



**SCAPPOOSE**  
*Oregon*

# WELCOME

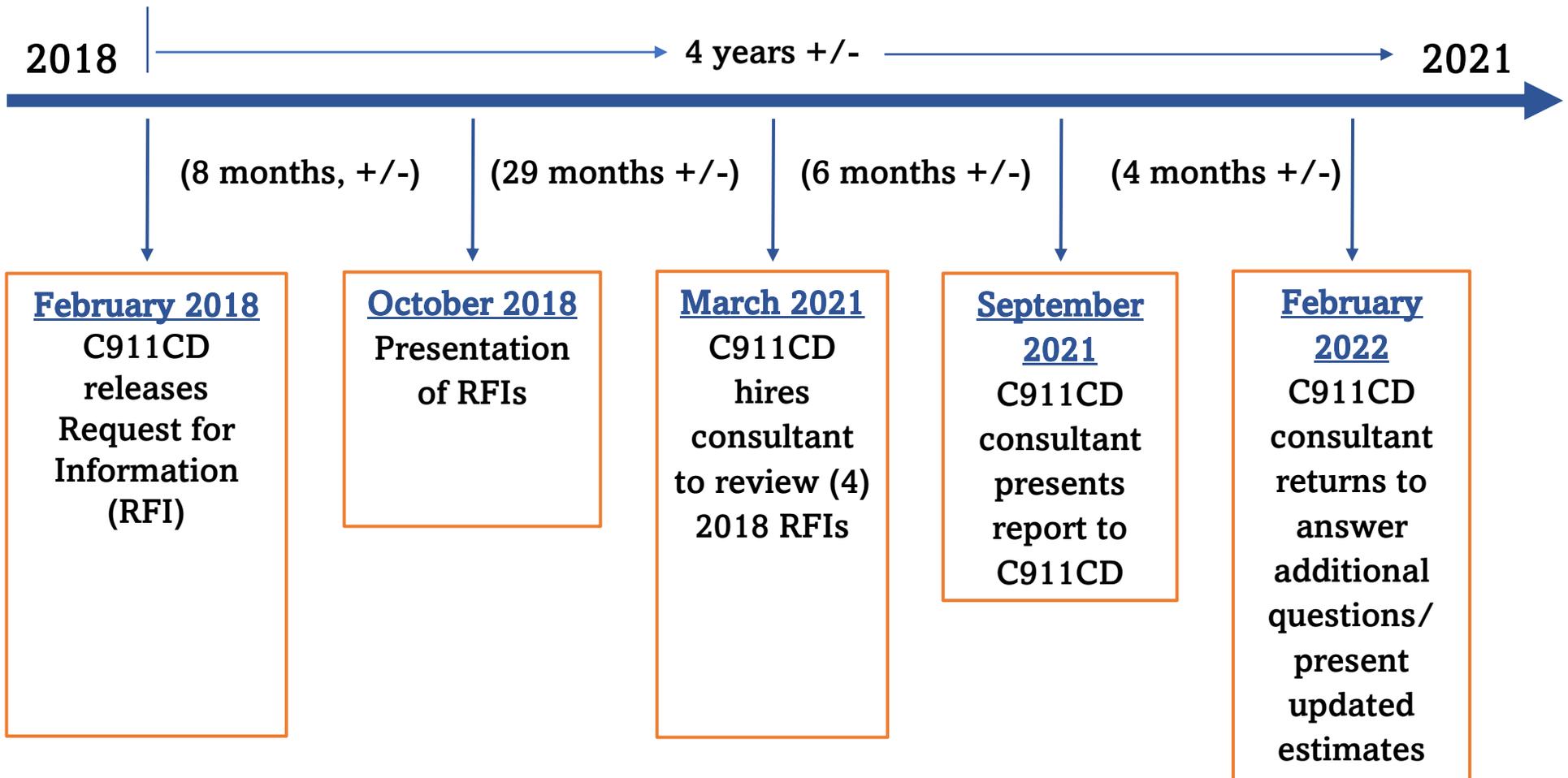
To the Tait Communications Presentation

November 29, 2022



# PROJECT HISTORY

## 2018 – 2021



# C911CD CONSULTANT'S PRESENTATION

## FEBRURAY 1, 2022

### Recap of Alternatives Differences



System Alternatives Comparison				
Item	Alternative 1 VHF System	Alternative 2 700 MHz	Alternative 3 CRESA	Alternative 4 WCCCA
Ownership and control	<ul style="list-style-type: none"> <li>District-owned</li> <li>Full control</li> </ul>	<ul style="list-style-type: none"> <li>District-ow</li> <li>Full control</li> </ul>	<ul style="list-style-type: none"> <li>CRESA-owned</li> <li>Shared control</li> </ul>	<ul style="list-style-type: none"> <li>WCCCA-owned</li> <li>Shared control</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Analog</li> <li>Conventional</li> </ul>	<ul style="list-style-type: none"> <li>P25 Phase 1</li> <li>Conventional</li> </ul>	<ul style="list-style-type: none"> <li>P25 Phase 1</li> <li>Trunking</li> </ul>	<ul style="list-style-type: none"> <li>P25 Phase 2</li> <li>Trunking</li> </ul>
Spectrum	VHF	700 MHz	800 MHz	800 MHz
Mobile radio coverage	95%	99%	97%	98%
<u>In-building coverage of industrial, commercial, and residential areas</u>	15%	75%	60%	65%

