


WHATCOM COUNTY COUNCIL AGENDA BILL

2018-326

NO. _____

CLEARANCES	Initial	Date	Date Received in Council Office	Agenda Date	Assigned to:
Originator:	BB	10/22/18		11/07/18	Intro
Division Head:				11/20/18	Finance Committee; Council
Dept. Head:					
Prosecutor:	KNF	10/26/18			
Purchasing/Budget:	BB	10/26/18			
Executive:	TRFOLG	10/29/18			

TITLE OF DOCUMENT: Ordinance Establishing the Public Safety Radio System Fund and Establishing a Project Based Budget to Replace the Current Public Safety Radio System

ATTACHMENTS: Ordinance and Exhibit A

SEPA review required? () Yes (X) NO	Should Clerk schedule a hearing? () Yes (X) NO
SEPA review completed? () Yes (X) NO	Requested Date:

SUMMARY STATEMENT OR LEGAL NOTICE LANGUAGE: (If this item is an ordinance or requires a public hearing, you must provide the language for use in the required public notice. Be specific and cite RCW or WCC as appropriate. Be clear in explaining the intent of the action.)

Request establishes the Public Safety Radio System Fund and requests a project based budget for Phase I of the Public Safety Radio System project in the amount of \$396,802.

<p>COMMITTEE ACTION:</p> <p>11/20/18: Recommended for adoption</p>	<p>COUNCIL ACTION:</p> <p>11/7/2018: Introduced 7-0</p> <p>11/20/18: Adopted 7-0</p>
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Related County Contract #:	Related File Numbers:	Ordinance or Resolution Number: Ord 2018-073
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PROPOSED BY: Executive
INTRODUCTION DATE: 11/7/18

ORDINANCE NO. 2018-073

**ORDINANCE ESTABLISHING THE PUBLIC SAFETY RADIO SYSTEM FUND AND
ESTABLISHING A PROJECT BASED BUDGET TO REPLACE THE CURRENT PUBLIC
SAFETY RADIO SYSTEM**

WHEREAS, the current public safety radio system is outdated, incompatible with regional partners, has failing infrastructure, and has gaps in communications coverage, and

WHEREAS, the county has a complete system design for a new public safety radio system as a result of the Hatfield Dawson study, and

WHEREAS, it is now necessary to begin implementation of the new system, and

WHEREAS, Phase I of this multi-year, multi-million dollar project includes emergency replacement of failing radio communications on Mount Constitution, and

WHEREAS, this emergency replacement project will include \$396,802 for hardware and installation, and

WHEREAS, funding is available from the Public Utilities Improvement Fund for this phase of the project, and

WHEREAS, Section 6.80 of the Whatcom County Home Rule Charter allows for project-based capital budget appropriation ordinances that lapse when the project has been completed or abandoned or when no expenditure or encumbrance has been made for three (3) years,

NOW, THEREFORE, BE IT ORDAINED by the Whatcom County Council that a new fund is hereby established effective January 1, 2019 titled Public Safety Radio System Fund. This fund shall be used to account for the revenues and expenditures related to replacing the county's current public safety radio system, and

BE IT FURTHER ORDAINED by the Whatcom County Council that the Public Safety Radio System Fund is approved as described in Exhibit A with an initial project budget of \$396,802.

ADOPTED this 20 day of November, 2018.

ATTEST:


Dana Brown-Davis, Council Clerk


WHATCOM COUNTY COUNCIL
WHATCOM COUNTY, WASHINGTON

Rud Browne, Chair of the Council

APPROVED AS TO FORM:


Civil Deputy Prosecutor

Approved Denied


Jack Louws, County Executive

Date: 11/21/18

EXHIBIT A

2019-2020 Budget Preparation - Regular Additional Service Request

Sheriff

Emergency Management

ASR # 2019- 6028

Fund

Cost Center

Originator: John Gargett

Expenditure Type: One-Time

Add'l FTE

Add'l Space

Priority 2

Name of Request: *Whatcom County Integrated Public Safety Network*

Costs:	Object	Object Description	2019 Requested	2019 Approved	2020 Requested	2020 Approved
	7410	Equipment-Capital Outlay	\$396,802	\$396,802	\$0	\$0
	8301.332	Operating Transfer In	\$0	(\$396,802)	\$0	\$0
	Totals		\$396,802	\$0	\$0	\$0

1. Description of Request:

a) Describe the proposed activity or service, and indicate whether it is a higher or lower priority than existing services in your department budget.

