

Oregon Department of Transportation State Radio Project *Legislative Report, February 2013*

Budget and Cost Options

The State Radio Project's current cost estimates forecast a potential \$20 million budget shortfall. To address this issue, project management has developed four cost options for delivering the project. These options range from delivering the project as fully scoped to delivering the project as currently budgeted, with two options in between. The project has analyzed the impacts of each option and will work with the Legislature and other key stakeholders to gain consensus on the selected approach.

WBS Category	Option - 1	Option - 2	Option - 3	Option - 4
Project Management & QA	\$ 15,910,287.00	\$ 15,910,287.00	\$ 15,910,287.00	\$ 15,910,287.00
Narrowbanding	\$ 39,970,068.00	\$ 39,970,068.00	\$ 39,970,068.00	\$ 39,970,068.00
Microwave Modernization	\$ 48,479,605.00	\$ 48,479,605.00	\$ 43,550,805.00	\$ 35,339,220.00
Trunked Radio System	\$ 18,046,022.00	\$ 14,635,836.00	\$ 14,635,836.00	\$ 10,214,436.00
Interoperability	\$ 2,300,000.00	\$ 2,300,000.00	\$ 2,300,000.00	\$ 2,300,000.00
Partnerships (Obligations)	\$ 10,469,802.00	\$ 10,469,802.00	\$ 10,469,802.00	\$ 10,469,802.00
Engineering & Planning	\$ 33,704,928.00	\$ 33,704,928.00	\$ 33,704,928.00	\$ 30,083,543.00
End System Testing	\$ 200,000.00	\$ 200,000.00	\$ 200,000.00	\$ 200,000.00
Contingency	\$ 10,000,000.00	\$ 10,000,000.00	\$ 10,000,000.00	\$ 10,000,000.00
OWIN	\$ 49,256,733.00	\$ 49,256,733.00	\$ 49,256,733.00	\$ 49,256,733.00
Treasury Loan	\$ 6,247,831.00	\$ 6,247,831.00	\$ 6,247,831.00	\$ 6,247,831.00
Harris Discount Loss				\$ 5,000,000.00
Total Est. Expenditures	\$234,585,276.00	\$231,175,090.00	\$226,246,290.00	\$214,991,920.00
SRP Budget Difference	\$ (24,593,356.00)	\$ (21,183,170.00)	\$ (16,254,370.00)	\$ (5,000,000.00)

The four cost options the project has developed are as follows:

Option 1

- Delivers the full scope of the project.
- Estimated budget shortfall is \$24 million.
- Includes contingency of \$10 million.

Option 2

- Reduces the area of trunked radio coverage by not purchasing trunked radio equipment in Eugene and The Dalles.
- Installs and constructs the associated microwave and site improvements, allowing for future expansion of the trunked radio system in these areas.
- Estimated budget shortfall is \$21 million.
- Includes contingency of \$10 million.

Option 3

- Makes the same reductions in trunked radio coverage as Option 2.
- Does not make the associated microwave and site improvements necessary to support trunked radio operations in Eugene and The Dalles.
- By not planning for future expansion, the existing equipment would become obsolete and would need to be replaced if and when the trunked radio system is expanded.
- Estimated budget shortfall is \$16 million.
- Includes contingency of \$10 million.

Option 4

- Makes the same reductions in trunked radio coverage as Option 3.
- Expands the reductions of Option 2 and 3 to include Portland and Bend.
- Does not make the associated microwave and site improvements necessary to support trunked radio operations in Eugene, The Dalles, Portland and Bend.
- Places the state's spectrum licenses in the 700 MHz range at risk of loss in 2015 due to lack of deployment of a trunked radio system.
- Fails to address system radio traffic congestion and signal interference issues due to the lack of deployment of a trunked radio system.
- Limits the ability to develop greater interoperability with other trunked radio systems being developed within the state.
- Reduces site improvements by \$5 million to compensate for a reduction in a contract incentive that gives the state a 20 percent discount from Harris Corp. on purchases totaling \$50 million or more. The reduction of the contract incentive from 20 percent to 10 percent costs the project \$5 million. These deferred site improvements would likely need to be programmed into the capital portion of the maintenance and operations budget in the next two biennia.
- Delivers the project on budget.
- Includes contingency of \$10 million.
- Estimated budget shortfall of \$5 million.

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Additional Information for Cost Option 1

Original Project Estimate	\$209,991,920
Current Project Estimate	\$234,585,276
Delta	-\$24,593,356

WBS 1.0 — Project Management

Original Estimate	\$10,242,803
Current Estimate	\$15,910,287
Delta	-\$5,667,483

- Management and administration costs for a project of this magnitude were underestimated in the original project budget.
- The compressed schedule relative to the delivery timeframe anticipated by the original schedule required the project to use more project management staff resources. The current estimate for project management services is approximately 35 percent greater than what was anticipated in the project budget implemented in July 2011.
- A significant amount of staff time was required to address lingering issues from the previous OWIN program. Although many program management costs were no longer relevant after the reduction in scope from the OWIN program to the State Radio Project, the work performed was necessary to ensure a smooth transition and to ensure our contracts were congruent with the current scope.
- Internal and third-party quality assurance requirements added an additional \$2.3 million and are included in the \$5.7 million delta.
- The additional 15 percent that was required to be added due to the PERS shortfall added more than \$750,000 and is also included in the \$5.7 million delta.

