



TRWC Board of Directors Meeting

May 25, 2017 - 9:00 a.m.

Phoenix-Mesa Gateway Airport (PMGA)

Administration Building, Board Room

5835 S. Sossaman Road

Mesa, Arizona 85212

Video Conference: <https://global.gotomeeting.com/join/117507413>

Audio Bridge: 1-669-224-3412, Access Code 117-507-413

Members of the public may address the Board on any item. Please complete a "Request to Speak Card", located at the entry of the room and promptly turn it in to the Executive Director. There is a time limit of three minutes for comments.

Agenda

- 1) Call to Order and Opening Comments
 - a. [Materials](#) and Sign-in Sheet
 - b. Speaker Cards
 - c. Audio Recording

- 2) Executive Session

Pursuant to ARS Sec 38-431.03, Discussion of Gila River Indian Community Interoperability Agreement.

- 3) Public Comment

Members of the public may address the Board on items not on the printed agenda. Please complete a "Request to Speak Card", located at the entry of the room and turn it in to the Executive Director prior to the beginning of the meeting. There is a time limit of three minutes for comments.

- 4) Discussion and Action on Board Meeting Minutes
[December 15, 2016 TRWC Board Meeting Minutes](#)

- 5) Discussion and Possible Action on Gila River Indian Community Interoperability Agreement

- 6) [Discussion and Possible Action on Salt River Pima-Maricopa Indian Community Membership Request](#) – Dale Shaw and City of Mesa/SRPMIC Representatives

- 7) [Discussion on Regional PSAP Backup Connectivity](#) – Liz Graeber (City of Phoenix)

- 8) FirstNet Update – Karen Ziegler (AZDOA)

- 9) Discussion and Possible Action on Committee and Working Group Updates
 - a. Executive Committee Update – Bill Peters (Co-chair)
 - Governance Material Review Status
 - Membership Request Review (GRIC, SRPMIC)

b. User Group Update - Dale Crogan (Chairman)

- VHF Project Update

c. Governance Working Group – Dale Shaw

10) Discussion and Possible Action on Network Administrator Updates:

a. [Budget](#) and [Finance](#) Overview - Sherry McGlade

b. [Network Updates and Performance Overview](#) - Randy Thompson

11) Comments from the Board

An opportunity will be provided for Board members to present a brief summary of current events. The Board is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed for legal action.

12) Next TRWC Board Meeting(s):

09/14/2017 9 to 11 a.m., PMGA

12/07/2017 9 to 11 a.m., PMGA

13) Adjournment



TRWC Board of Directors Meeting

December 15th, 2016 - 9AM
Phoenix-Mesa Gateway Airport (PMGA)
Administration Building, Board Room 5835
S. Sossaman Road
Mesa, Arizona 85212
Audio Bridge: 480-644-6120, Pin 541463

Members of the public may address the Board on any item. Please complete a "Request to Speak Card", located at the entry of the room and promptly turn it in to the Executive Director. There is a time limit of three minutes for comments.

Agenda

- 1) Call to Order & Opening Comments
 - a. Materials & Sign-in Sheet
 - b. Speaker Cards
 - c. Audio Recording

Chairman Kross called the meeting to order and welcomed the attendees, including [Assistant] Chief [Mike] Farber to his first meeting as a representative of the Superstition Fire and Medical District and [Assistant] Chief Bob Badgett for Assistant Town Manager Marc Skocypec.

Chairman Kross noted the materials for this meeting are located on the [TRWC] website. This is because the packet of materials for this meeting is large and an effort is being made to move to a digital platform where possible to reduce the number of copies printed that may be discarded later.

Chairman Kross also provided instruction on the process for public comment, and reminded the participants the meeting is audio recorded.

- 2) Executive Session

Pursuant to ARS Sec 38-431.03, Discussion of Gila River Indian Community Interoperability Agreement.

John Pombier motioned to adjourn the TRWC Board of Director's Meeting and convene an Executive Session. Jerry Ward seconded. All were in favor; the motion passed.

Upon return from the Executive Session, Mark Openshaw motioned to open the TRWC Board of Director's Meeting and Jay Ducote seconded. All were in favor; the motion passed.

- 3) Public Comment

Members of the public may address the Board on items not on the printed agenda. Please complete a "Request to Speak Card", located at the entry of the room and turn it in to the Executive Director prior to the beginning of the meeting. There is a time limit of three minutes for comments.

No Public Comment requests were received.

4) Discussion and Action on Board Meeting Minutes

September 29th, 2016 TRWC Board Meeting Minutes

Mark Openshaw motioned to approve the [09/29/16 TRWC Board Meeting Minutes](#) and Jay Ducote seconded. All were in favor; the motion passed.

5) Discussion and Possible Action on Gila River Indian Community Interoperability Agreement

Bill Anger noted that a couple of days ago, the Community asked for two changes to the Agreement. In both the Notice section and Signature Block area, the Police Department Chief has been substituted for the Fire Department Chief. Otherwise, the Agreement is identical to what the Board members have in the meeting materials.

John Pombier motioned to approve the Gila River Indian Community Interoperability Agreement and Mark Openshaw seconded. All were in favor; the motion passed.

