

CLACKAMAS COUNTY BOARD OF COUNTY COMMISSIONERS

Sitting/Acting as (if applicable) Policy Session Worksheet

Presentation Date: 12/10/19 **Approx. Start Time:** 1:30pm **Approx. Length:** 30 Min

Presentation Title: C-800 Bond Update

Department: County Administration/Finance

Presenters: John Hartsock, Sue Scobert

Other Invitees: Kevin Moss, Brian Nava, Cheryl Bledsoe, Nancy Bush, Christa Bosserman Wolfe

WHAT ACTION ARE YOU REQUESTING FROM THE BOARD?

This is an informational Update about the C-800 Project. No Board action is required.

EXECUTIVE SUMMARY:

The purpose for this Policy Session is a status update of the C800 Emergency Communications System Upgrade project. Ballot Measure 3-476, approved by 71% the Clackamas County electorate in May of 2016, authorized \$59M in general obligation bonds to replace and upgrade the public safety radio communications system serving Clackamas County. The Board of Commissioners entered into an intergovernmental agreement with Clackamas 800 Radio Group on December 19, 2016 to execute and manage the project.

C800's Board Chair and its Manager will present a brief overview of the project team, citizen accountability committee, project history, implementation status, schedule, and budget.

FINANCIAL IMPLICATIONS (current year and ongoing):

Is this item in your current budget? X YES NO

What is the cost? \$59 million plus the \$7,165,794 million in Bond Premiums

Voters passed the Bond back in 2016 for the funding of this project.

What is the funding source? General Obligation Bond

STRATEGIC PLAN ALIGNMENT:

- How does this item align with your Department's Strategic Business Plan goals?
- How does this item align with the County's Performance Clackamas goals?
Building Trust through Good Government and Build a Strong Infrastructure. The County is working with the C-800 Group to upgrade radio equipment so that the communications will be uninterrupted in case of an emergency.

LEGAL/POLICY REQUIREMENTS: N/A

PUBLIC/GOVERNMENTAL PARTICIPATION:

A Citizen Accountability Committee was setup as part of the Bond Measure. The group meetings monthly and is informed about project and status updates. There is also a C-800 Working group made up of Police Chief, Fire Chiefs representing the County and the cities that meets monthly to discuss the schedule and budget for the C-800 project.

OPTIONS:

N/A

RECOMMENDATION:

This is an informational Update about the C-800 Project. No Board action is required.

ATTACHMENTS:

Radio Project Status

SUBMITTED BY:

County Administration Staff Approval Kevin Moss
Department Director/Head Approval Christa Bosserman Wolfe
County Administrator Approval _____

For information on this issue or copies of attachments, please contact Kevin Moss@ 503-742-5923

RADIO PROJECT STATUS

Emergency Communication System Upgrade

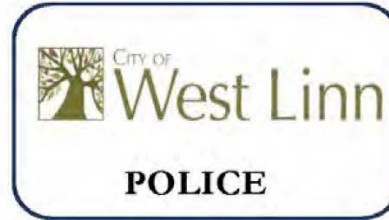
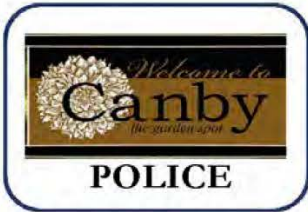
C800 Project Leader: John Hartsock

WCCCA Project Leader: Ron Polluconi

C800 Project Manager: Bjorn Morfin

Date: December 10, 2019





THE EIGHTEEN PUBLIC SAFETY AGENCIES THAT MAKE UP CLACKAMAS 800 RADIO GROUP



WHAT IS THE C800 RADIO GROUP

- C800 was formed as an ORS 190 cooperative intergovernmental agency in 2000. C800's service area is 1,879 square miles and the service population is 412,821 (2019).
- The charge of the Clackamas 800 Radio Group (C800) is to own and operate an effective and cost-efficient public safety voice and data communications system to benefit the public safety providers that protect the citizens of Clackamas County.
- C800 also serves other public agencies as "Members". These agencies are not involved in the governance of the organization. They pay a use fee. These organizations are:

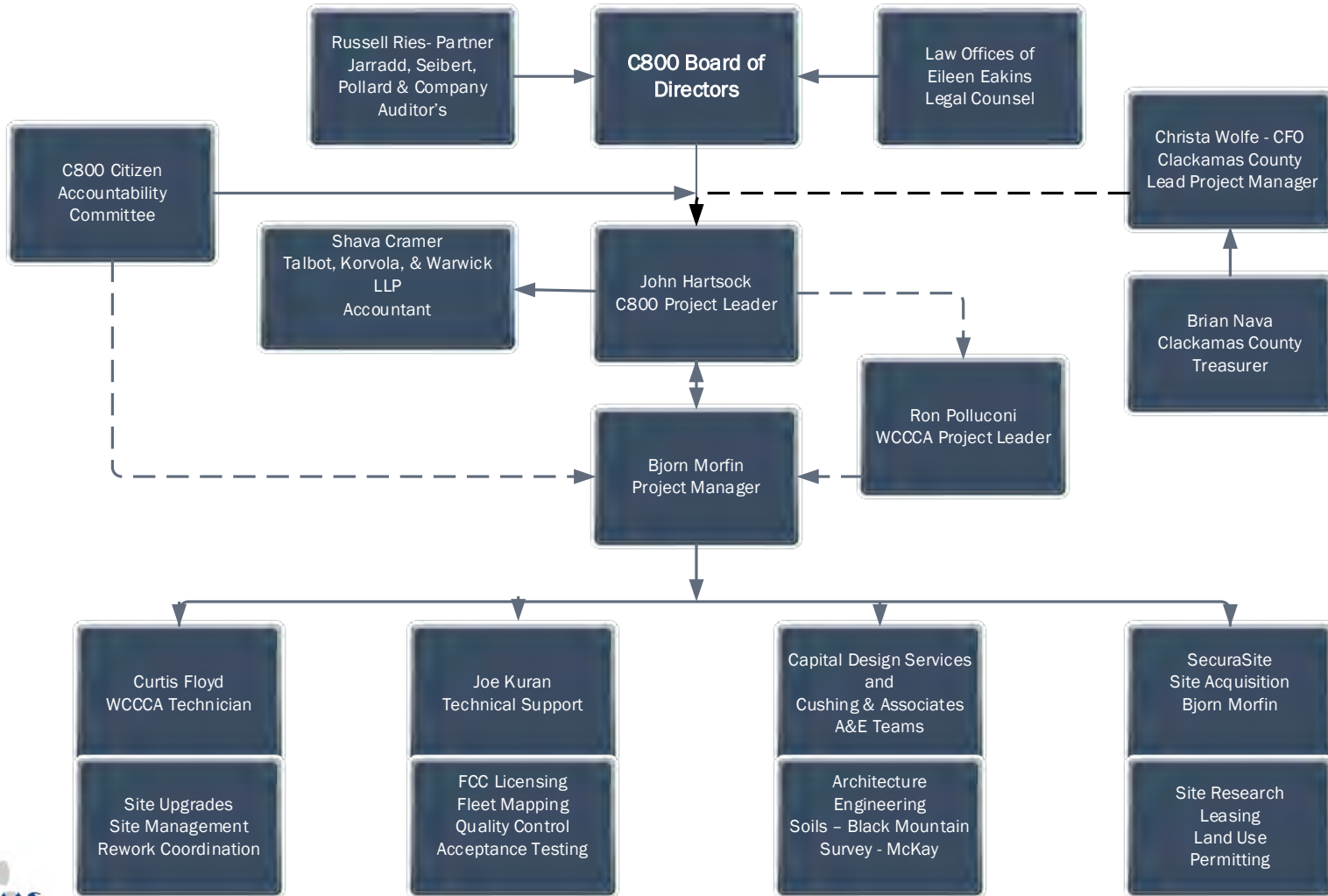
• CC Emergency Management	Lake Oswego Public Works
• CC Community Corrections	West Linn Public Works
• CC District Attorney	City of Happy Valley
• CC Dog Services	Milwaukie Public Works
• CC Transportation	Wilsonville Public Works
• CC Code Enforcement	Wilsonville Transit
• CC Medical Exam	Sunrise Water Authority
• CC Medical Examiner	Clackamas River Water
• CC Community College	Boring Water District
• Lake Oswego Lake Corp	Aurora Fire
• Willamette Trolley	Monitor Fire
• USFS	Silverton Fire
• ODFW	
- In 2000 Clackamas County, on behalf of C800, constructed the initial 800MHz seven-site radio system. The system was completed in 2002 and subsequently added five sites. The original funding, \$15.1M, consisted of grant dollars and a short term borrowing by the County which the C800 Partners re-paid from operating funds.
- In 2016 Clackamas County on behalf of C800 requested voter approval of a general obligation bond in the amount of \$59 million to upgrade and expand the system by 14 sites. The measure was approved by a 71% margin.
- Washington County Consolidated Communications Agency (WCCCA), a like ORS 190 agency in Washington County, provides technical management and maintains the C800 radio system under an Intergovernmental Agreement. They too, through Washington County, obtained voter approval to upgrade and expand their system in 2016. WCCCA and C800 have a strong partnership to support public safety.
- C800 is governed by an 18-member Board of Directors consisting of representatives from each of the Partner agencies. The Board is responsible for retaining a manager, establishment of strategic plans, program goals and objectives, service levels, adoption of the annual budget, financial audit, system expansion, and other major operating decisions. C800 is funded by user fees from the participating jurisdictions.