Proposed System Design Summary: Whatcom County has performed multiple studies, most recently a System Design Report with Hatfield Dawson that contains a complete system design for the new Public Safety radio system to provide for interoperable communication among all public safety agencies on the local, state, federal and international levels. The system requirements that shape the system design are based on information gathered from all of the agencies that will use the system. The system design also includes a new interconnect system made up of fiber links, leased Ethernet links, and new and existing licensed microwave radio links.

Goals: The Whatcom County Integrated Public Safety Radio System Project goals are to build an improved modern public safety radio system that maximizes public safety services to the public and interoperable communications among public safety agencies on the local, state, federal and international levels, and to be able to upgrade to the anticipated FCC mandates for frequency bandwidth requirements. The proposed system has five main goals:

1. Hire, train and implement a new Communications Coordinator position;
2. Provide interoperable communications with all Public Safety partners and agencies;
3. Ensure Officer and Public Safety;
4. Build infrastructure for the Whatcom County Emergency Operations Center including the All Hazards Alert Broadcast Radio Network (tsunami sirens);
5. Implement an interagency Simulcast radio network.

Rough Order of Magnitude Costs: The Whatcom County Integrated Public Safety Radio System Project 2017 estimated turnkey costs are \$6,023,751 for hardware with lifecycle costs of an additional \$7,000,000 (Spread over 15 years). The lifecycle costs will be borne by local users of the Whatcom County Integrated Public Safety Radio System Project.

b) Who are the primary customers for this service?

Whatcom County Sheriff's Office, Whatcom County Fire Departments and Districts, Whatcom County Public Works Agencies, WhatComm and Prospect, Lummi Nation and Nooksack Tribe.

2. Describe the problem this request addresses and why Whatcom County needs to address it.

Whatcom County's communications backbone has been in use since the mid 1980's and has only minor upgrades since then. The age of the equipment, coupled with technology changes have resulted in a communications system that is both incompatible with regional partners and outdated. Officer and public safety are resulting in serious concerns as there are a number of areas within Whatcom County that are without or do not have adequate/reliable communications coverage.

The infrastructure is already failing, causing both Public Safety and Officer Safety issues, with one example being the Mount Constitution repeater site. It has been failing multiple times in the last several years (over 30 days of lost service since 2016) which causes significant radio communications loss for law enforcement in Point Roberts and along the coast of Whatcom County. The problem is the old analog lines that are failing. The lines have gone down numerous times, and these old analog lines are going away and

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barely supported. What we get today when they fail is a younger generation of Century Link technicians who have most likely never worked on an analog circuit, which is connected through switch equipment they have never seen before, nor do they know how to work on it. And that's all by their own admission from a previous 15 day outage. Will it go down again? Yes. Will it likely be down for an extended period of time? Yes. At some point in the future, will it simply no longer be supported? Yes.

The consequence of losing that connection to Constitution is that dispatch no longer has Whatcom County Sheriff's Office receive audio from that site into their voter system, and they can no longer transmit off that site. They do have the ability to use the repeater at that site if they switch one of their back up radios over to Constitution and use that, but it's problematic since that will cause feedback on their other Whatcom County Sheriff's Office channels if they forget to mute them.

Mount Constitution is the only site that adequately communicates with deputies in Point Roberts. It's also very helpful along the coast where they wind up shadowed from the Sumas site. So while it doesn't fail "regularly" – when it does fail, deputies in certain areas are left without the ability to communicate with WhatComm, and this is a public safety issue as well.

The phone line to Constitution actually terminates at King Mountain, as do the phone line to Kendall and Toad Mountain. From there, they jump on separate circuits and come down to WhatComm. The potential failure that could occur there will take down WhatComm's ability to transmit on any of those three sites.

3. Options

a) What other options have you considered? Why is this the best option?

There are really no other viable options. For Mount Constitution, you cannot order a new analog phone line from Mount Constitution (or a replacement) any longer. Installation of a fiber optic line is estimated to be over \$1,000,000. The solution for Mount Constitution is to build a microwave hop that was specified by Hatfield and Dawson. That would bring the signal into the tower at Post Point, and then on fiber back to dispatch. For reaching to coastal areas of Whatcom County, this will also require the replacement of the microwave link from Post Point to Lummi.