Chairman Kross noted that Assistant Chief Bob Badgett needed to leave the Board Meeting early to attend an urgent meeting in Gilbert. Due to this, Chairman Kross asked to move up Item 7 on the agenda as it required Board action. Bill Anger confirmed Dale Shaw's question that there would not be any issues from a quorum standpoint if the representative from Gilbert left before the end of the meeting, if all the actions had been dealt with.

6) Discussion and Possible Action on Committee & Working Group Update

a. Executive Committee Update – Dale Shaw for Bob Badgett (Co-chair)

- Governance Material Review Status

Dale Shaw explained the Executive Committee sub-team has been diligently working on the governance material resulting from efforts with the RWC, Bill Anger has reviewed the document, there are some pending revisions, and a lot of policy work remaining. A prevalent change is to call out independent policy and procedure documents rather than embed this language within governance. These independent policy and procedure documents can contain detail and allow flexibility for changes over time. As with current governance, the Board still has the responsibility to identify the policy framework. Once all draft policy and procedure documents are put together, the whole body of work will go back to the Executive Committee for endorsement. Upon that endorsement, the body of work will come before the Board sometime within the next calendar year.

Mr. Shaw responded to a question from Chairman Kross related to if the RWC is tracking on the same timeline as the TRWC to bring materials to their Board for review. Mr. Shaw explained the RWC and TRWC have not established formal timelines, both are continuing to work in the background at a good solid pace, will present the materials when they are ready, that while language between the two governance documents will be consistent as they originated from the same language, there will be differences, are not coordinating activities as it refers to changing individual governance material, but have agreed to keep each other informed.

- FY 17/18 Proposed Budget Preparation

Dale Shaw stated this item was sufficiently covered by Bob Badgett for Item 7.

b. User Group Update - Dale Crogan (Chairman)

- VHF Project Update (Motorola attending as guest)

Dale Crogan explained the equipment from Motorola arrived yesterday and it has been verified, installation at the sites will begin as early as the beginning to mid-January [2017], and it is still on budget and schedule to hit the target date of July 1, 2017.

c. Governance Working Group - Dale Shaw

Dale Shaw explained they continue to be mindful of the original 2017 timeline. In January [2017] there will be a system administrator's meeting that he and Randy Thompson will attend. Various systems from the valley and state have been invited with the idea to work together on various areas of common interest one of which is the concept of a master agreement. The new master agreement will allow systems to be loosely coupled together under pseudo governance of a coordinating council where representation from each participating system includes a governing board and user representative. The idea is to work across the RWC, TRWC, and other systems as well. Mr. Shaw and David Felix of the RWC will be presenting the master agreement draft to attendees to solicit feedback and involvement in the process so there is a sense of ownership and a desire to sign on.

Mr. Shaw responded to a question from John Pombier regarding if user groups have been part of the process and are comfortable with the pace. Mr. Shaw explained there has been more activity than just the governance working group to address needs of the users and cited the VHF project as an example. Mr. Shaw explained it is the goal and has been demonstrated to have the user groups involved, to continue to have outreach, and allow this group to provide feedback. Additionally, the user group will be embedded in the process and have representation on the coordinating council. Further, Mr. Shaw explained the user groups have received various informal updates along the way.

7) Discussion and Possible Action on FY 17/18 Proposed Budget - Sherry McGlade & Randy Thompson

Sherry McGlade presented an overview of the FY 17/18 Proposed Budget as provided in the materials.

Dale Shaw clarified that VHF is allocated amongst the Fire partners in the TRWC that are utilizing that service and not among all Fire partners.

Sherry McGlade responded to a question from John Pombier how salaries are tied to the additional services to be provided by Motorola, and Dale Shaw noted the big departure from the previous budget is the inclusion of the Motorola contract to have additional services like security monitoring. Mr. Shaw noted that Randy Thompson was prepared to talk on that subject if the Board needed additional details. Chairman Kross stated that if there were not questions now, that further discussion and information sharing could take place at a future meeting.

Bob Badgett noted the budget has gone through the Executive Committee where it has been the focus for the last two months, the Motorola piece has been discussed and vetted through the Executive Committee. The recommendation was the budget be moved forward to this body with the recommendation to approve.

Chairman Kross appreciated everyone's involvement and noted it is very helpful for those presently involved in their respective organizations next fiscal year budget development process to have some certainty of a financial obligation. He also noted this is the earliest the TRWC budget has been considered for adoption.

Mike Farber motioned to approve the FY 17/18 Proposed Budget and Jay Ducote seconded. All were in favor; the motion passed.

8) FirstNet Update - Dave Faulkner

Dave Faulkner presented an overview of the provided material and introduced Karen Ziegler from the State of Arizona and Scott Neal with Mission Critical Partners who is a consultant with the state. Dave is working closely with these two people on all aspects. Karen Ziegler explained her role as the state project manager for the Arizona FirstNet project. Scott Neal provided information as to the timeline and delays due to a bid protest, and gave a high-level overview of events once the national partner is selected.

Mr. Neal explained he is working with Lt. Colonel Tim Chung from DPS to develop the process the draft plan will go through and identifying the appropriate people to be involved in reviewing technical, operational, policy, and legal implications, and provide feedback to FirstNet. Once the feedback from

this group is delivered to FirstNet, FirstNet will deliver a final plan through a portal to the Governor in which he has 90 days to decide if Arizona is going to opt in or out.