MISSION: Superiority In Emergency Communications – Because A Life Is Reason Enough

GOAL: An effective public safety voice and data radio communications systems operating at maximum efficiency -- delivering quality service -- in the most cost effective manner.



C800 Project Team



Clackamas 800 Radio Group Radio Replacement Project



Citizen Accountability Committee

- Dave Austin
 - Chris Hawes
 - Renee King
 - Bill Merchant
 - Kirk Stempel
 - Ted Kunze
 - Laurie Freeman Swanson
- Lake Oswego
Boring / Damascus
Clackamas / Milwaukie
Oregon City
Gladstone
Canby
Molalla

Meet Quarterly

Have met 11 times

First Meeting November 30, 2016

Next Meeting December 17, 2019



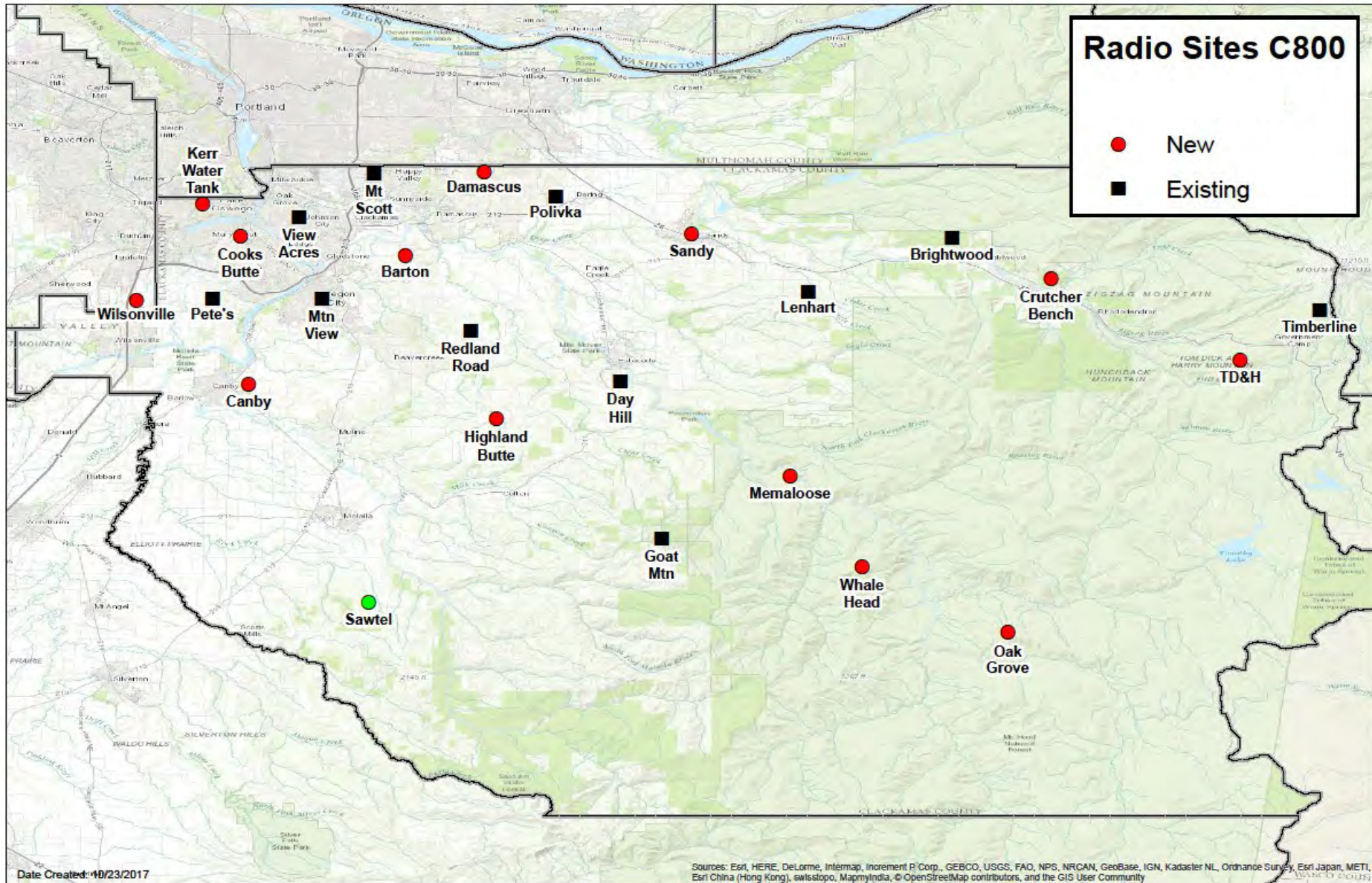
Resiliency:

