



Factoria Recycling and Transfer Station Project Is Currently on Track

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Executive Summary

Construction of the new Factoria Recycling and Transfer Station is on schedule and the Solid Waste Division forecasts finishing it within the \$93.6 million appropriated for the project. The division could enhance visibility into project spending by adding information on contingency and contract allowance usage to the quarterly construction reports provided to the County Council.

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Factoria Recycling and Transfer Station Project Is Currently on Track

Report Highlights

June 9, 2015

Project Status

The Factoria Recycling and Transfer Station (Factoria RTS) project to build an 80,000 square foot solid waste facility replacing the existing station is proceeding well, and risks are currently under control. Presently under construction, Factoria RTS was selected to be a mandatory phased appropriation project in 2010. The Solid Waste Division (SWD) is using it to pilot baseline and earned value management procedures for its capital program.

● Scope

There have been no additional scope changes since the four revisions approved by the County Council in 2014 by Ordinance 17832.

● Schedule

Construction began two months later than the baseline target date, but SWD is forecasting the facility will open on schedule. They expect to open the new transfer station building to the public by March 2016 and the household hazardous waste building by November 2017.

● Budget

There have been no changes in the estimated cost of Factoria RTS since Ordinance 17832 increased the appropriations to \$93.6 million to cover the forecast total. The estimated cost at completion is approximately \$4.8 million higher than the baseline cost estimate, including the scope revisions approved in 2014.

● Risk

SWD is following best practices in risk management and all identified risks are currently under control. We are continuing to monitor risks relating to water handling and earthwork during construction and the potential for scope changes resulting from an upcoming transfer station system update.

Recommendation

We make a new recommendation to improve the information available on Factoria RTS project costs in the quarterly construction reporting provided to the County Council.



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I. Scope, Schedule, and Cost Forecast

Section Summary

The Factoria Recycling and Transfer Station (Factoria RTS) project is in the construction phase, with good progress made. Ordinance 17832 approved in 2014 by the County Council (Council) made four scope changes. Including these scope changes, the project cost will exceed the baseline budget, but the Solid Waste Division (SWD) forecasts finishing Factoria RTS within the \$93.6 million in appropriations approved by Council. There was a delay starting construction, but SWD forecasts meeting the baseline schedule for opening the replacement station to the public.

Scope changes made to meet project needs

Council approved four scope changes to Factoria RTS after the baseline scope was set and since our last report. Ordinance 17832,¹ authorized making the following changes to the project scope:

- adding a second waste compactor as recommended in the 2014 Solid Waste Transfer and Waste Management Plan review
- upgrading an existing sewer line and restoring 2,100 linear feet of roadway to meet City of Bellevue requirements
- redesigning the new facility roof and adding fire booster pumps to meet insurance provider requirements
- paying wetland mitigation fees to the Army Corps of Engineers in lieu of mitigating wetlands at the facility site.

Schedule forecast matches the baseline schedule

SWD forecasts meeting the baseline schedule even though construction started five months late. Construction started two months later than planned due to delay awarding the contract. Despite this delay, SWD is forecasting they will be able to meet the baseline schedule for opening the new facility to the public.

To maintain existing services during construction, household hazardous waste (HHW) will be temporarily located in the new transfer station building from March 2016 to November 2017 while construction of the new HHW building is underway. SWD will add the new recycling service planned for Factoria RTS after the HHW service moves into its new building.

Exhibit A: SWD forecasts meeting baseline schedule.

Milestone	Baseline Schedule ¹	Current Forecast [Actual]	Ahead (Behind) ²
Construction Start – Notice to Proceed	May 2, 2014	[July 11, 2014] ²	(2 months)
New Transfer Station Building Opens	March 2016	March 2016 ³	-
New Household Hazardous Waste Building Opens	November 2017	November 2017 ³	-
Recycling Services Begin in Transfer Station Building	November 2017	November 2017	-

Source: 1 – SWD Baseline Report (12/20/2012); 2 – SWD Notice to Proceed (7/9/2014); 3 – Auditor's Office analysis.

¹ June 20, 2014.

I. Scope, Schedule, and Cost Forecast

Total project cost will exceed the baseline budget

The current cost estimate is approximately \$4.8 million higher than the baseline budget, but SWD expects to finish the project within the \$93.6 million appropriated by Council. Since our last report in 2013, Council approved Ordinance 17832 increasing the appropriation for Factoria RTS from \$84 million to \$93.6 million. SWD expects to finish the project within the current appropriation. The current estimate for Factoria RTS is approximately \$4.8 million higher than the baseline budget established in 2012, predominately because of the scope changes described on the previous page. Through April 2015, the project has expended approximately 36 percent of the current cost estimate.