Mr. Faulkner explained that partners will have the choice to adopt FirstNet or stay with their carrier. Many officers and firefighters have mobile devices; however, FirstNet is not to replace land mobile radios, it is an extra tool in the toolbox for officers and firefighters to use in mobile phones, and air cards in computers, fire trucks, and police cars. FirstNet would be the broadband carrier for these devices.

Mr. Neal responded to a question from Chairman Kross related to a schedule for states in making the opt in or opt out decision and if the schedule was delayed due to the bid protest. Mr. Neal explained the timeline is unknown.

Mr. Neal responded to a question from Dale Shaw related to the opt in and opt out process, how the TRWC will be involved, and if it is still pending. Mr. Neal explained that he spoke with Lt. Col Chung yesterday about starting the process of identifying a diverse cross-section of individuals to review the plan.

Chairman Kross asked for a FirstNet update at the next Board meeting.

Mr. Neal explained that mission critical voice with FirstNet is down the road and that [Land Mobile Radio] LMR systems are going to be in place for the foreseeable future and to keep these systems maintained. Mr. Shaw further explained the data component of radio communications is in the foreseeable future and that we will continue to fund and operate our system for voice for some time.

9) Discussion and Possible Action on Network Administrator Updates:

a. Budget & Finance Overview - Sherry McGlade

Sherry McGlade presented a financial update as provided in the materials.

b. Network Updates & Performance Overview - Randy Thompson

Randy Thompson provided a summary of the network updates and performance overview as provided in the materials. Additionally, he noted a follow-up to the FirstNet related to the point-to-point microwave radio that is being replaced as part of a capital project. Mr. Thompson explained the technology being employed is Ethernet or internet protocol based so when the time comes to transport anything, we are not behind on the technology and ready.

Mr. Thompson and Dale Shaw responded to a question from Chairman Kross regarding the Higher Ground application and if there is an opportunity to have a presence to express opposition at the FCC meeting. Mr. Thompson explained the meeting for the Commission to take action on the application has not been scheduled yet and with the amount of comments filed related to objection due to possible interference, the Commission could go ahead and grant but it would not be typical. Mr. Shaw explained the meeting is a public proceeding so we would have an option to participate and would just need to allocate resources to do this.

10) Comments From the Board

An opportunity will be provided for Board members to present a brief summary of current events. The Board is not allowed to propose, discuss, deliberate or take action at the meeting on any matter in the summary, unless the specific matter is properly noticed for legal action.

No comments.

11) Next TRWC Board Meeting(s):

03/02/2017 9 to 11 am, PMGA

05/25/2017 9 to 11 am, PMGA (if necessary)

09/14/2017 9 to 11 am, PMGA

12/07/2017 9 to 11 am, PMGA

12) Adjournment

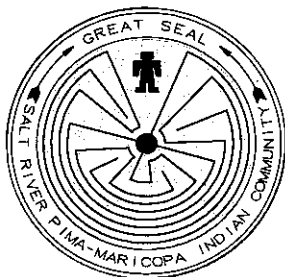


Date: May 25th, 2017
To: Topaz Regional Wireless Cooperative (TRWC) Board of Directors
From: Dale Shaw, TRWC Executive Director
Subject: Salt River Pima-Maricopa Indian Community Membership Request

On May 8th, 2017, I received the attached formal request from the Salt River Pima-Maricopa Indian Community (SRPMIC) to begin the TRWC member admission process. Through initial work with SRPMIC, the TRWC Executive Committee, and staff, we have conceptualized the SRPMIC membership admission approach as follows:

1. In support of the pending dispatch agreement between SRPMIC and the City of Mesa, SRPMIC fire/medical calls will be dispatched in the same manner as all other calls dispatched on the “alarm” channel. The SRPMIC calls will be assigned a talkgroup on SRPMIC’s existing network, which will be used for tactical operations for the call. The only TRWC network resources routinely utilized for SRPMIC fire/medical dispatch will be the initial dispatch of the fire and/or medical call on the fire “alarm” talkgroup. As is the case for any TRWC member, SRPMIC will be subject to normal billing for any non-dispatch use of the TRWC network.
2. SRPMIC will accept the current coverage and network performance as-is, with no other network improvements (outside of any planned capital projects) being required for ongoing participation in the TRWC.
3. We will likely recommend that no equity buy-in be required for SRPMIC admission. SRPMIC will therefore start with a \$0 equity balance which will be adjusted through any future capital project assessments.

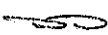
While the discussions are ongoing, the above approach represents the general consensus at this stage. Should the TRWC Board find these conditions favorable, we anticipate the official recommendation to be forwarded in September 2017 with execution of the associated IGA amendment to be completed before the end of the calendar year (upon TRWC Board approval).



Salt River Fire Department
10005 East Osborn Rd. Scottsdale, Az. 85256
Phone: 480-362-7290 Fax: 480-362-7998



To: Dale Shaw, Executive Director, TOPAZ Regional Wireless Cooperative

From: Daryl Dash, Fire Chief 

Date: 05/08/2017

Subject: Request to join TOPAZ Regional Wireless Cooperative as a member

The Salt River Pima-Maricopa Indian Community (SRPMIC) Fire Department is requesting membership consideration from the TOPAZ Regional Wireless Cooperative (TRWC) to join the TRWC as a member of the Cooperative. SRPMIC will initially program a total of subscriber 71 units, (29 mobile and 42 portable units for Fire).