A Primary Objective of the Upgraded System Design

- **New Facilities and Towers - Designed to the Oregon Structural Specialty Code: “Essential Facilities” Risk Category IV: i.e.,** Essential structures in this category are used for communications across non-redundant and hardened networks such as: rescue or disaster operations, and public safety facilities. They are to withstand a magnitude 9 earthquake and continue to operate.
- **Existing Facilities and Towers - Upgraded to Meet the Current Essential Facilities Codes.**
- **48V DC Power Systems Combined with Emergency Generators**
 - Having 1,000 gal propane fuel supply to provide up to 4 weeks of back up power.
- **Redundant HVAC units - To maintain environmental control.**



C800 Site Locations



Project Status New Sites Summary

14 New Sites Acquisition / Design / Construction:

- **Barton / Damascus / Sandy / Canby / Crutcher Bench /:** Complete.
- **Hoodland Fire/Brightwood:** Construction is underway anticipating completion by December 20, 2019.
- **Wilsonville:** Contractor mobilized on November 4, 2019 anticipate completion by January 31, 2020
- **Highland Butte (BLM):** Construction is underway with tree clearing and road construction. Anticipate completion by January 31, 2020
- **Tom Dick & Harry / Memaloose / Whale Head / Oak Grove (USFS):** Construction is underway on Memaloose / Whalehead / Oak Grove – access easement being obtained for TD&H. Anticipate a June 2020 completion depending on weather
- **Cooks Butte:** On hold – pending C800 Board review and direction.
- **Kerr Parkway Water Tank:** Researching alternative locations.

Project Status Existing Sites Summary

13 Existing Sites Design / Construction

- **Brightwood / Lenhart / Pete's / Polivka / Day Hill / Mt View / Redland Rd / Sawtell / View Acres :** Complete
- **Mt Scott:** Tower replacement / building foundation upgrades / 48V DC power system / new generator and 1,000 gal fuel tank / new HVAC units. Anticipated by January 31, 2020.
- **Goat Mtn / :** Tower structural upgrades / building foundation upgrades / 48V DC power system / new generator and 1,000 gal fuel tank / new HVAC units. Goat is underway with an anticipated December completion – could be delayed due to weather.
- **Timberline:** new generator and 1,000 gal fuel tank to be scheduled
- **CCOM:** New Uninterruptable Power System for Master Site Equipment / revisions to fire suppression system / new cable tray work complete.



Project History and Status

Brief History:

Conceptual planning for upgrade of the public safety radio systems in the Portland Metro Area started in 2008 due to an aging communications infrastructure. The planning team was a partnership of City of Portland, Clark County, Washington (CRESA), Washington County Consolidated Communications Agency (WCCCA) and Clackamas 800 Radio Group (C800). The planning team was assisted by the IXP Corporation and a \$1M Homeland Security Grant to propose a system of systems approach for providing public safety communications for the region. City of Portland and CRESA choose to construct an independent system. C800/WCCCA chose to continue their partnership and build a joint system. All 4 system interoperate with each other.

Ballot Measure 3-476 approved in May 2016 authorized \$59M in general obligation bonds to replace and upgrade the public safety radio communications system serving Clackamas County. The Bonds were sold on November 3, 2016. Clackamas County entered into an Intergovernmental Agreement with Clackamas 800 Radio Group on December 19, 2016 to execute and manage the project. The initial schedule was for the Project to be completed by June 2019. We have made considerable progress but have been delayed, primarily in site acquisition and therefor site construction. The anticipated completion date has been extended to August 2020.

Architectural and Engineering Services:

Months of pre-planning, including determining potential sites, allowed site acquisition, architectural and engineering services, for the 14 new sites to begin at once as well as upgrade designs for existing sites. The value of these contracts is \$2.8M of which we have spent \$2.5M.