1

2

# C911CD CONSULTANT'S PRESENTATION

## FEBRURAY 1, 2022

### Recap of Alternatives Differences

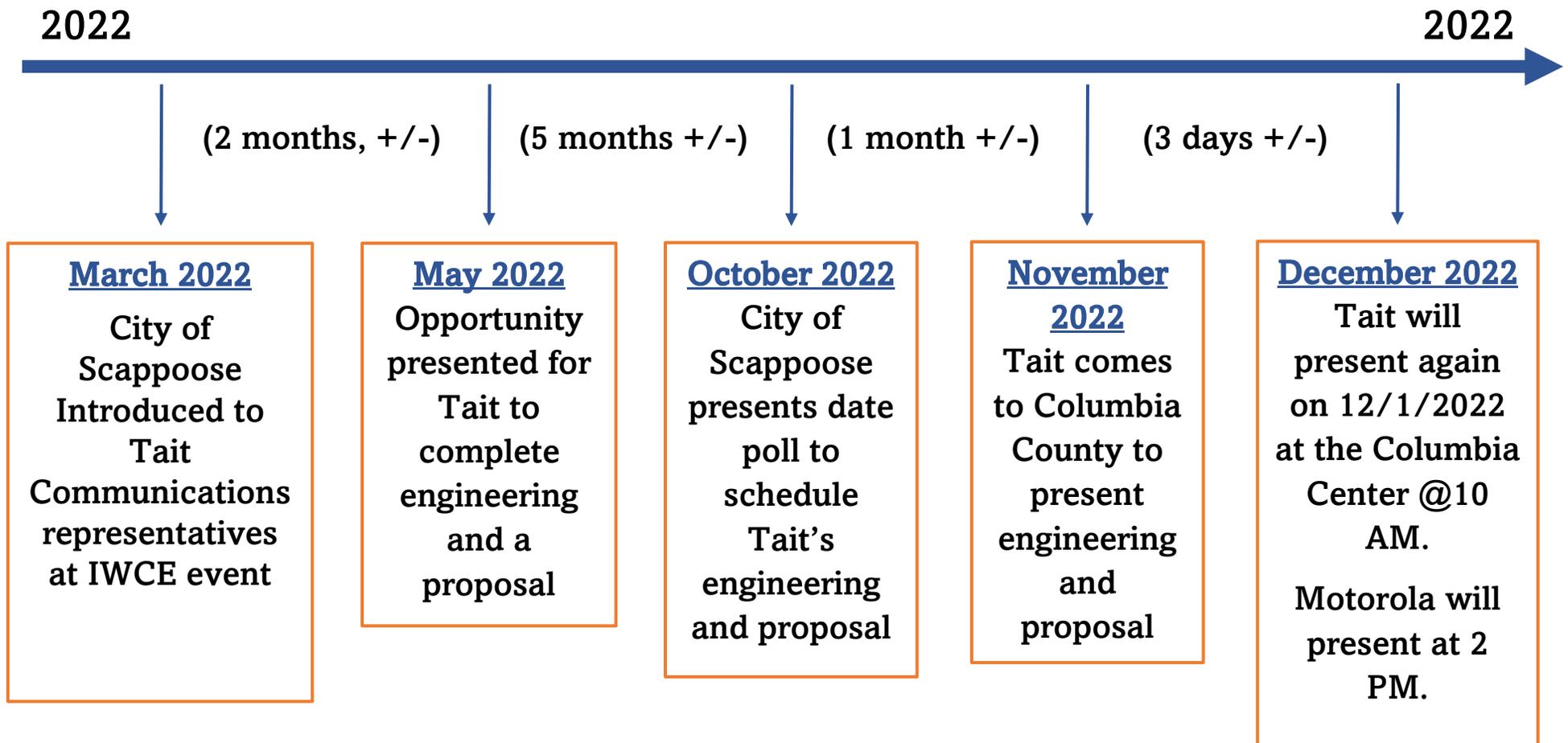


System Alternatives Comparison				
Item	Alternative 1 VHF System	Alternative 2 700 MHz	Alternative 3 CRESA	Alternative 4 WCCCA
Features	<ul style="list-style-type: none"> <li>No added features</li> </ul>	<ul style="list-style-type: none"> <li>P25 std. features</li> </ul>	<ul style="list-style-type: none"> <li>P25 std. features</li> </ul>	<ul style="list-style-type: none"> <li>P25 std. features</li> </ul>
		<ul style="list-style-type: none"> <li>AES encryption</li> </ul>	<ul style="list-style-type: none"> <li>AES encryption</li> </ul>	<ul style="list-style-type: none"> <li>AES encryption</li> </ul>
			<ul style="list-style-type: none"> <li>OTAR</li> </ul>	<ul style="list-style-type: none"> <li>OTAR</li> </ul>
			<ul style="list-style-type: none"> <li>GPS</li> </ul>	<ul style="list-style-type: none"> <li>OTAP</li> </ul>
		<ul style="list-style-type: none"> <li>Smartphone Integration</li> </ul>	<ul style="list-style-type: none"> <li>GPS</li> </ul>	<ul style="list-style-type: none"> <li>Smartphone Integration</li> </ul>
