



KING COUNTY AUDITOR'S OFFICE




APRIL 1, 2021

PSERN Project: Five of Six Recommendations Complete, Minimizing Further Budget and Schedule Risks

The Puget Sound Emergency Regional Network (PSERN) project has made significant progress completing remaining tower sites. Procurement is complete for all 57 original tower development sites and the project team finished permit actions, leases, design, and construction work on 50 of 57 towers; the seven remaining towers are partially complete. Motorola (MSI), the system vendor, should finish the final two towers in its original contract in second quarter 2021, and is on schedule to finish three additional tower locations added to enhance in-building coverage, no later than third quarter 2021. Winter weather impacted five high-elevation county tower sites, but construction should resume this coming summer in time for PSERN to complete these towers with minimal delay to the overall project schedule.

PSERN has adjusted the project budget forecast monthly, incorporating key lessons from its experience with complicated permitting, design, and tower construction. Over the past two years, PSERN has finished construction on 17 tower sites along Highway 2, Interstate 90, and Highway 410. These sites were challenging because the U.S. Forest Service required extensive environmental permitting such as unique design work, sensitive access, long-isolated utility installations, and limited access periods. The PSERN team negotiated and incorporated frequent real-time updates to its integrated schedule and budget. This kept senior stakeholders, fiscal managers, vendors, and contract managers informed. As a result of this careful management, the project team maintained project contingency between \$10 and \$11 million for close to a year. This is important because there are future indeterminate expenses on the project such as the rate stabilization fund, the operator transition and start-up costs, and potential expenses to correct damage to some mountain towers caused by heavy snow in the Cascades this winter.

Of the 12 audit recommendations:

	11 DONE		1 PROGRESS		0 OPEN
Fully implemented Auditor will no longer monitor.		Partially implemented Auditor will continue to monitor.		Remain unresolved Auditor will continue to monitor.	

Please see below for details on the implementation status of these recommendations.



Recommendation 1

On April 1, 2019

DONE



Recommendation 2

On April 1, 2019

DONE



Recommendation 3

DONE



The Puget Sound Emergency Radio Network project team should establish and document a project baseline prior to signing any construction contract. The baseline should use the certainties from the Motorola contract, best available information for tower site costs and schedule, and refined estimates of other costs.

STATUS UPDATE: As of our last report in 2019, the work that remained on this recommendation was to assess the costs and the procurement impacts of the higher elevation tower development sites, which were generally more complex than the sites constructed during the first two years of the project's tower work. Between spring 2019 and winter 2019-2020, PSERN reassessed its cost estimates of 17 higher elevation tower sites not yet bid to construction contractors. Further, the design consultants provided a construction estimate for each of these tower development locations. In essence, via its monthly integrated master schedule updates with MSI, this information allowed PSERN to update baseline schedule and cost information shared with the PSERN Joint Board, King County Department of Information Technology's independent quality control consultant, and the county Auditor's Office.

Concurrent with the baseline updates mentioned above, PSERN staff needed to negotiate vital changes to three important contracts. MSI contracts, design contracts, and construction contracts needed to be adjusted based on site conditions, public land owner demands, or design needs driven by the isolated nature of the mountain tower locations or direct causes of surprises discovered during design due diligence.

IMPACT: By spending the extra effort to refine cost estimates and perform technical due diligence on the higher mountain elevation tower development sites, the PSERN project management team was able to successfully predict the budget and schedule impact of the remaining 17 tower sites, incorporating various procurement contracting needs, without major surprises to its governing interagency board.

Recommendation 4

On May 8, 2018

DONE



Recommendation 5

On May 8, 2018

DONE



Recommendation 6

DONE



The Puget Sound Emergency Radio Network project team should expand its outreach and communications plan to identify detailed, proactive engagement with building owners to allow them time to evaluate their systems and prepare for any needed changes. The complete updates should be presented at the first quarter 2017 PSERN project briefing to the Law and Justice Committee.

STATUS UPDATE: The project developed an external affairs team which began outreach with building owners in 2018. PSERN hired a consultant to help inventory a multitude of stakeholder in-building distributed antenna systems (DAS) within King County. Private and public stakeholders relied on formal and informal notices and technical PSERN information provided by the consultant to determine the effort needed to make their systems compatible with PSERN. The project then conducted many outreach activities including presentations to fire marshals and building owner stakeholder groups. PSERN followed this effort by sending a letter to every building owner with a registered public safety DAS. In September 2020, the project hired a DAS coordinator, whose job it is to work with building owners to further identify PSERN requirements and discuss scheduled operational transition activities and technical details. Via the above efforts, PSERN identified 637 unique building systems which needed to be made operationally compatible with PSERN. The governing committee over PSERN, the joint board, has received and will continue to receive routine updates as to how well this work is progressing. To clarify, it is the building owner's responsibility to make their DAS compatible with PSERN.

IMPACT: By identifying the extent of public and private in-building DAS equipment in King County, which needs to be compatible with PSERN and completing outreach, PSERN has optimized the success of its future radio transmission signals within facilities throughout King County.

Recommendation 7

On May 8, 2018

DONE



Recommendation 8

On May 8, 2018

DONE



Recommendation 9

DONE



The Puget Sound Emergency Radio Network project team should refine the schedule to reflect realistic site development milestone achievement dates and should enter the project baseline schedule into the County's Project Information Center prior to the first quarter 2017 PSERN project briefing to the Law and Justice Committee.

