



Puget Sound Emergency Radio Network Background on PSERN Operator End User Rate & Cost Allocation Model

Prepared: April 2020

Purpose:

This document outlines the process for determining the rate and cost allocation model behind proposed monthly charges to agencies for access to and use of the Puget Sound Emergency Radio Network (PSERN) by radios and consoles. This model was adopted by the 12 owner agencies of the current King County Emergency Radio Communications System (KCERCS) through the Implementation Period Interlocal Agreement (IPILA). The IPILA was the instrument used to create the governance for the PSERN Project.

The topics addressed in this document include constraints, assumptions, and specific recommendations for the final rate and cost allocation model that would, if approved by the future PSERN Operator Board of Directors, determine Year 1 operating costs for the PSERN Operator.

Background:

KCERCS is the existing emergency radio communications system supporting E-911 response and other government operations throughout King County. KCERCS is technically a single system that is owned by four different entities and coordinated through a joint board to ensure the system is operating effectively countywide. The four owner entities are:

1. Eastside Public Safety Communications Agency (EPSCA),
2. King County,
3. City of Seattle, and
4. Valley Communications Center (ValleyCom).

Recognizing that equipment comprising KCERCS is over 20 years old and is no longer supported by the system equipment vendor, Motorola Systems, Inc., the owner entities worked on a plan to replace KCERCS. From this planning process, the PSERN Project (via the IPILA) was created and the PSERN Operator (the Operator) was envisioned (via a Memorandum of Agreement that was an attachment to the IPILA). Once the owners determined that a new non-profit governmental agency would be created, staff from the owner entities created a draft budget and a rate and cost allocation model that would fund the future Operator.

The PSERN Project Steering Committee (the Committee) was the predecessor to the PSERN Project's oversight body, the Joint Board. The Committee made early decisions about the PSERN Project and made recommendations to establish the Operator, including development of the Operator's budget and preferred rate model.

The Committee membership was comprised of a representative from each of the four owner entities listed above and a chair (a former King County Deputy Executive). This Committee appointed a staff working group to perform the rate model analysis. Ultimately, the Committee voted to approve the recommendations revealed later in this document.

Analysis Team:

City of Seattle staff led the analytical work on options for the proposed rate and cost allocation formula to fund the PSERN Operator budget. The full team consisted of staff from the PSERN Project, the KCERCS system managers, and technical staff from the partner agencies.

Initial Assumptions:

The analysis team laid out initial assumptions that they would follow while working on the rate and cost allocation model. The assumptions are listed below.

- A. The same rate model will apply to all radio/console end users.
- B. Rates should align with biennial budget cycles.
- C. The PSERN system will be upgraded continuously via a support agreement.
- D. The PSERN Operator will own dispatch consoles as a part of the system.
- E. Individual agencies own their radios.
- F. Public safety agencies need to use PSERN. (They have no reasonable alternative if local government personnel want to communicate effectively and transparently countywide.)
- G. Non-public safety agencies can choose not to use PSERN if rates are too high.
- H. Have as many eligible agencies as possible using PSERN (because the higher the number of agencies, the lower the rates and the greater the interoperability with adjacent radio systems).

Constraints Considered:

The following constraints were considered:

- There must be reliable, readily-available data to support the rate model chosen.
- The model must comply with RCW 43.09.210 (the "Accountancy Act"), meaning one service may not subsidize another, nor can one agency subsidize another either directly or indirectly.
- The PSERN Operator must be able to bill individual end user agencies directly.

Rate Model Options:

The purpose of the rate model analysis was to define how radio and console end users would be charged for their usage of the PSERN system. The staff team reviewed five different rate models including concepts such as all users paying the same rate, rates based on usage, rates based on geographic or population size served, and even a combination of the rate models.