Subscriber units	<ul style="list-style-type: none"> <li>Re-use existing VHF radios</li> </ul>	<ul style="list-style-type: none"> <li>New dual-band VHF/700MHz radios</li> </ul>	<ul style="list-style-type: none"> <li>New dual-band VHF/800MHz radios</li> </ul>	<ul style="list-style-type: none"> <li>New dual-band VHF/800MHz radios</li> </ul>
Estimated 20-year cost to acquire and maintain	\$11,590,000	\$29,560,000	\$27,750,000	\$35,770,000

3

# CURRENT EVENTS

## 2022



# CITY'S OBJECTIVES

## **BRING MORE INFORMATION / OPTIONS FORWARD**

- 1. Capture up to date Need Requirements of the end users (first responders).**
- 2. Based on the Need Requirements, design a radio system that meets the requirements.**
- 3. Determine which vendor/manufacture can meet the Need Requirements at the lowest overall cost to the taxpayers.**

# SURVEY

## Who was interviewed and why

- The sheriff and each police chief (or acting police chief)
- 3 of the 5 fire district chiefs/battalion chiefs within Columbia County, plus Wauna Westport Fire & Rescue
- Each school district superintendent
- Each city manager
- County department heads (e.g., public works, land development, general services, etc.)
- Public works directors for the cities
- Clatskanie PUD, Columbia River PUD and West Oregon Electric general managers and operations managers

## LAW ENFORCEMENT AGENCY SURVEY RESULTS

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important 5: Desired 0: Not Needed