SWD told us that some of the life-to-date expenditures shown below are not assigned to the correct phase. We will be monitoring the division's efforts to correct this since the accurate recording of expenditures by phase is important to understanding the performance of the alternative delivery method used for this project.

Exhibit B: The estimated total cost of the project currently exceeds the baseline budget.

Phase	2012 Baseline Budget (A) ^[1]	Current Cost Estimate at Completion (B) ^[2]	Increase (Savings) Over Baseline Budget (A – B) ^[3]	Current Reported Life-to-Date Expenditures ^[4]
Planning	\$400,583	\$400,583	\$0	\$106,992
Preliminary Design	\$3,149,617	\$3,149,619	\$2	\$373,176
Final Design	\$12,061,500	\$10,777,009	(\$1,284,491)	\$12,276,155
Implementation	\$62,538,397	\$71,009,279	\$8,470,882	\$13,157,013
Closeout	\$2,586,986	\$200,000	(\$2,386,986)	\$0
Acquisition	\$8,082,752	\$8,082,753	\$1	\$8,083,032
Total	\$88,819,835	\$93,619,241	\$4,799,406	\$33,996,368

Source: 1– SWD Factoria RTS Baseline Report (December 2012); 2 – SWD Earned Value Management Report (March 2015); 3 – The differences shown between SWD's baseline budget and current cost estimate at completion for the Preliminary Design and Acquisition phases are due to rounding; 4 – EBS Finance System (April 2015).

2. Management of Uncertainty and Risk

Section Summary

SWD's process for managing project uncertainty and risk follows best practice. The division is using best practice approaches, including establishing a risk register, contingency, and construction allowances to identify, control, and budget for risks that SWD has identified. All identified risks are currently under control.

Project risks are under control

SWD's risk register is comprehensive, quantifying the impact of potential risks and providing plans to manage them. All 57 risks identified as having the potential to impact the project scope, schedule, and budget are currently under control.

At our suggestion, SWD agreed to add Motion 14145 to the risk register.² This is important in case the report due from SWD on managing transactions and increasing the use of underutilized transfer stations results in the need to make design revisions affecting construction of the Factoria RTS project.

We continue to monitor and recommend that SWD report on two areas of risk where there is potential that site conditions could increase the county's construction cost. The first risk is that the cost for dewatering the site for construction exceeds the \$250,000 allowance provided in the construction contract. The second risk is that none of the soil excavated to construct Factoria RTS is suitable for reuse, which has been the case thus far during construction. Correcting this requires hauling the unsuitable soil offsite and replacing it with suitable purchased fill material. SWD estimates the maximum cost impact to the county for unsuitable soils is approximately \$152,000. Both risks will cause cost uncertainty until the contractor finishes construction of a 34-foot-high retaining wall needed to provide a level area for the household hazardous waste building.

Budget allowances cover likely risks

SWD's contingency and construction allowances are adequate given the identified risks for the project. SWD's current forecast includes approximately \$5.4 million remaining contingency. Additionally, the forecast includes \$795,000 in allowances provided in the construction contract to control the county's risk for specified costs that could change during construction, including fuel prices, unidentified site conditions, and additional signage requirements.³ Any unspent contingency or contract

² Motion 14145 requires SWD to prepare a final report in collaboration with stakeholders, by June 30, 2015 on strategies to manage transactions at transfer stations and operational and capital strategies to increase the use of underutilized transfer stations. It was enacted June 10, 2014.

³ Seven allowances are provided, including: Dangerous Waste and Hazardous Materials (\$100,000); Fuel Price Adjustment (\$100,000); Protection of Deposits of Historical or Archeological Interest (\$20,000); Transition Period Adjustment (\$25,000); Steel Price Adjustment (\$200,000); Additional Dewatering (\$250,000); and Additional Signage (\$100,000).

2. Management of Uncertainty and Risk

allowances remaining when the project is finished will represent a cost savings to the county. SWD could provide better visibility into project spending by documenting contingency and contract allowance use for staff outside the agency.

Recommendation 4⁴

The Solid Waste Division should include a summary of the contingency and contract allowance use for the Factoria Recycling and Transfer Station Project in the mandated quarterly construction reports to the County Council.

