

Washington State Patrol ESD Decision Packages  
Executive Summary for SIEC/SAW  
August 20, 2020

**1. C3 – Mobile and Portable Radio Standardized Technology Replacement (Policy-level):** Washington State Patrol troopers, commercial vehicle enforcement officers, investigators, and detectives use mobile and portable land mobile radios (LMR) to communicate statewide. 98% of WSP’s mobile and portable fleet has aged beyond the seven (7) year useful life (according to Chapter 30 SAAM). Furthermore, WSP’s current radio models are no longer supported by the vendor after December 31, 2023. WSP is requesting debt service funding of \$3.4 million in 21-23, and \$6.7 million in 23-25, and 25-27 in order to replace 2,636 mobile and portable radios during the 22 – 23 biennium. WSP intends to procure the next generation of Motorola APX-series radios, the APX-8000 (portable) and APX-8500 (mobile).

- 97% of radios were purchased between 2009 – 2016; 95% of those were in 2012-13 during narrow-banding project.
- Fielding a competitor radio would require potential “re-engineering” within the system, organizational change/business process change due to differences in the “value added” features like alia and man-down functionality.
- WSP receives \$96,000 of STR funding currently; average cost of APX-8xxx series radios is \$7650. Currently funding level is insufficient.

**2. A2 – Land Mobile Radio System Upgrade Program (Maintenance-level):** WSP received funding in the 2019-21 biennium to enter into an upgrade agreement for the WSP LMR core. This maintenance-level request is for \$1.3 million of continued funding per biennium to maintain the system upgrade agreement through the full term of six-years (2026). This system upgrade agreement enables WSP to complete three full system version upgrades on the LMR core and NICE audio logging systems. The network core and logging system will remain under vendor support and be functional through at least 2031 under the upgrade program.

- WSP and DOJ have invested over \$63 million combined into the WSP LMR system, \$5 million of that in 2018-20 to upgrade the core, separate the systems, and implement an ISSI connection between the systems.
- WSP will receive three full upgrades under the upgrade agreement at a cost of \$3.96 million; this is nearly 50% less than completing one-time upgrades (\$7.6 million).
- Should WSP not receive ongoing funding, and the agency must end the agreement, WSP would be billed the amount of discount realized under this agreement, estimated at \$340,975 in FY22.

**3. A3 – Communications Infrastructure Maintenance (Maintenance-level):** WSP received funding in the 2019-21 biennium in order to replace aging digital and analog microwave radios, Quantar base station radios, and associated equipment. Due to I-976 and COVID-19, implementation was delayed by a year and WSP had to apply a greater percentage of funding during the 2019-21 biennium to address site batteries that were failing throughout the state. This maintenance-level request is for \$2.96 million of funding to continue replacement of the microwave and LMR radios, as well as to complete replacements of failing site batteries.

- WSP has 210 VHF base station and repeater radios that need replacement. These base stations provide primary area coverage for WSP districts as well as statewide interoperability on State Common, LERN, and VLAW31 (previously known as NLEC).
- WSP has over 130 microwave radios that require replacement/upgrade to the new standard radio the Microwave Packet Radio (MPR-9500). This enables WSP to reduce reliance on legacy equipment such as channel banks/multiplexers, as well as ensures radios are within the equipment's usable life.
- Of WSP's 92 primary communication sites, the site battery systems at 64 (70%) sites are below functional capacity and/or at end of life. WSP will replace site batteries at up to 40 sites during FY21 and will replace the remaining 52 sites during 22-23.
- WSP intends to request continued funding to replace site batteries at 25% of sites each biennium thereafter.

**4. C4 – Land Mobile Radio (LMR) System Strategic Plan (Policy-level):** At the direction of the legislature, WSP completed a radio coverage assessment and engineering study of the WSP LMR system in 2018. This proposal seeks funding to engage an engineering firm in order to incorporate recommendations and observations from the engineering study and develop a long-term (10-12 year) strategic plan for the radio system. Additionally, this proposal will establish a strategy to achieve the minimum radio coverage standards documented in the engineering study and assessment.

- The 2018 engineering study recommended WSP implement a statewide P25 Phase 2 700 MHz radio system augmented by local (county-wide) systems, where able.
- The 2018 engineering study recommended WSP address VHF system improvements in the near term, while working towards a statewide P25 Phase 2 system. Improvements include: additional sites to address coverage gaps, reduce EMI noise in patrol vehicles, revise site parameters (antennae, filters, etc.), and consider changes to modulation and simulcast.
- Guaranteed portable coverage is not financially, and in some cases physically, feasible for a statewide system. New/emerging technologies like LTE back-up for LMR could afford coverage in non-LMR footprint areas.
- WSP is requesting industry-leading expertise to develop this plan in order to ensure it is based on sound standards and industry best practices.