#	CHARACTERISTIC	CCSO	RPD	CCPD	SHPD	VPD	SPD	TOTAL
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	10	10	10	10	60 / 60
2	Reliable portable radio coverage indoors/inside buildings	10	10	10	10	10	10	60 / 60
3	Reliable portable radio coverage "from the hip" (belt or vest mounted)	10	10	10	10	10	10	60 / 60
4	Reliable portable radio coverage <u>at least</u> 10-miles into neighboring counties	10	8	10	8	10	10	56 / 60
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	10	8	10	10	10	10	58 / 60
6	PTT Identification on all radios for all transmissions	10	10	10	10	10	10	60 / 60
7	Emergency buttons supported and enabled on all public safety radios	10	10	10	10	10	10	60 / 60
8	Encryption on <u>at least</u> all non-dispatch talk groups	10	10	10	10	10	10	60 / 60
9	Scanner feed audio delay of <u>at least</u> 30-minutes on non-encrypted talk groups	10	10	10	10	10	10	60 / 60
10	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	10	10	10	10	60 / 60
11	Emergency ops / incident command talk groups for each city and the county	10	10	10	10	10	10	60 / 60
12	Ability to communicate via system with public works, schools, electric providers	10	10	10	10	10	10	60 / 60
13	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	10	10	10	10	10	10	60 / 60
14	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	10	10	10	10	60 / 60
15	Smartphone application to access radio system from anywhere there is LTE/5G	10	8	8	8	7	10	51 / 60
16	Cache of portable radios for checkout during training, events, incidents, SAR	10	10	10	10	10	10	60 / 60
17	Data radio channel for mobile computer data when LTE/5G is out of range	10	10	10	10	10	8	58 / 60

## FIRE DISTRICT SURVEY RESULTS

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important 5: Desired 0: Not Needed

#	CHARACTERISTIC	WWFR	MBRFPD	VRFPD	SRFPD	TOTAL
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	10	10	40 / 40
2	Reliable portable radio coverage indoors/inside buildings	10	10	10	8	38 / 40
3	Reliable portable radio coverage "from the hip" (belt, strap, or vest/chest mounted)	10	10	8	8	36 / 40
4	Reliable mobile radio coverage on transport routes / into neighboring counties	*	10	10	10	30 / 30
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	10	5	7	10	32 / 40
6	PTT Identification on all radios for all transmissions	10	10	10	10	40 / 40
7	Emergency buttons supported and enabled on all public safety radios	10	10	10	10	40 / 40
8	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	10	10	40 / 40
9	Emergency ops / incident command talk groups for each city and the county	*	6	10	10	26 / 30
10	Ability to communicate via system with public works, schools, electric providers	*	5	5	8	18 / 30
11	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	10	8	8	8	34 / 40
12	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	10	10	40 / 40
13	Smartphone application to access radio system from anywhere there is LTE/5G	10	10	10	10	40 / 40
14	Cache of portable radios for checkout during training, events, incidents, SAR	10	10	10	8	38 / 40
15	Data radio channel for mobile computer data when LTE/5G is out of range	10	10	5	10	35 / 40
16	Reliable voice pager coverage throughout the 9-1-1 district service area	0	10	10	10	30 / 30

- Clatskanie Rural Fire Protection District and Columbia River Fire and Rescue did not respond/participate.
- \* Agency advised during interview the question does not really apply to Westport Wauna Fire & Rescue because their primary interface is with Clatsop County.

## CITY AND COUNTY PUBLIC WORKS DEPARTMENTS

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important 5: Desired 0: Not Needed

#	CHARACTERISTIC	COUNTY PW	CLATS PW	RAINIER PW	C CITY PW
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	10	10
2	Reliable portable radio coverage indoors/inside buildings	6	8	10	10
3	Reliable portable radio coverage “from the hip” (belt or vest mounted)	10	5	10	7
4	Reliable portable radio coverage <u>at least</u> 10-miles into neighboring counties	4	0	8	0
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	6	10	8	10
6	PTT Identification on all radios for all transmissions	8	10	10	10
7	Emergency buttons supported and enabled on all public safety radios	8	10	10	10
8	Encryption on <u>at least</u> all non-dispatch talk groups	Not applicable to public works			
9	Scanner feed audio delay of <u>at least</u> 30-minutes on non-encrypted talk groups	Not applicable to public works			
10	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	10	10
11	Emergency ops / incident command talk groups for each city and the county	7	8	10	10
12	Ability to communicate via system with public works, schools, electric providers	10	8	10	10
13	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	7	0	0	0
14	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	10	10
15	Smartphone application to access radio system from anywhere there is LTE/5G	6	8	8	0
16	Cache of portable radios for checkout during training, events, incidents, SAR	Not applicable to public works			
17	Data radio channel for mobile computer data when LTE/5G is out of range	Not applicable to public works			