WBS 2.0 — Narrowbanding

Original Estimate	\$35,570,907
Current Estimate	\$39,970,068
Delta	-\$4,399,161

- Narrowband mountaintop repeater installations are complete; the project exceeded the original estimate in this area by \$2.7 million. The shortfall is attributable to the cost of preparing the repeaters for installation and the cost of installations.
- The deployment of mobile portable and office remote radios incurred additional costs in the amount of \$5.7 million. Additional radios and necessary ancillary equipment such as holsters, chargers and headsets increased costs from \$26.4 million to \$32.1 million.

- Narrowbanding site improvement work was shifted to WBS 3.0. That reassignment and finding efficiencies in this work area reduced the shortfall for WBS 2.0 from \$8.4 million to \$4.4 million.

WBS 3.0 — Microwave Modernization

Original Estimate	\$51,662,151
Current Estimate	\$48,479,605
Delta	+3,182,546

- Microwave modernization shows a reduction from the original estimate; this can be attributed to optimizing the site improvement standard, which resulted in a site improvement budget change from \$33 million to \$26 million.
- The \$26 million for site improvements includes narrowbanding site improvement work transferred from WBS 2.0.
- WBS 3.0 also includes an additional \$2.5 million for the Network Management System, as well as training and equipment that will be needed to maintain the more robust system. The \$2.5 million was not included in the original budget.

WBS 4.0 — Trunked Radio System

Original Estimate	\$11,428,008
Current Estimate	\$18,046,022
Delta	-\$6,618,014

The nearly \$7 million estimated shortfall in this area is directly related to underestimating the cost of equipment and installation for trunked radio system repeaters, trunked switches and dispatch consoles. Much of the equipment pricing for these items was unavailable when the budget was developed in 2011.

WBS 5.0 — Interoperability

Original Estimate	\$2,300,000
Current Estimate	\$2,300,000
Delta	\$0

There are no anticipated budget challenges in this area.

WBS 6.0 — Partnerships

Original Estimate	\$10,485,914
Current Estimate	\$10,469,802
Delta	+\$16,112

There are no anticipated budget challenges in this area.

WBS 7.0 — Engineering and Planning

Original Estimate	\$25,176,673
Current Estimate	\$33,704,928
Delta	-\$8,528,255

Similar to project management staffing, engineering and planning is forecasting shortfalls due to the compressed schedule.

- With the project's pressing need to meet partnership obligations and the Federal Communications Commission narrowband requirement, planning and engineering staff have focused on delivering these key priorities. While preliminary microwave and trunked radio designs have been delivered, detailed designs have been delayed due to resource limitations.
- The original estimate did not account for the level of engineering planning and documentation necessary to create auditable records, including environmental issues, permitting, FCC requirements, agreements, leases and other important documentation. These areas received scrutiny from audits performed on the OWIN program, and the radio project exercises due diligence in ensuring this documentation is in order.
- The original estimate anticipated that much of the work would be completed over a five- to 10-year period by existing ODOT/OSP Wireless Section staff, with limited support from outside engineers and technicians. Wireless did not have the resources to deliver the project within the current timeline, however, which required hiring additional staff, primarily consultants. While the consultants bring the necessary expertise to deliver the project, their fully loaded rates are often double those of Wireless staff. The project also added staff to meet the immediate priorities of partnership timelines and the FCC narrowband deadline.
- To support transition of governance of the new system and to support advancing the state's participation in interoperability, the trunked radio and microwave systems need to be completed in a shorter timeframe than originally anticipated. The current staffing level will support deployment of the systems in the next two to three years.

WBS 8.0 — End System Testing

Original Estimate	\$0
Current Estimate	\$200,000
Delta	-\$200,000

End system testing is needed at the conclusion of the project, so it was not included in the original budget.

WBS 9.0 — Contingency, OWIN and Treasury Loan

Original Estimate	\$63,125,463
Current Estimate	\$60,504,564
Delta	+\$2,620,899

- WBS 9.0 contains the project's carryover spending from OWIN, debt service for OWIN's Treasury loan and the project's contingency budget.

- Contingency, \$7.62 million (\$5 million in current forecast).
 - OWIN, \$49.25 million.
 - Treasury loan, \$6.25 million.
- The reduction in cost for WBS 9.0 is due to reducing the project contingency from \$7.62 million to \$5 million.