The Whatcom County Sheriff's Office radio system is presently an older analogue based system which operates on two frequency pairs, one ultra high frequency (UHF) bandwidth and the other on very high frequency (VHF) bandwidth as has been the basis of operation since the 80's. The present system has been minimally upgraded since that time. The radio repeater signals are relayed to the WhatComm Dispatch Center through a mix of telephone lines, fiber cable, and some licensed microwave. The majority of signal transmission is via telephone wire (which is seriously outdated). History of the present system:

- Prior to 1989, the system consisted of three main UHF repeaters, and one VHF repeater. All of these repeaters had to be physically selected on their radios for transmission/reception depending on where the user was in the county. On each transmission, the user had to inform dispatch personnel what repeater they were using in order for WhatComm to know which repeater to reply on. All users in the field could not hear specific radio traffic unless they were within range of the active repeater. No ability to use VHF outside of the patrol cars.

- In 1989 a voter receiver system was installed on each of the UHF repeaters which automatically determined what repeater transmitted the strongest signal to WhatComm dispatch. WhatComm voter receiver auto chose what repeater WhatComm used to communicate with the sender. This equipment eliminated, to a degree, the requirement to notify dispatch which repeater was active. This minimally helped other units hear radio traffic when not in close proximity to the transmitting repeater. There was no ability to use VHF handheld radios outside of patrol cars.

- In the 1995 timeframe a booster repeater was installed at the Kendall Elementary School to aid lack of radio coverage in that area. This was minimally successful within a couple miles of the repeater but didn't provide needed full coverage on portable radio. Portable radios upgraded to new Motorola UHF version. Still no ability to use VHF outside of patrol cars and portable radio signals are nonexistent in a large portion of this area which has historically been a higher call load patrol area.

- Between 2007 and 2009 the Whatcom County Sheriff's Office replaced UHF/VHF repeaters to be

2019-2020 Budget Preparation - Regular Additional Service Request

Sheriff

Emergency Management

ASR # 2019-6028

Fund

Cost Center

Originator: John Gargett

compliant with FCC narrow bandwidth capability. Whatcom County Sheriff's Office replaced all vehicles equipped with mobile UHF and VHF radios with radio equipment that complied with narrow bandwidth operation under the FCC mandate.

- Between 2008 and 2011 the Whatcom County Sheriff's Office received regional federal grant funding to improve interoperable communications. As a result, three cross frequency repeaters were installed at three locations: Sumas Mtn., Galbraith Mtn., and United States Customs and Border Protection Headquarters in Blaine. These repeaters allow units on disparate radio frequency bandwidths (UHF, VHF) to communicate with each other.

- Between 2008 and 2016, The Whatcom County Sheriff's Office purchased multi-band, analogue/digitally capable portable radios, from federal grant monies, for a portion of personnel. The purchase of these assets directly supports the radio design study recommendations of the 2009 and now currently updated design study. Patrol vehicle mobile radios are being upgraded to digital/analogue capable radios as new patrol vehicles are cycled into the fleet.

- In 2009 the Federal Communications Commission mandated that public safety radio band width be reduced from a 24 MHz spread between frequencies to 12.5 MHz frequency spread in an attempt to open up more of that bandwidth for additional radio frequency licensing. This had a major impact on the coverage area of our public safety radio system used by deputies. It shrank the coverage areas resulting in worsened reception and transmission. Whatcom County is already hampered by geographical obstructions that make communications a challenge, therefore increasing the lack of officer safety in areas that already had previous issues with coverage. Reduction in bandwidth further exacerbated the lack of coverage.

- The other issue is the inability to have frequencies available along the Canadian border that do not interfere with each other. Whatcom is limited by the power output of our frequencies for the same reasons. Therefore, a much needed analysis and radio improvement radio design was needed.

- In 2009 a joint radio design study was awarded to Hatfield Dawson that was funded 50% by The City of Bellingham (BFD) and 50% by Whatcom County (WCSO). From this study Hatfield and Dawson delivered a three phased solution for County WCSO radio communication system improvement. Part of the then design study required Multiband portables and mobile radios as well as cross frequency (cross-band) repeaters, among other requirements for build out. The system cost was estimated at \$12M.

- In 2009 Whatcom County received federal funding, (Public Safety Interoperable Communications, PSIC) directed to Counties in Region one to enhance or develop interoperable communication systems capable of interconnecting with other surrounding counties. Whatcom received approximately \$600K. Whatcom used this funding, in part, to the Cross-Band radio repeater sites at three locations: United States Customs and Border Protection (USCBP) Headquarters and Communication center located in Blaine, Sumas WSP tower, Sumas Mountain, and the USCBP tower on Galbraith Mountain. The resulting infrastructure was connected to WSP at Galbraith for signal connection to Skagit and south on the WSP microwave system I-5 corridor. Project finally completed in 2012. Microwave IP system is maintained by WSP.