## CITY AND COUNTY PUBLIC WORKS DEPARTMENTS (CONTINUED)

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important 5: Desired 0: Not Needed

#	CHARACTERISTIC	ST. H PW	VERN PW	SCAPP PW	TOTAL
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	10	70 / 70
2	Reliable portable radio coverage indoors/inside buildings	10	10	10	64 / 70
3	Reliable portable radio coverage "from the hip" (belt or vest mounted)	7	10	8	57 / 70
4	Reliable portable radio coverage <u>at least</u> 10-miles into neighboring counties	0	8	0	20 / 70
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	10	10	8	62 / 70
6	PTT Identification on all radios for all transmissions	10	10	8	66 / 70
7	Emergency buttons supported and enabled on all public safety radios	10	10	8	66 / 70
8	Encryption on <u>at least</u> all non-dispatch talk groups	Not applicable to public works			
9	Scanner feed audio delay of <u>at least</u> 30-minutes on non-encrypted talk groups	Not applicable to public works			
10	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	10	70 / 55
11	Emergency ops / incident command talk groups for each city and the county	10	10	10	65 / 70
12	Ability to communicate via system with public works, schools, electric providers	10	10	10	68 / 70
13	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	5	0	0	12 / 70
14	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	10	70 / 70
15	Smartphone application to access radio system from anywhere there is LTE/5G	10	10	10	60 / 60
16	Cache of portable radios for checkout during training, events, incidents, SAR	Not applicable to public works			
17	Data radio channel for mobile computer data when LTE/5G is out of range	Not applicable to public works			

## OTHER COUNTY GOVERNMENT DEPARTMENTS

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important 5: Desired 0: Not Needed

#	CHARACTERISTIC	GENERAL SERVS	LAND DEVELOP	TOTAL
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	20 / 20
2	Reliable portable radio coverage indoors/inside buildings	10	10	20 / 20
3	Reliable portable radio coverage “from the hip” (belt or vest mounted)	0	5	5 / 20
4	Reliable portable radio coverage <u>at least</u> 10-miles into neighboring counties	0	0	0 / 20
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	10	10	20 / 20
6	PTT Identification on all radios for all transmissions	10	10	20 / 20
7	Emergency buttons supported and enabled on all public safety radios	10	10	20 / 20
8	Encryption on <u>at least</u> all non-dispatch talk groups	Not applicable to other government departments		
9	Scanner feed audio delay of <u>at least</u> 30-minutes on non-encrypted talk groups	Not applicable to other government departments		
10	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	20 / 20
11	Emergency ops / incident command talk groups for each city and the county	10	10	20 / 20
12	Ability to communicate via system with public works, schools, electric providers	8	10	18 / 18
13	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	Not applicable to other government departments		
14	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	20 / 20
15	Smartphone application to access radio system from anywhere there is LTE/5G	10	8	18 / 20
16	Cache of portable radios for checkout during training, events, incidents, SAR	Not applicable to other government departments		
17	Data radio channel for mobile computer data when LTE/5G is out of range	Not applicable to other government departments		

- Columbia County Assessor’s Office, Emergency Management, Public Health, and Transit did not participate.

## SCHOOL DISTRICTS

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important    5: Desired    0: Not Needed

#	CHARACTERISTIC	CSD	RSD	SHSD	VSD	SSD	TOTAL
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	10	10	10	50 / 50
2	Reliable portable radio coverage indoors/inside buildings	10	10	10	10	10	50 / 50
3	Reliable portable radio coverage "from the hip" (belt or vest mounted)	5	0	7	0	0	12 / 50
4	Reliable portable radio coverage <u>at least</u> 10-miles into neighboring counties	Not applicable to school districts					
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	10	2	10	10	0	32 / 50
6	PTT Identification on all radios for all transmissions	10	10	10	10	10	50 / 50
7	Emergency buttons supported and enabled on all public safety radios	10	10	10	10	10	50 / 50
8	Encryption on <u>at least</u> all non-dispatch talk groups	Not applicable to school districts					
9	Scanner feed audio delay of <u>at least</u> 30-minutes on non-encrypted talk groups	Not applicable to school districts					
10	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	10	10	10	50 / 50
11	Emergency ops / incident command talk groups for each city and the county	10	8	8	10	10	46 / 50
12	Ability to communicate via system with public works, schools, electric providers	10	7	10	10	10	47 / 50
13	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	Not applicable to school districts					
14	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	10	10	10	50 / 50
15	Smartphone application to access radio system from anywhere there is LTE/5G	10	8	10	10	5	43 / 50
16	Cache of portable radios for checkout during training, events, incidents, SAR	Not applicable to school districts					
17	Data radio channel for mobile computer data when LTE/5G is out of range	Not applicable to school districts					