The long term additional subscriber units that may be added in the future is not likely to be more than 10 additional subscriber units for a total of 81 units.

The Salt River Fire Department will be utilizing the TRWC for general use such as connectivity from Salt River Alarm Room to Mesa Regional Alarm Room, connectivity to fire station for alerting, and for mutual aid calls that TRWC partners and Salt River Fire Department are working together.

Thank you for your consideration of this request. Please contact me at (480) 362-7221, or if there are any questions or concerns.

r911 Connectivity Overview

2017-05-25

About Maricopa Region 911

PSAP CPE maintenance provider

Operate regional 911 data network

Operate selective routers

911 application development

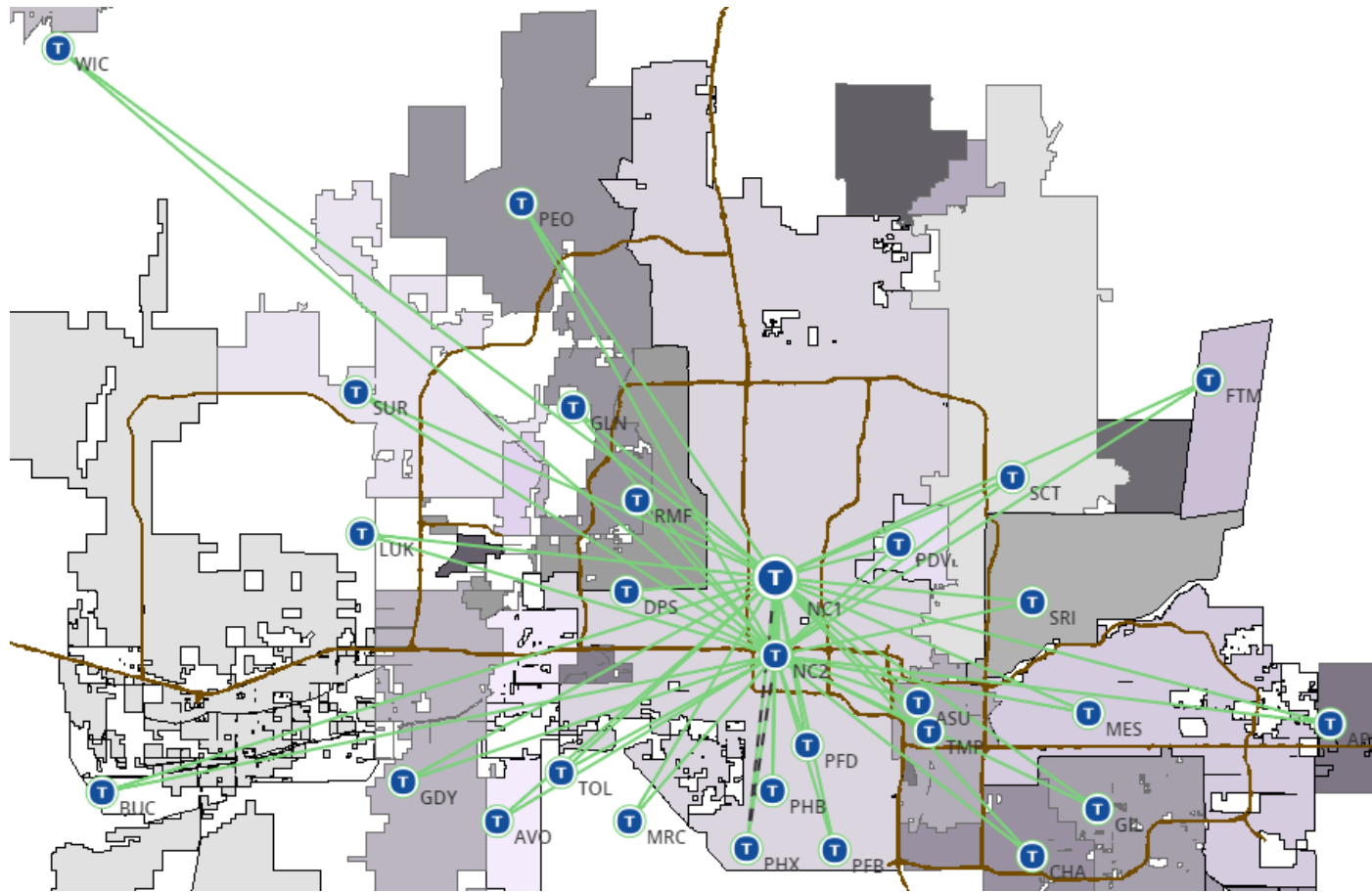
About Maricopa Region 911

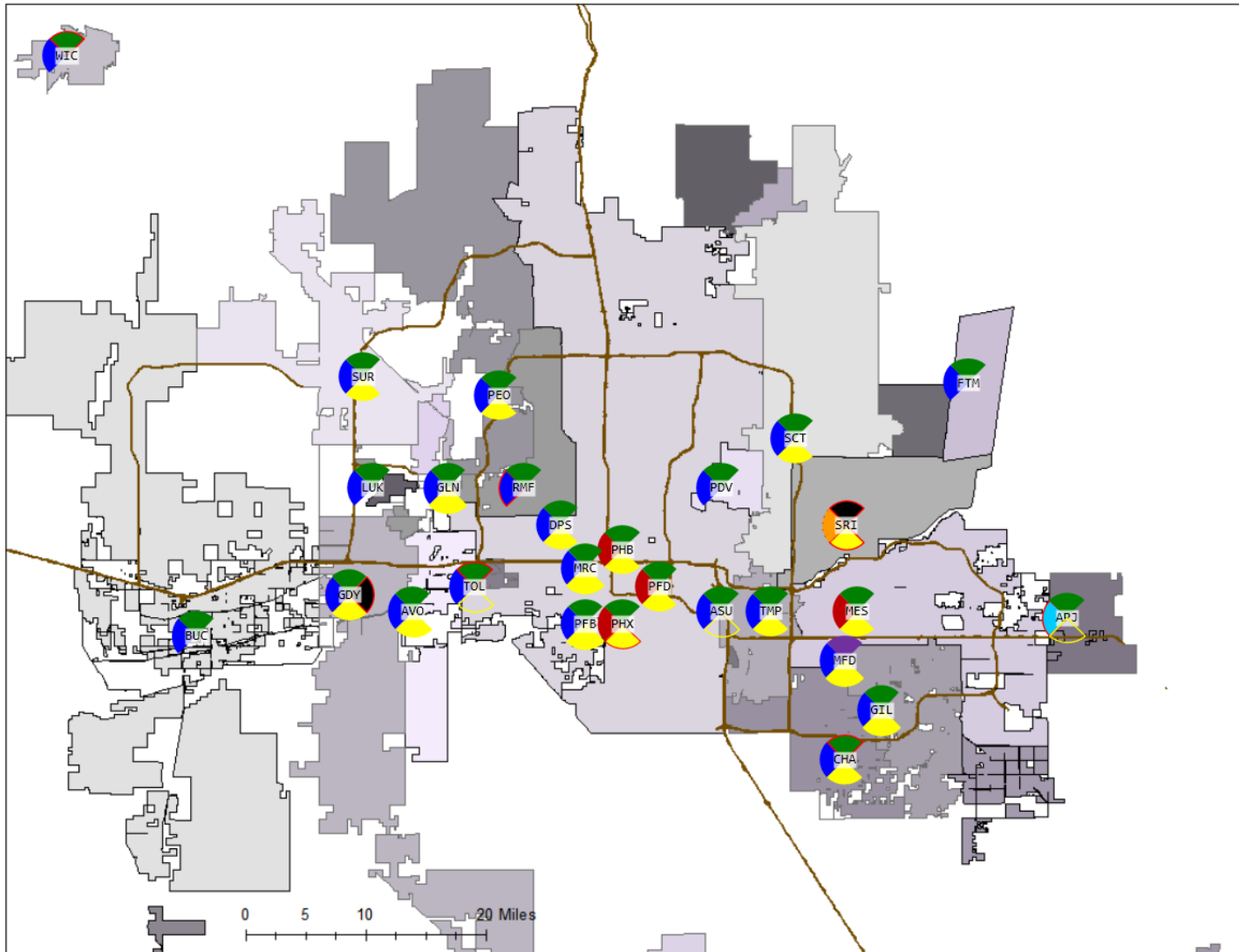
Funded by AZ state excise tax

Oversight provided by MAG

Contracting agency is Phoenix Fire

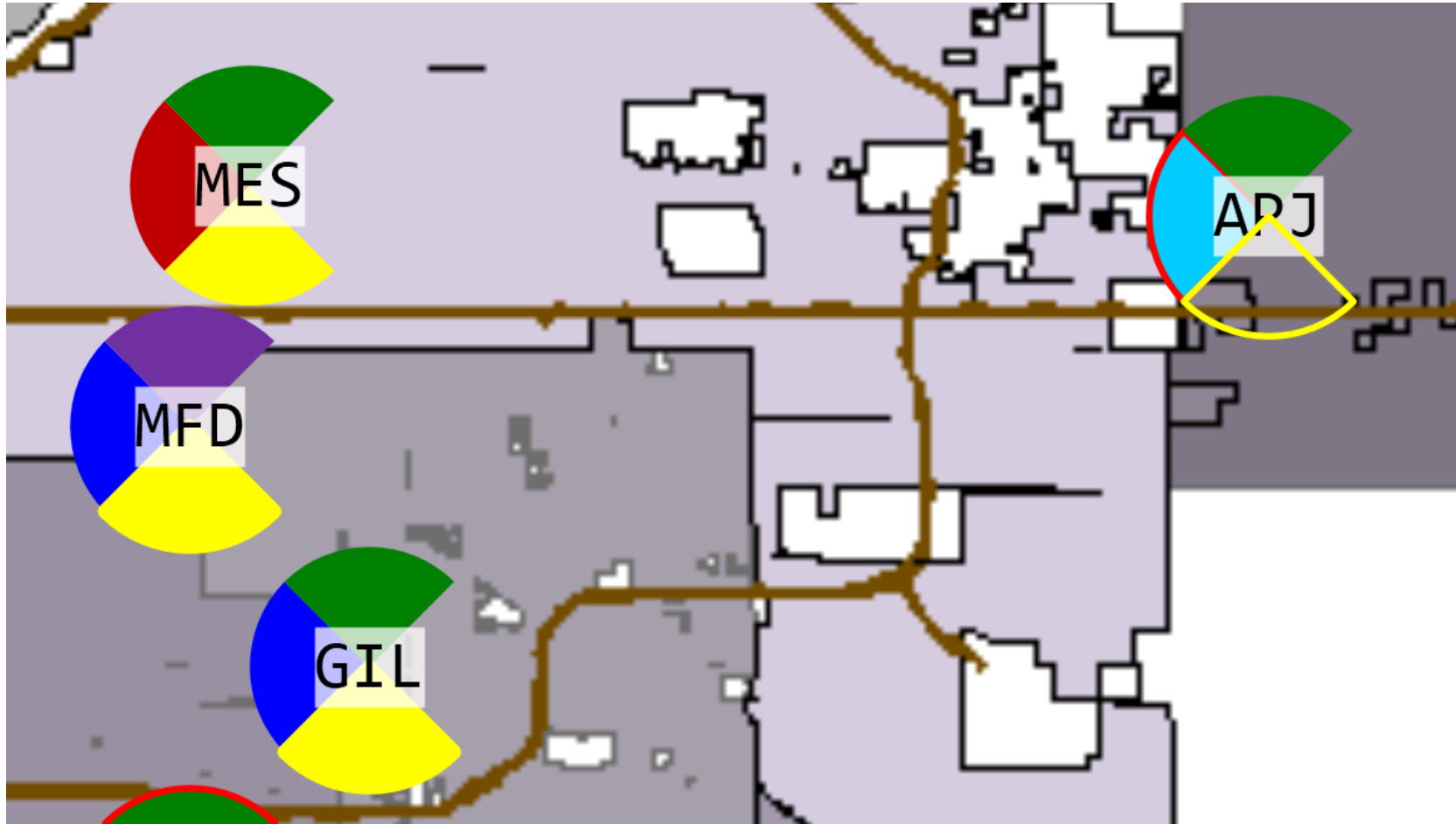
SD-WAN Overlay (r911 APN)





- CenturyLink
- City-owned dark fiber
- Cox Communications-Internet
- Cox Communications-MetroEthernet
- Mediacom
- RCN - MAG
- Saddleback Communications
- Microwave
- Not on fiber optic
- ⋯ Fiber optic expected
- RCN expected

Connectivity Goals



r911 APN - Diverse paths

Path Statistics Summary

Show entries Showing 1 to 12 of 12 entries

Num	From Link	To Link	Path State	Conduit State
1	GILRC1-ME	NC1VR2-ME	DEAD	GOOD
5	NC1VR2-ME	GILRC1-ME	DEAD	GOOD
7	GILRC1-ME	NC2VR2-ME	DEAD	GOOD
11	NC2VR2-ME	GILRC1-ME	DEAD	GOOD
2	GILRW1-COI	NC1VR1-COI	GOOD	GOOD
3	GILSV1-RCN	NC1VR2-RCN	GOOD	GOOD
4	NC1VR1-COI	GILRW1-COI	GOOD	GOOD
6	NC1VR2-RCN	GILSV1-RCN	GOOD	GOOD
8	GILRW1-COI	NC2VR1-COI	GOOD	GOOD
9	GILSV1-RCN	NC2VR2-RCN	GOOD	GOOD
10	NC2VR1-COI	GILRW1-COI	GOOD	GOOD
12	NC2VR2-RCN	GILSV1-RCN	GOOD	GOOD

Showing 1 to 12 of 12 entries

Bandwidth calculated over the last 5 seconds

Microwave/Fiber Connectivity

Additional redundant path

Separate physical transport if fiber cut

No expectation of uptime

Best-effort response if a link fails

Point to Point from Mesa PD Comm

Questions?