Equipment:

Procurement of major project elements began in earnest in December 2016. The contract to Motorola for the key components of the radio system and the portable and mobile radios for the public safety users was awarded in August 2017 in the amount of \$33.9 Million. The contract to Microwave Networks Inc for site interconnectivity was awarded in November 2018 in the amount of \$3.1 Million. Contracts for radio site shelters for \$1.6M / communication towers for \$1.3M / 48Volt power systems for \$1.4M all awarded in mid-2018. To date we have expended \$31M for these items.

Status of the 13 existing sites:

Seven of the existing sites required seismic stabilization, new HVAC, new emergency generators and fuel tanks,. These sites were complete in early 2019. The remaining six required replacement of the communication towers due to structural needs. The work was bid and awarded in May 2019. The work at these sites is now complete except for the Mt Scott site which will be completed in late December 2019.



Project History and Status

Status of the 14 new sites:

The first three new sites were leased by early 2017 and two more by early 2018. Those five proceeded to land use approval, design and permitting, and construction, and are now complete.

The site at Wilsonville site is now under construction and anticipated completion is January 2020. The Wilsonville site was approved by the landlord in early 2018. However, the lease was delayed until August 2019 due to an access easement from an adjoining property owner.

The Highland Butte site lease was submitted in June 2016 to Bureau of Land Management (BLM). Approving the project was lengthy primarily due to NEPA (national environmental protection act) issues and internal BLM delays. Construction is underway and anticipated to be complete by January 2020.

The four US Forest Service sites at Whalehead, Memaloose, Oak Grove Butte, and Tom Dick & Harry, were submitted to USFS in February 2016. The USFS had long delays in approving this project. The final application was over 1,000 pages with many maps and related reports. Our design team to struggled with timely responses.

We received the lease for Whalehead, Memaloose, and Oak Grove Butte in July of 2019 but were not approved to proceed with construction until October 2019. Due to this being a snow site, final construction will not likely be complete until late spring / early summer 2020.

Skyland - This site has been delayed due to the uncertainty about moving forward with the site at Cooks Butte Park in Lake Oswego. C800 has been attempting to obtain a site at Cooks Butte going back to 2002 as it provides the best radio coverage for Lake Oswego. Due to a deed restriction on the Cooks Butte property, the Skyland location was chosen as an alternate in March 2016. A lease was signed for Skyland soon thereafter. The team proceeded to prepare the land use application for the Skyland site until we were advised that the deed restriction for Cooks Butte was released in late 2017. The City of Lake Oswego granted a lease for Cooks Butte to C800 in April f 2018. The team began working through the development process for Cooks Butte in early 2018 to date. The City's land use process is complex and arduous and has taken until now to develop the submittal materials. The City advised us on November 12, 2019 that they are requesting that C800 abandon the lease. It is anticipated that we are now going back to the Skyland site with anticipation of submitting for land use as quickly as possible. This site will likely be appealed, and construction start is unknown, but could be two years out.

Finally, based on coverage predictions we need a second site in the north of Lake Oswego. We looked at a potential site on Kerr Road at a Lake Oswego water department site but at this moment in time it does not look likely. We are continuing to search for a site.

We have completed \$7.5M in site construction from a budget of \$11.4M

Overall, we have spent \$41.9M of our \$59M budget.