## ELECTRIC UTILITY PROVIDERS

Rating scale used by agency representatives responding to the below questions: 10: Extremely Important    5: Desired    0: Not Needed

#	CHARACTERISTIC	CPUD	CRPUD	WEST OR	TOTAL
1	Reliable portable radio coverage outdoors (roads, parking lots, driveways, etc.)	10	10	10	30 / 30
2	Reliable portable radio coverage indoors/inside buildings	7	5	10	22 / 30
3	Reliable portable radio coverage "from the hip" (belt or vest mounted)	7	5	5	17 / 30
4	Reliable portable radio coverage <u>at least</u> 10-miles into neighboring counties	5	0	10	15 / 30
5	Location services/AVL from mobiles & portable radios; connected to CAD maps	5	5	7	17 / 30
6	PTT Identification on all radios for all transmissions	8	5	7	20 / 30
7	Emergency buttons supported and enabled on all public safety radios	8	5	7	20 / 30
8	Encryption on <u>at least</u> all non-dispatch talk groups	Not applicable to electric utility providers			
9	Scanner feed audio delay of <u>at least</u> 30-minutes on non-encrypted talk groups	Not applicable to electric utility providers			
10	Designed for resiliency to withstand severe adverse conditions, such as Cascadia earthquake event and severe winter weather events and wind	10	10	10	30 / 30
11	Emergency ops / incident command talk groups for each city and the county	8	10	7	25 / 30
12	Ability to communicate via system with public works, schools, electric providers	8	10	7	25 / 30
13	Ability to seamlessly communicate with OSP, Clatsop, Cowlitz, Longview, Multnomah, and Washington County first responders.	Not applicable to electric utility providers			
14	Talk group needs (review initial concept list, provide any feedback and rating)	10	10	10	30 / 30
15	Smartphone application to access radio system from anywhere there is LTE/5G	10	5	5	20 / 30
16	Cache of portable radios for checkout during training, events, incidents, SAR	Not applicable to electric utility providers			
17	Data radio channel for mobile computer data when LTE/5G is out of range	Not applicable to electric utility providers			

**DETAILED ACCOUNTING OF RADIO NEEDS AND RELATED COST  
FOR ALL (7) ENTITY TYPES**

Includes totals for all law enforcement agencies, fire districts, 4 radios per school, plus 4 for each school district admin office, public works, city and county government services, the three electric utility providers within the county, C911CD admin and backup radios for dispatch consoles.

#	Item	Quantity Needed
1	Portable (handheld) radio, single band	474
2	Portable (handheld) radio, dual band	362
3	Extra battery	837
4	Extra single unit charger	180
5	Vehicle charger	202
6	Speaker microphone, new public safety version	531
7	Speaker microphone, heavy duty	87
8	Six unit charger	61
9	Replacement portable antenna, single band 7/800	91
10	Replacement portable antenna, multiband VHF, 7/800.	52
11	Service monitor test, FW update, programming (handheld)	836
12	Mobile radio, single band, dash mount, w/15 watt speaker	250
13	Mobile radio, single band, remote mount, w/15 watt speaker	104
14	Mobile radio, dual band, dash mount, w/15 watt speaker	94
15	Mobile radio, dual band, remote mount, w/ 15 watt speaker	120
16	Dual head kit for mobile radio	55
17	Power supply for mobile to base conversion	62
18	Desktop kit for mobile to base conversion	55
19	Desktop microphone for mobile to base conversation	55
20	Radio antenna VHF, Laird BB1360WS	172
21	Radio antenna 7/800, Laird TRAB7603	286
22	Radio antenna 7/800, PCTEL BMUF7603 (elevated feed)	66
23	NMO mount with 17' coax and mini UHF, Laird MAB8M	567
24	GPS/Wi-Fi antenna, Panorama GPSF-24-58	342
25	Radio/GPS/Wi-Fi antenna, Panorama GPSBAX AFM835	172
26	Parts and installation (mobile; in vehicle radios)	499
27	Parts and installation (mobile converted to base)	61
28	Service monitor test, FW update, programming (mobile)	568