STATUS UPDATE: In March 2018, PSERN uploaded the new baseline schedule into the King County Project Information Center (PIC). The Office of Performance Strategy and Budget (PSB) monitors this informational database. The baselined PSERN schedule extended the original tower completion timeline by 23 months, through August 2019. After creating this initial milestone schedule, PSERN updated its schedule for the 46 tower development sites the County was

responsible to produce. Further, MSI delivered monthly input into the County's integrated master schedule (IMS) for the 11 tower sites MSI was accountable to build. To ensure IMS and PIC reflected realistic milestones, PSERN, through 2019, updated information to adjust for lease and site permit delays which proved common for sites within the greater Seattle area. As such, PSERN had to extend the site development schedule by nearly one year. Additionally, when mountain sites received delayed environmental permits from the U.S. Forest Service, PSERN added another year to the tower development schedule to reflect a realistic third quarter 2020 target completion milestone for all site development construction.

IMPACT: By implementing this recommendation, PSERN maintains and updates an accurate schedule forecast in PIC and keeps its multiagency joint board updated monthly about any schedule deviations. PSB delivers quarterly PIC reports for PSERN to the County Council.

Recommendation 10

DONE



PSERN should update the project schedule to account for all tower site delays after all site development procurement actions are complete including negotiations with Motorola over the new tower locations.

STATUS UPDATE: The PSERN project completed all major tower site procurement actions by July 2020. The larger of these procurement actions involved design of each tower site and procurement of a construction contract to complete development of each site and erect the shelters, generators, fuel tanks, tower structure, and necessary utilities as needed for each location. This process took over three years starting before the summer of 2017. As of February 2021, nine of 11 MSI tower sites are complete with the other two remaining locations nearing completion. Additionally, 41 of the 46 county tower development sites are physically complete while five higher elevation mountain sites have been shut down because of heavy snow in the Cascades and surrounding higher elevations. Several sites are inaccessible with over 10 feet of snow. Two locations that were under construction have experienced damage, requiring more detailed repair investigations once snow and ice levels decrease. Nevertheless, PSERN has adjusted the tower completion milestone schedule to finish all microwave tower development by the end of third quarter 2021. This milestone also includes MSI completion of the three in-building coverage tower sites added to the MSI contract in the Bellevue, Renton, and Seattle areas.

IMPACT: By integrating a complicated set of procurement actions which involved difficult federal permitting, unforeseen mountain site conditions and design challenges, and complex construction techniques, PSERN was able to successfully add three towers to the MSI contract for improving in-building coverage which met all operational stakeholder expectations.

Recommendation 11

DONE



PSERN should provide King County Council a financing plan that documents the ability to fund infrastructure and equipment needed to achieve in-building coverage goals. PSERN should submit this plan to Council prior to requesting appropriations beyond the original \$273 million levy approval.

STATUS UPDATE: PSERN completed negotiations with MSI in July 2019 to add three new tower locations to the MSI contract for in-building coverage improvements within the overall design layout of 57 microwave towers across King County. Shortly thereafter, PSERN submitted an appropriations request for \$82,521,790, which was included in the County Executive's 2019 second omnibus budget package. The County Council approved this appropriations request via Ordinance 19021 on December 4, 2019, bringing the total capital funds available for the PSERN project to \$261,036,995. PSERN made it very clear in the capital appropriation proposal, submitted with the budget request, that the project team expected to complete all tower sites within this total supplemental appropriations request. Although, as of February 2021, the estimated total project cost at completion now rests at \$288 million with \$10.4 million of available contingency. Any amounts needed above the current appropriation amount will be subject to a future appropriation request for the final phases of the project which involve transition to an operator and funding of a rate stabilization fund to assist all user agencies with a three year transition to PSERN's new pricing structure.

IMPACT: PSERN has met Recommendation 11 and by doing so has kept Council apprised to how its leadership team, the governing joint board, and the County Executive have managed to restrict the scope of the project for enhancing in-building coverage within budget constraints.

Recommendation 12

PROGRESS



PSERN should revise its project budget after all tower site construction is substantially complete and ready for Motorola equipment installation.

STATUS UPDATE: As of the February 25, 2021 PSERN Joint Board meeting, 50 out of 57 tower development sites have been completed and, of the remaining seven, all are under construction and should be complete by third quarter 2021. Further, the three new sites added for in-building coverage will be finished to include MSI microwave equipment installation by August 2021. PSERN has completed all procurement actions for every development site and the project team expects minimal additional price changes. Some small budget risks, however, do remain due to the severe winter storms experienced this year at mountain tower sites. Damage occurred to two high-elevation tower locations and PSERN will need to determine if the County is liable for any repair costs.

Fortunately, as presented at the February joint board, PSERN still predicts an approximate \$10.4 million positive fund balance when the total PSERN project finishes in 2023, based on current levy revenues. This projection is based on the project's savings in other areas since PSERN will be ramping down staffing as site construction winds down later this year.

WHAT REMAINS: In the summer of 2021, when PSERN assesses the two mountain tower sites for repair work, completion, and schedule impact, the joint board will also finish decisions on the operator expense, the rate stabilization fund, and associated policy decisions.

Michael Bowers conducted this review. If you have any questions or would like more information, please contact the King County Auditor's Office at KCAO@KingCounty.gov or 206-477-1033.