Project Schedule

ID	Task Name	Duration	Start	Finish	2016		2017		2018		2019		2020	
					Half 2	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd Half	1st Half	2nd
0	C800 Radio Systems Upgrade 6-1-2019	1093 days?	Wed 6/1/16	Fri 8/7/20										
1	Site Acquisition & Design & Construction	1038 days	Wed 6/1/16	Fri 5/22/20										
2	Aquisition - Land Leases / Survey / Soils / Geotech	848 days	Wed 6/1/16	Fri 8/30/19										
12	Site Designs, Engineering /Architecture / Land Use / Permits / Bid Award Contract	828 days	Wed 11/16/16	Fri 1/17/20										
21	Construct New Site	818 days	Wed 4/5/17	Fri 5/22/20										
30	Upgrade Existing Communications Sites	470 days	Mon 2/5/18	Fri 11/22/19										
31	Site Designs, Engineering /Architecture / Land Use / Permits/ Bid & Award Construction	390 days	Mon 2/5/18	Fri 8/2/19										
36	Construct Existing Site	355 days	Mon 7/16/18	Fri 11/22/19										
41	WCCCA/C800 Phase IV P25 System (Voice/Data/Paging)	1050 days?	Mon 8/1/16	Fri 8/7/20										
42	WCCCA/C800 Phase IV P25 System (Voice/Data/Paging)	0 days?	Mon 8/1/16	Mon 8/1/16										
43	P25 LMR System and Subscribers	1050 days	Mon 8/1/16	Fri 8/7/20										
44	Upgrade or Replace P25 Subscriber Radios	674 days	Mon 7/3/17	Thu 1/30/20										
50	Upgrade P25 LMR Infrastructure	930 days	Mon 8/1/16	Fri 2/21/20										
53	New/upgraded alarms, security, telemetry, site management systems, procurement	320 days	Tue 1/1/19	Mon 3/23/20										
56	Upgrade or Replace P25 IV&D Radio/Dispatch Consoles	1000 days	Mon 8/1/16	Fri 5/29/20										
59	Recording/Logging equipment upgrade/replacement	350 days	Tue 2/5/19	Mon 6/8/20										
63	Backup Dispatch (Wide and Control Station modes)	460 days	Mon 11/5/18	Fri 8/7/20										
66	Site on Wheels (wide and ST modes)	400 days	Mon 11/5/18	Fri 5/15/20										
69	Microwave Backhaul Systems	675 days	Mon 11/6/17	Fri 6/5/20										

Project Schedule

ID	Task Name	Duration	Start	Finish	2016		2017		2018		2019		2020	
					Half Qtr 2	2nd Half Qtr 3	1st Half Qtr 4	2nd Half Qtr 1	1st Half Qtr 2	2nd Half Qtr 3	1st Half Qtr 4	2nd Half Qtr 1	1st Half Qtr 2	2nd Half Qtr 3
75	New/Upgrade 48 VDC and Battery Backup Systems	405 days	Mon 9/24/18	Fri 4/10/20										
80	Paging, Messaging Systems upgrade/replacement	600 days	Mon 2/5/18	Fri 5/22/20										
89	IP based Fire Station Alerting System	500 days	Mon 6/4/18	Fri 5/1/20										
96	Video and Security systems	255 days	Mon 6/17/19	Fri 6/5/20										
103	Interoperable RF Systems and Links	570 days	Mon 6/4/18	Fri 8/7/20										
110														
112	System Operational August 7, 2020	0 days	Fri 8/7/20	Fri 8/7/20										

- New Site Design & Construction complete: June 2020
- Existing Sites Upgrade complete: January 2019
- System Operational Date: August 2020 (Less Lake Oswego)
- Lake Oswego: To be determined



C800 Radio System Upgrade Budget (1)

Project: **C800 Radio System Upgrade**
 Date Original: 10/1/2015 Date Updated: **October 31, 2019**
 Project Manager: Bjorn Morfin

Item	Budget	Original Encumbrance	Additional Encumbrance / Change Order	Estimate to Complete	Percent Complete	Estimated Total	(Over) Under Budget	Expended
Soft Cost								
Site Acquisition Consulting - Quest	60,000	25,000	45,000	(2,930)	100.00%	67,070	(7,070)	67,069.81
Site Acquisition Consulting / Permits - Securasite	320,000	321,250	121,300	80,000	94.79%	522,550	(202,550)	495,301.54
Site Planning A&E - Cushing/Capital/Cundiff/Forensic/KPFF/S DC/ToddHess	725,000	692,391	468,930	(304,400)	98.74%	856,921	(131,921)	846,161.45
Geotechnical / Environmental Consulting - Black Mtn	250,000	443,670	0	50,000	96.97%	493,670	(243,670)	478,715.22
Survey - McKay	75,000	124,240	0	0	80.13%	124,240	(49,240)	99,555.00
USFS Land Use Fees	15,000	10,000	40,000	5,000	89.94%	55,000	(40,000)	49,465.23
Land Use Fees	25,000	9,400		5,000	64.85%	14,400	10,600	9,339.00
Plan Check / Permit Cost	60,000	10,000		0	95.25%	10,000	50,000	9,525.20
Printing	2,500			0	0.00%	0	2,500	0.00
Bid Advertising	3,500	1,287		500	72.01%	1,787	1,713	1,286.65
Materials Testing & Inspection	40,000	2,700		30,000	8.02%	32,700	7,300	2,623.75
Project / Construction Management	300,000	298,000		150,000	86.66%	448,000	(148,000)	388,251.07
Legal Fees	30,000	19,100		10,000	58.55%	29,100	900	17,038.74
Licensing	20,000	69,000		5,000	93.10%	74,000	(54,000)	68,890.50
Miscellaneous	30,000	92,685		25,000	78.76%	117,685	(87,685)	92,684.88
Sub-Total Soft Cost	1,956,000	2,118,723	675,230	53,170	92.23%	2,847,123	(891,123)	2,625,908
Construction Cost								
Site Construction	8,895,000	10,529,799	0	750,000	74.37%	11,279,799	(2,384,799)	8,389,002.16
Buildings	1,350,000	2,018,663	0	40,000	86.46%	2,058,663	(708,663)	1,780,009.60
Towers	660,000	1,712,481	0	25,000	92.54%	1,737,481	(1,077,481)	1,607,915.81
Generator	500,000	562,046	0	35,000	87.08%	597,046	(97,046)	519,902.21
48VDC	1,065,000	1,493,332	0	15,000	64.40%	1,508,332	(443,332)	971,303.98
Lake Oswego Antenna	18,000	17,500	0	0	100.07%	17,500	500	17,511.75
Sub-Total Construction Cost	12,488,000	16,333,821	0	865,000	77.25%	17,198,821	(4,710,821)	13,285,645.51