# FUNDING CONSIDERATIONS

## BOND

Can be used for capital purchases. For example, the new system could be funded by a bond. Recurring, annual expenses for maintenance, support, etc. **cannot** be funded by a bond. **Bonds do not count towards compression!**

## LEVY

A levy is likely to also be needed for recurring annual expenses. Annual expenses could be warranty and support plans or services that cannot or were not included in the bond amount. **Levies do count towards compression.**

**Parts of Vernonia, Clatskanie and Rainier are already in compression. Scappoose is \$0.466 from compression, St. Helens \$1.7936 from compression. Compression should be a concern for any entity in the county that relies on a levy to fund their operating needs.**

# FUNDING CONSIDERATIONS

## COMPRESION IS A CONCERN

*“The Cities of Clatskanie, Rainier and Vernonia are over the \$10.00 in the government section. The \$10.00 is times by the per thousand of real market value, this is the 1<sup>st</sup> part of a 2 part test. The second part is what is the lower tax, 10.00 times the per thousand of real market value or the full rate (that is over the \$10.00) times the per thousand of assessed value. The tax payor/tax account pays on the lower calculated amount.*

*When the tax account is being calculated on the \$10.00 times the per thousand of real market value because this is the lesser in the calculation, the Local Option levies then compress first, then if further compression is needed the permanent rate districts are compressed.” - Columbia County Accessors Office, September 29, 2022*

# FUNDING CONSIDERATIONS

## **EXAMPLE OF HOW WE CAN AVOID FURTHER COMPRESSION**

- **Owning vs. joining Washington County (WCCCA) or other neighboring system.**
  - **About \$431.86 per radio would be paid to WCCCA, per year, per radio, *just for system access like a cell phone bill* (Refer to page 21 of the consultant's August 19, 2021 report.)**
  - **At \$431.86 per radio and 792 radios between only law enforcement and fire district users, the annual total is \$342,033.12. That means any levy to pay for the annual recurring expenses for system maintenance would increase by \$342,033.12, just for law enforcement and fire district needed radios to use the WCCCA core/"backbone".**
  - **This illustrates one of many other reasons for C911CD to "own and operate" their own system.**

# ALTERNATIVE FUNDING

- **ALTERNATIVE FUNDING SOURCES COULD BE EVALUATED TO REDUCE THE BURDEN ON TAXPAYERS.**
- **Can C911CD hire a consultant to help locate and apply for grants?**
- **Position C911CD to qualify for a wide range of grants, for example:**
  - **School safety related grants**
    - **Qualify by including all schools on the radio system?**
  - **Resiliency & natural disaster (Cascadia, etc.) preparedness related grants**
    - **Qualify by including on the radio system all public works, schools, land development, etc.?**
  - **County broadband project funding**
    - **Qualify by supporting rural wireless broadband equipment on radio system tower sites (\$ to help build tower sites, etc.)?**

# WRAP UP

- **School safety enhancement opportunity**
  - [www.youtube.com/watch?v=yVjW\\_koGnWk&t=1s](http://www.youtube.com/watch?v=yVjW_koGnWk&t=1s)
  - [www.youtube.com/watch?v=Kq3qNYE8Y4w](http://www.youtube.com/watch?v=Kq3qNYE8Y4w)
  - **Expectation from the public/taxpayers**
- **Speakers**
  - **Sheriff Brian Pixley (officer safety considerations)**
  - **Michael Sykes, General Manager, Columbia River PUD**
  - **Mouhamad Zaher, Director, St. Helens Public Works**



**SCAPPOOSE**  
*Oregon*

Contact: Tyler Miller, City Councilor | [tmiller@cityofscappoose.org](mailto:tmiller@cityofscappoose.org)

**THANK YOU**



*Happy Holidays*

AND HAVE A WONDERFUL NEW YEAR