Initial Recommendations:

After the above information was analyzed, the partner staff team proposed the following recommendations to the Committee:

1. Use an Unbundled Rate to ensure compliance with the Accountancy Act. An Unbundled Rate means separate rates for each type of PSERN equipment used by an agency – public safety radios, non-public safety (general government) radios, and dispatch consoles.
2. Keep charges as simple as possible – avoid multiple charges for each type of equipment.
3. Have a separate fixed charge for dispatch consoles.
4. Have fixed charges for two categories of subscriber radios – general government and public safety.
5. Do not have charges related to geography or population. (The group found these factors to be imprecise and disputable data as the basis for rates.)
6. Do not charge based on how much each agency uses the system.
7. Use operating costs – not initial capital costs – to determine rates. Use best estimates based on available data for the PSERN Operator’s first year budget, and then actual user data thereafter.
8. Do not charge for radios accessing PSERN that are primarily used on another (disparate) radio system and that are cross-programmed to work on PSERN for the purpose of mutual aid.
9. Determine proportional costs for each of the three equipment rate categories – public safety radios, general government radios, and dispatch consoles.

The rate model ultimately recommended by the partner staff team to the PSERN Project Steering Committee was as follows:

- The PSERN Operator rate model is to be based on the level of labor effort (costs) and vendor costs to maintain the system.
- The PSERN Operator’s Budget will be funded by end users of radios and dispatch consoles. (Historically, there has been no system access charge for consoles.)
- The following formulas were used to determine the radio and console rates that will fund the future PSERN Operator in Year 1 of its network operations:
 - Radio end user contribution =
 - [public safety radio rate * # of public safety radios] + [general government radio rate * # of general government radios] = **78% of PSERN Operator budget**
 - Console contribution =
 - console rate * # of consoles = **22% of PSERN Operator budget**

- **NOTE:** It was assumed that general government radio users need less features for their radios than public safety radios, so their monthly rates should be lower. The general government radio rates were set to be at 78% of the public safety radio rate.

Conclusions and Recommendations:

The analysis team concluded that there are flaws in all the rate setting methods they studied. They also concluded that the recommended rate model should be revised / reaffirmed after the first year of full operations when more concrete data on costs could be obtained by the Operator.

The guidelines and model listed above were approved by the PSERN Project Steering Committee at its October 28, 2014 meeting as the PSERN Operator's proposed Year 1 rates for radio and console end users.

Exhibit A

Cost Allocation Model

For the first year of PSERN System operation, rates to be paid by each User Agency and Dispatch Center will be computed as provided in this Exhibit A. The PSERN System annual operating budget and the number of public safety radios, other radios, and consoles will be known quantities at the time the rates are computed.

Division of Budget Between Radios and Consoles

Percentage of annual budget to be paid with radio user fees = X.

Percentage of annual budget to be paid with console user fees = Y.

$X = [\text{83\% of employee-related costs in the PSERN System annual operating budget} + \text{annual vendor costs for radio-related equipment}] / \text{PSERN System annual operating budget} \times 100.$

$Y = [\text{17\% of employee-related costs in the PSERN System annual operating budget} + \text{annual vendor costs for console-related equipment}] / \text{PSERN System annual operating budget} \times 100.$

Public Safety and Other Radio Rates

X% of the PSERN System annual operating budget will be paid with public safety radio rates and other radio rates combined.

The other radio rate shall be 78% of the public safety radio rate.

$X\% \text{ of PSERN System annual operating budget} = [12 \times \text{the monthly public safety radio rate} \times \text{the number of public safety radios}] + [12 \times \text{the monthly other radio rate} \times \text{the number of other radios}].$

Console Rates

Y% of the PSERN System annual operating budget will be paid with console rates.