C800 Radio System Upgrade Budget (2)

Project: **C800 Radio System Upgrade**
 Date Original: 10/1/2015 Date Updated: October 31, 2019
 Project Manager: Bjorn Morfin

Item	Budget	Original Encumbrance	Additional Encumbrance / Change Order	Estimate to Complete	Percent Complete	Estimated Total	(Over) Under Budget	Expended
Equipment Costs								
Simulcast Equipment	20,726,000	\$19,592,515		200,000	92.93%	19,792,515	933,485	18,393,193.29
Paging	373,000	7,523		365,000	8.04%	372,523	477	29,958.31
Subscriber Radios	5,000,000	6,303,129		500,000	49.45%	6,803,129	(1,803,129)	3,364,355.52
Asset Management	119,000			119,000	0.00%	119,000	0	0.00
Post Warranty / System Refresh	5,800,000	5,812,058		0	100.00%	5,812,058	(12,058)	5,812,058.44
Test Equipment	100,000			100,000	0.00%	100,000	0	0.00
Microwave	3,368,000	0	2,349,951	250,000	95.51%	2,599,951	768,049	2,483,285.91
Security System	1,364,000			500,000	0.22%	500,000	864,000	1,079.96
Fire Station Alerting	0			1,470,000		1,470,000	(1,470,000)	975,701.34
Subtotal Equipment Costs	36,850,000	31,715,226	2,349,951	3,504,000	82.67%	37,569,177	(719,177)	31,059,633
Bond Cost	300,000	290,372		0	111.43%	290,372	9,628	323,547
Subtotal Project Cost	51,594,000	50,458,141	3,025,181	4,422,170	81.68%	57,905,492	(6,311,492)	47,294,734
Additional Proceeds	4,875,000					(4,875,000)	4,875,000	
Adjusted Project Costs	56,469,000	50,458,141	3,025,181	4,422,170	81.68%	53,030,492	(1,436,492)	
Contingency	7,406,000			7,406,000	0.00%	5,969,508	1,436,492	
Total Project Cost	63,875,000	50,458,141	3,025,181	11,828,170	80.16%	59,000,000	0	47,294,733.75

Bond Proceeds	5,845,000	Taxable
	53,155,000	Non Taxable
	59,000,000	
Additional Proceeds	2,200,000	Subscriber Radio Payments
	2,675,000	PGE Payment
	4,875,000	
Total Proceeds	63,875,000	

Premium Bond Proceeds	7,165,794
Interest Earnings	1,200,000
	\$8,365,794

Q1 - 2020 Quarterly Outlook

	C800
<ul style="list-style-type: none"> • Procurement 	<ul style="list-style-type: none"> • Bid and award security/CCTV system
<ul style="list-style-type: none"> • Leases & Land Use Applications 	<ul style="list-style-type: none"> • Determine Lake Oswego Sites / submit land use
<ul style="list-style-type: none"> • Site Construction 	<ul style="list-style-type: none"> • Complete Wilsonville / Highland Butte / Whalehead / Oak Grove Butte / Memaloose / Tom Dick & Harry / Goat Mt
<ul style="list-style-type: none"> • Radio / Microwave 	<ul style="list-style-type: none"> • Continue radio infrastructure install • Continue microwave system install • Finalize subscriber radio distribution and existing radio upgrades



Project Goal:

To create an efficient, dependable public safety radio communications system that works in all parts of Clackamas County!

