviewed it but note that such analyses can be very sensitive to certain assumptions.

3. Project Management Issues

Recommendation 2 We recommend that SWD comply with all county code requirements on future capital projects, including those applicable to mandatory phased appropriation and LEED.

**Assessment of
Alternative
Project Delivery
Methods**

In response to the 2011 performance audit, SWD agreed to conduct a comparative analysis of the alternative construction delivery methods available for the Factoria project. SWD submitted this analysis to the County Council as part of a request to use alternative procurement under RCW 36.58.090 for solid waste handling facilities to select the contractor for the Factoria RTS. SWD's analysis did not provide a full assessment of all alternative delivery methods. To avoid delaying project implementation, the County Council adopted two ordinances in October 2012:

- Ordinance 17435, authorizing alternative procurement for the Factoria RTS project; and
- Ordinance 17437, requiring SWD to provide a complete review of alternative delivery methods, including public-private partnerships, before proceeding with site selection or facility design for all future recycling and transfer station projects.

4. Plans for Continued Oversight

Section Summary

The Auditor's Office will continue monitoring the Factoria RTS project in 2013. We plan to thoroughly review the baseline document and the LEED cost assessment. We will also track SWD's final design effort and alternative procurement process, and focus on their efforts to lower costs and manage schedule risk. We will issue additional reports at significant project milestones or developments of interest to the County Council.

Acknowledgements

We appreciate the collaborative efforts of SWD, Council Municipal Staff and Council Policy Staff in providing for effective oversight of the Factoria Recycling and Transfer Station project consistent with Council intent.

Appendix

Factoria Recycling and Transfer Station Square Footage (SF) Details

Functional Area	Facilities Master Plan (Nov 2010)	Preliminary Design (Apr 2011)	Baseline (Dec 2012)
Transfer Building Tipping Floor	51,000 sf	57,000 sf	52,900 sf
Transfer Building Lower Level	27,500 sf	33,000 sf	17,700 sf
Administration Building	5,200 sf	8,600 sf	4,600 sf
Household Hazardous Waste Building	4,800 sf	4,800 sf	4,800 sf
Total	88,500 sf	103,400 sf	80,000 sf