FISCAL YEAR TO DATE ACTUALS
Through April 30, 2017

OPERATIONS, MAINTENANCE,
SPECIAL ASSESSMENT AND CAPITAL

PRESENTED
May 25, 2017

TOPAZ

Operating and Maintenance Variance Analysis

Fiscal Year 2016 / 2017

As of April 30, 2017

Description	As of April 30, 2017					Comments
	ADJUSTED Fiscal Year Budget	YTD Budget*	YTD Actuals	\$ Var From YTD Budget Incr/(Decr)	% Var	
Personnel Services	492,000	397,385	295,683	(101,702)	-26%	Brand new equipment; less issues. Motorola handled warranty work and maintenance through Oct 1.
Sub-total Personnel Services	\$492,000	\$397,385	\$295,683	(\$101,702)	-26%	
Insurance Premiums	10,600	10,600	8,145	(2,455)	-23%	Expect to utilize for GWG Review and New Member request
Legal Services	37,000	30,833	19,520	(11,313)	-37%	
Temp Services **	25,875	25,875	54,286	28,411	110%	\$5K prior year; Mdiffenbaugh work on RFP \$23K
Land Rental	24,600	15,000	14,724	(276)	-2%	Florence Garden Invoice is on its way
Professional Services - Other**	77,225	64,354	72,558	8,204	13%	Includes 6 months of Dshaw \$43K, Tower Structural Analysis \$3000, RFI Study \$5000
Professional Services - Consulting	10,000	8,333	-	(8,333)	-100%	Budget for grant services not utilized
Utilities	72,500	60,417	41,375	(19,042)	-32%	Continue to realize savings of 20% compared to FY2015 (savings of 12% compared to 2016)
Telephone	5,700	4,750	2,423	(2,327)	-49%	
Repairs & Maintenance	10,400	8,667	2,577	(6,090)	-70%	
Equipment Usage (Vehicles)	20,000	16,667	14,862	(1,805)	-11%	
All Other Services	2,000	1,667	255	(1,412)	-85%	
Sub-total Services	\$295,900	\$247,163	\$230,725	(\$16,438)	-7%	
Contract - Preventative Motorola	645,000	645,000	653,104	8,104	1%	Annual increase on contract
Materials & Parts	37,600	31,333	3,728	(27,605)	-88%	New equipment has resulted in less repair work
Non Cap Assets	60,000	50,000	44,493	(5,507)	-11%	
Software Maintenance- Juniper	21,000	21,000	20,214	(786)	-4%	
All Other Commodities	1,000	833	748	(85)	-10%	
Sub-total Commodities	\$764,600	\$748,167	\$722,287	(\$25,880)	-3%	
Subtotal O&M	1,552,500	1,392,714	1,248,695	(144,019)	-10%	
Contingency - 5% of total O&M	77,625	-	-	-	0%	
Total	\$1,630,125	\$1,392,714	\$1,248,695	(\$144,019)	-10%	

*YTD Budget represents 10 months of operational costs plus any contractual expenses already incurred (i.e. one time payments such as Insurance Premiums, Land Rental and Motorola Contract).

** Temp Services and Professional Services budgets were adjusted to reflect the change in contract.

TOPAZ Regional Wireless Cooperative

Partner Allocations

Fiscal Year 2016/17

As of April 30, 2017

	Fiscal Year Budget	YTD Budget	YTD Billed	Variance		Estimated Airtime	6 month Avg Airtime
				Increase (Decrease)	% Var		
Operations							
COM	1,179,721	1,007,907	903,051	(104,856)	-10%	72.37%	70.35%
TOG	275,165	235,090	203,191	(31,899)	-14%	16.88%	17.53%
SFM	6,847	5,849	8,195	2,346	40%	0.42%	0.61%
CAJ	116,717	99,718	98,645	(1,073)	-1%	7.16%	8.74%
TQC	4,890	4,178	4,017	(161)	-4%	0.30%	0.30%
RVFD	326	279	247	(32)	-11%	0.02%	0.02%
SWA	10,596	9,053	8,297	(756)	-8%	0.65%	0.72%
AMR	2,608	2,228	1,684	(544)	-24%	0.16%	0.15%
FTM	33,255	28,411	14,400	(14,011)	-49%	2.04%	1.58%
Total	1,630,125	1,392,714	1,241,727	(150,987)	-11%	100%	100%

Capital Projects

COM	316,526	316,526	323,032	6,506	2%	72.96%	73.53%
TOG	73,828	73,828	69,215	(4,613)	-6%	17.02%	16.43%
SFM	1,837	1,837	3,017	1,180	64%	0.42%	0.66%
CAJ	31,316	31,316	33,055	1,739	6%	7.22%	7.86%
TQC	1,312	1,312	1,443	131	10%	0.30%	0.34%
RVFD	87	87	87	-	0%	0.02%	0.02%
FTM	8,922	8,922	3,979	(4,943)	-55%	2.06%	1.16%
Total	433,828	433,828	433,828	-	0%	100%	100%

VHF Special Assessment

VHF Capital

COM	457,923	448,452	438,999	(9,453)	-2%	66.85%	66.85%
TOG	128,849	126,184	123,524	(2,659)	-2%	18.81%	18.81%
SFM	55,554	54,405	53,258	(1,146)	-2%	8.11%	8.11%
TQC	39,251	38,439	37,629	(810)	-2%	5.73%	5.73%
RVFD	3,425	3,354	3,283	(71)	-2%	0.50%	0.50%
Total	685,000	670,833	656,694	(14,139)	-2%	100.0%	100.0%

Total Topaz

COM	1,954,170	1,772,885	1,665,082	(107,803)	-6%	72.37%	70.35%
TOG	477,842	435,102	395,930	(39,171)	-9%	16.88%	17.53%
SFM	64,237	62,091	64,470	2,379	4%	0.42%	0.61%
CAJ	148,033	131,034	131,700	666	1%	7.16%	8.74%
TQC	45,453	43,929	43,089	(840)	-2%	0.30%	0.30%
RVFD	3,838	3,720	3,617	(102)	-3%	0.02%	0.02%
SWA	10,596	9,053	8,297	(756)	-8%	0.65%	0.72%
AMR	2,608	2,228	1,684	(544)	-24%	0.16%	0.15%
FTM	42,177	37,333	18,379	(18,954)	-51%	2.04%	1.58%
Total	2,748,953	2,497,375	2,332,249	(165,126)	-7%	100%	100%