**What's Happening With the
Communications Upgrade Project?**





Typical Radio Site



Staging the 47 Radio Sites /
4 Dispatch Centers / 2 Jails





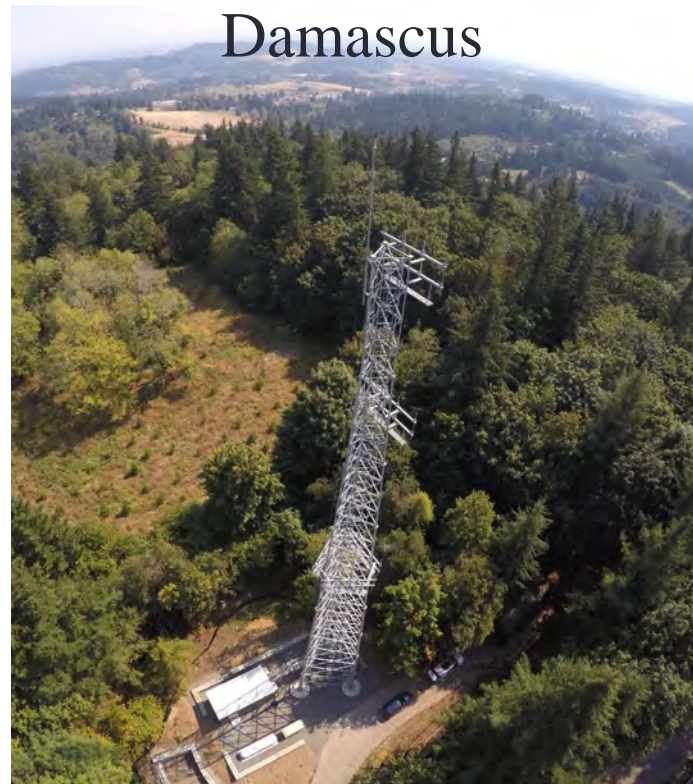
Canby



Barton



Damascus



Barton



**CLACKAMAS
SOO RADIO
GROUP**

9-1-1

WCCCA

POLICE - FIRE - MEDICAL



Goat Mountain





Polivka



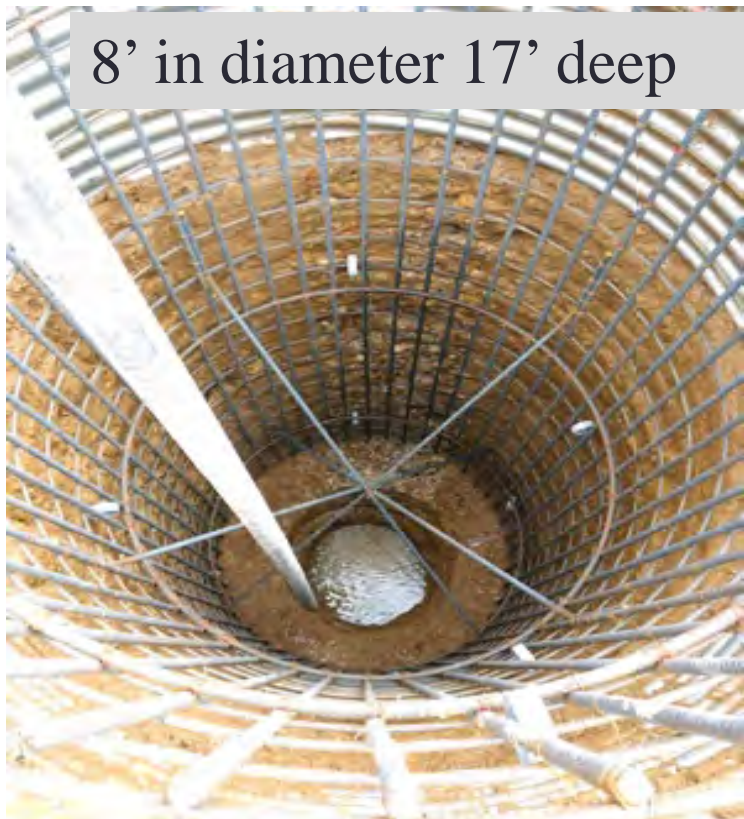
Linhart



Brightwood



8' in diameter 17' deep



2' deep 41' square



Typical Tower Foundations



USFS Sites



Power Runs for Memaloose /
Whalehead / Oak Grove Butte
Approx. 32 miles of wire
19 Miles Directional Bored
13 Miles Plowed

Typical Road Clearing /
Brushing / to Access Sites