⁴ The February 5, 2013 and June 13, 2013 Auditor's Office reports on Factoria RTS included three prior recommendations. See Appendix 1 for the implementation status of these recommendations.

3. Compliance to Project Management Requirements

Section Summary

After early struggles, SWD is currently complying with the county's project management requirements for Factoria RTS. The division was late meeting the county's timeframes for setting the project baseline and conducting LEED analysis during the design phase. SWD was also unable to fully implement the earned value management (EVM) process it was seeking for Factoria until after construction began. SWD has used Factoria RTS to help establish standard processes for baselining capital projects and conducting EVM that could benefit the division's future projects.

SWD was late meeting project management requirements

SWD struggled to meet timeframes required by executive policy and King County Code for project management elements on Factoria RTS. After determining SWD was late meeting the county's requirements for setting the baseline and conducting Leadership in Energy and Environmental Design (LEED) analysis for Factoria RTS, our February 2013 oversight report recommended complying with all requirements for capital projects, including those applicable to mandatory phased appropriation (MPA) projects.⁵ Since then, SWD used Factoria RTS to help establish a standard process for meeting the county's EVM requirement for MPA projects. EVM is a project management technique used to help provide early identification of schedule and cost problems. MPA projects are required to update EVM analysis at least monthly throughout the design and implementation phases. As required by code, SWD began working on an effort to establish a standard EVM process while Factoria RTS was in the design phase, but was not satisfied with its consultant's effort to integrate the project work then underway by the division's consultants and staff. As a result, SWD relied instead on monthly schedule and cost forecasts to monitor project performance. After selecting the construction contractor, SWD embarked on a new effort to establish a standard EVM process for the whole project integrating the work of the construction contractor, SWD's consultants, and staff. The division published an EVM report they were satisfied with in March 2015. SWD is now updating its EVM analysis for the project monthly as required by code.

New processes could benefit future projects

The baseline and EVM processes and reports SWD established using Factoria RTS are comprehensive and incorporate best practice standards. If followed, they can serve as a model and benefit SWD's management of future capital projects.

⁵ Factoria RTS was determined to be a mandatory phased appropriation project in 2010, making it subject to specific project management requirements found in KCC 4A.130.

3. Compliance to Project Management Requirements

Conclusion

Construction of Factoria RTS is proceeding on plan. The Auditor's Office will monitor the project by reviewing SWD's quarterly construction reports and making periodic inquiries to identify if risks are increasing. We will also monitor SWD's assessment of the need for scope changes to the project based on the transfer network plan update. Additionally, we will monitor SWD's assessment of alternative contracting methods for future transfer station projects in light of the outcomes of the Factoria RTS project.

Appendix I

Implementation Status as of May 2015

This table reports on the status of implementation of recommendations from previous oversight reports on the Factoria RTS Recycling and Transfer Station project.

#	Status	Recommendation	Status Detail
February 5, 2013 Report			
1	DONE	We encourage Solid Waste Division to obtain a review by Facilities Management Division of the design of the administration building to evaluate if staff areas align with the County's space standards and identify potential cost savings.	As recommended in our February 5, 2013 oversight report, SWD consulted with FMD on this topic. FMD's review confirmed the staff areas aligned with county space standards and did not result in savings.
2	OPEN	We recommend that Solid Waste Division comply with all county code requirements on future capital projects, including those applicable to mandatory phased appropriation and LEED.	As reported in our February 5, 2013 oversight report, SWD did not set the baseline for the Factoria RTS project until six months after required by code. SWD also struggled to establish its earned value management (EVM) process during the design phase as required. Once construction was underway, SWD complied with monthly EVM analysis beginning in March 2015. We will monitor if SWD begins earned value reporting for the design phase on its other two MPA projects: South County RTS and North County RTS.
June 13, 2013 Report			
3	DONE	Solid Waste Division should work to accelerate the contractor selection process and award the construction contract as early as possible in 2014. Solid Waste Division should also continue to consider early warehouse structure removal as recommended in the risk register.	SWD undertook actions to accelerate the contractor selection process where possible. SWD evaluated but chose not to remove the warehouses early, in advance of the major construction contract.

Status definitions:

DONE	2	Recommendations have been fully implemented Auditor will no longer monitor
PROGRESS	1	Recommendations are in progress or partially implemented Auditor will continue to monitor
OPEN	0	Recommendations remain unresolved Auditor will continue to monitor