- In 2015 WCSO received 6 UHF radio repeaters from Island County that they had replaced with digitally capable repeaters for their public safety communications network. Two of those repeaters were installed at a radio site on Lummi Island that was developed by City of Bellingham Fire. Whatcom County Sheriff's Office installed a microwave link to WhatComm from that location that was superior to the telephone lines that the Bellingham Fire Department had installed. An agreement was developed that if Bellingham Fire Department was allowed to use the new microwave connection to WhatComm that Whatcom County Sheriff's Office installed, Bellingham Fire Department would not charge the County any site rent.

- The Lummi Island site improves and enables radio reception/transmission along Chuckanut Drive when reception/transmission in this area was very weak or nonexistent. This site development cost \$36K.

- In 2016 and 2017 \$45K was directed to Whatcom County Sheriff's Office by the County Executive to fund an update to the 2009 county wide radio design study. Hatfield and Dawson was identified and recruited to provide the consulting work which was completed in December of 2017.

b) What are the specific cost savings? (Quantify)

This is an expenditure, and therefore there are no cost savings.

4. Outcomes / Objectives

a) What outcomes will be delivered and when?

The primary objective of the system design shown in this report is to provide good radio and interoperability coverage over all of the portions of the County.

Friday, October 26, 2018

Rpt: Rpt ASR Regular Req/Approv

2019-2020 Budget Preparation - Regular Additional Service Request

Sheriff

Emergency Management

ASR # 2019- 6028

Fund

Cost Center

Originator: John Gargett

For Mount Constitution the outcome will be stable radio communications for the Whatcom County Sheriff's Office and EMS from Lummi to Point Roberts using the Hatfield and Dawson 2017 design. This should be completed within the first 6 months of 2019 subject to the start date and award of a bid for the work.

New radio channels that are available for "shared use" by Whatcom County agencies that can be used to provide additional capacity for both Law Enforcement and Fire/EMS systems in the County will be implemented.

An additional objective is to provide one or more additional repeated channels for both Law Enforcement and Fire/EMS that can be used as tactical channels.

New radio coverage will be provided in areas currently without coverage, including much of the East county, Newhalem, Baker Lake, and Mt. Baker Highway.

It is anticipated that once the project begins, it will take up to five years to completely implement this system.

b) How will you know whether the outcomes happened?

Whatcom County will have a simulcast system which covers all areas of Whatcom County with radio coverage to the extent possible, thereby increasing safety for the public and fire/law enforcement communities.

5. Other Departments/Agencies

a) Will this ASR impact other departments or agencies? If so, please identify the departments and/or agencies impacted and explain what the impact(s) will be.

This project overall will impact multiple fire districts, the Sheriff's Office and Bellingham Radio Shop at Public Works. In addition to the Sheriff's Office having to reprogram the radios, Fire will also have to reprogram their radios and the Bellingham Radio Shop will be heavily involved with the installation and reprogramming. There should not be any significant impact to other departments or agencies, although it will require staff time to manage communications changes to the Simulcast system. There may be some departments, special districts, and other agencies who will integrate their radio systems into the new Whatcom County Integrated Public Safety Network and they will need to provide personnel time for meetings and coordination of systems.

b) If another department or agency is responsible for part of the implementation, name the person in charge of implementation and what they are responsible for.

Aside from the Radio System Manager the other agency that will be impacted is the City of Bellingham Communications team. Bill Hanes, Communications Manager, for the City of Bellingham Public Works Operations will be in charge of the implementation for their part as he is responsible for all public radios and heavily supports the Sheriff's Office for communications. He will be ensuring that the facilities needed in the City of Bellingham are available and that necessary activities are carried out.

6. What is the funding source for this request?

This project will begin with the hiring of a Radio System Manager in the Whatcom County Sheriff's Office Division of Emergency Management (ASR 2019-6023) who will develop a detailed project budget. The total estimated cost for this capital project is \$6,023,751 (\$3,460,751 for the backbone, \$463,000 for hardware for the Whatcom Unified Emergency Coordination Center, and \$2,100,000 for Fire/EMS upgrades). It is anticipated that the \$3,923,751 for the backbone and the Emergency Coordination Center will come from as yet unidentified grants or funding sources and the \$2,100,000 for Fire/EMS upgrades will come from grants to the Fire Service. The annual recurring maintenance costs are estimated at \$460,860 and will come from user agency use fees.

Phase I of project implementation will be the emergency replacement of failing radio communications on Mount Constitution. Total estimated capital cost for this emergency replacement project is \$396,802 for the hardware and installation. This has not been budgeted for outside the project but will need to be funded. There may be some funding support for this phase of the project from NW LEARN and the Fire Service.