$Y\% \text{ of PSERN System annual operating budget} = 12 \times \text{the monthly console rate} \times \text{the number of consoles}.$

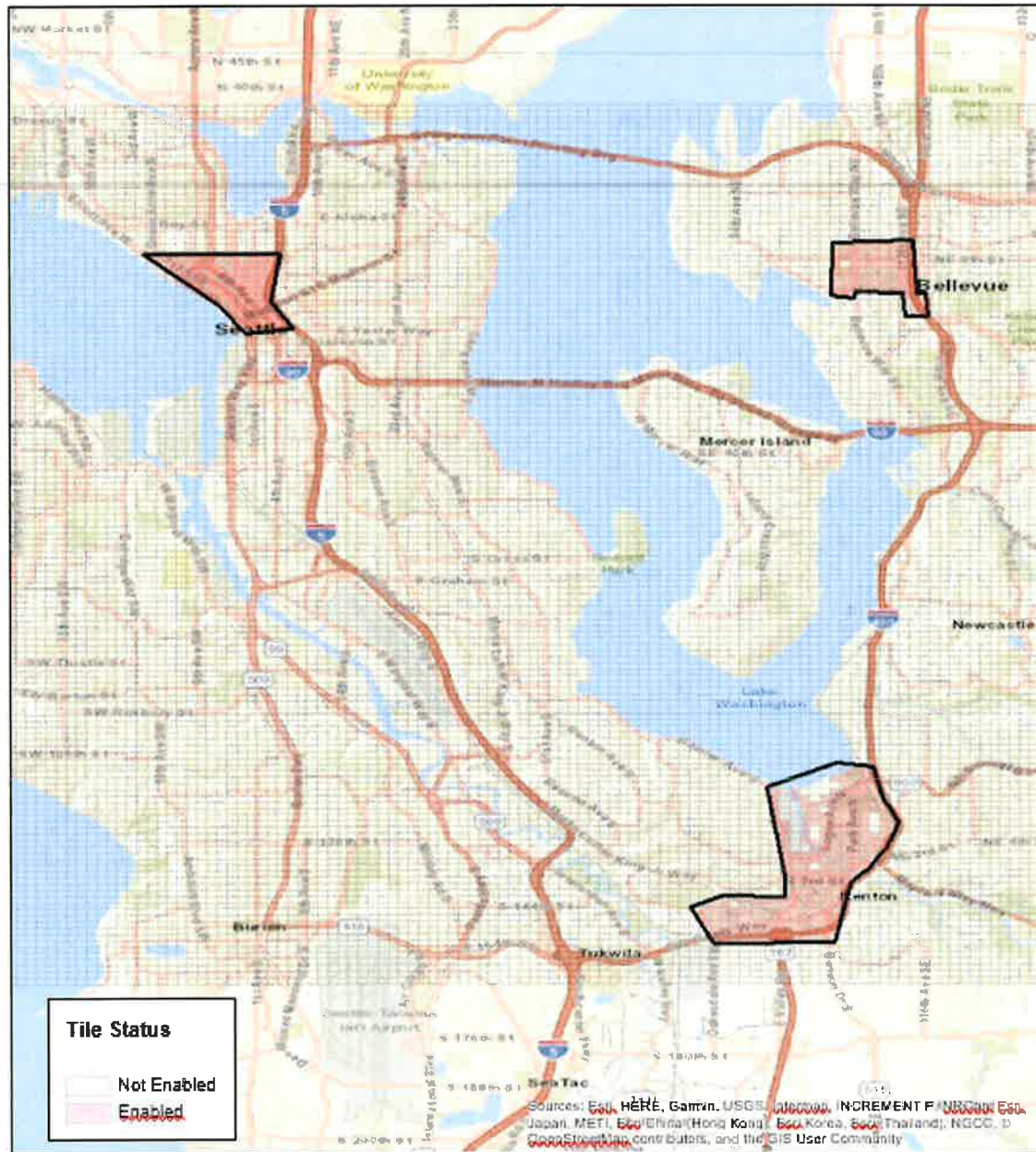
END OF EXHIBIT A.

Exhibit B

Polygon Coverage Areas with Added Signal



Puget Sound Emergency Radio Network
May 17, 2019



0 1 2 Miles
 Portable CATP Grid: 0.1 mile x 0.1 mile
 430 Tiles Enabled (60.1% inside S.A.)
 PSERN 2018
 2018 Baseline
 TBDH48
 TBDH48 ZBK15G3
 Motorola Solutions Confidential/Restricted
 Pricing 7-1