FY2016/17
 Finance Update
 Year to Date Actuals
 Through April 30, 2017

FY2016/17 Finance Update

As of April 30, 2017

	Fiscal Year Budget	YTD Budget*	YTD Actuals	\$ Var From YTD Budget Incr/(Decr)	% Var
Personnel Services	492,000	397,385	295,683	(101,702)	-26%
Services	295,900	247,163	230,725	(16,438)	-7%
Commodities	764,600	748,167	722,287	(25,880)	-3%
Subtotal O&M	1,552,500	1,392,714	1,248,695	(144,019)	-10%
Contingency - 5% of total O&M	77,625	-	-	-	0%
Total	\$1,630,125	\$1,392,714	\$1,248,695	(\$144,019)	-10%

*YTD Budget represents 10 months of operational costs plus any contractual expenses already incurred (i.e. one time payments such as Insurance Premiums, Land Rental and Motorola Contract).

FY2016/17 Finance Update

As of April 30, 2017							
Fiscal Year Budget	YTD Budget	YTD Billed	Variance		Estimated 6 month Avg		
			Increase (Decrease)	% Var	Airtime	Airtime	
Operations							
COM	1,179,721	1,007,907	903,051	(104,856)	-10%	72.37%	70.35%
TOG	275,165	235,090	203,191	(31,899)	-14%	16.88%	17.53%
SFM	6,847	5,849	8,195	2,346	40%	0.42%	0.61%
CAJ	116,717	99,718	98,645	(1,073)	-1%	7.16%	8.74%
TQC	4,890	4,178	4,017	(161)	-4%	0.30%	0.30%
RVFD	326	279	247	(32)	-11%	0.02%	0.02%
SWA	10,596	9,053	8,297	(756)	-8%	0.65%	0.72%
AMR	2,608	2,228	1,684	(544)	-24%	0.16%	0.15%
FTM	33,255	28,411	14,400	(14,011)	-49%	2.04%	1.58%
Total	1,630,125	1,392,714	1,241,727	(150,987)	-11%	100%	100%

FY2016/17 Finance Update

As of April 30, 2017							
Fiscal Year Budget	YTD Budget	YTD Billed	Variance		Estimated 6 month Avg		
			Increase (Decrease)	% Var	Airtime	Airtime	
Capital Projects							
COM	316,526	316,526	323,032	6,506	2%	72.96%	73.53%
TOG	73,828	73,828	69,215	(4,613)	-6%	17.02%	16.43%
SFM	1,837	1,837	3,017	1,180	64%	0.42%	0.66%
CAJ	31,316	31,316	33,055	1,739	6%	7.22%	7.86%
TQC	1,312	1,312	1,443	131	10%	0.30%	0.34%
RVFD	87	87	87	-	0%	0.02%	0.02%
FTM	8,922	8,922	3,979	(4,943)	-55%	2.06%	1.16%
Total	433,828	433,828	433,828	-	0%	100%	100%

FY2016/17 Finance Update

As of April 30, 2017							
VHF Special Assessment							
VHF Capital							
COM	457,923	448,452	438,999	(9,453)	-2%	66.9%	66.85%
TOG	128,849	126,184	123,524	(2,659)	-2%	18.8%	18.81%
SFM	55,554	54,405	53,258	(1,146)	-2%	8.1%	8.11%
TQC	39,251	38,439	37,629	(810)	-2%	5.7%	5.73%
RVFD	3,425	3,354	3,283	(71)	-2%	0.5%	0.50%
Total	685,000	670,833	656,694	(14,139)	-2%	100.0%	100.0%

FY2016/17 Finance Update

As of April 30, 2017							
	Fiscal Year Budget	YTD Budget	YTD Billed	Variance Increase (Decrease)	% Var	Estimated Airtime	6 month Avg Airtime
Total Topaz							
COM	1,954,170	1,772,885	1,665,082	(107,803)	-6%	72.37%	70.35%
TOG	477,842	435,102	395,930	(39,171)	-9%	16.88%	17.53%
SFM	64,237	62,091	64,470	2,379	4%	0.42%	0.61%
CAJ	148,033	131,034	131,700	666	1%	7.16%	8.74%
TQC	45,453	43,929	43,089	(840)	-2%	0.30%	0.30%
RVFD	3,838	3,720	3,617	(102)	-3%	0.02%	0.02%
SWA	10,596	9,053	8,297	(756)	-8%	0.65%	0.72%
AMR	2,608	2,228	1,684	(544)	-24%	0.16%	0.15%
FTM	42,177	37,333	18,379	(18,954)	-51%	2.04%	1.58%
Total	2,748,953	2,497,375	2,332,249	(165,126)	-7%	100%	100%

FY2016/17 Finance Update
Prior Year and Next Year budget Comparison:

Description	FY15/16 Actual	FY16/17 Budget	YTD Actuals	FY17/18 Budget
Personnel Services	\$ 508,301	\$ 492,000	\$ 295,683	\$ 486,600
Services	246,213	295,900	230,725	291,210
Commodities	735,478	764,600	722,287	1,017,200
Subtotal O&M	1,489,992	1,552,500	1,248,695	1,795,010
Special Assessment: VHF Ops	24,292			29,700
Contingency - 5% of total O&M		77,625	-	89,751
Total O&M	\$ 1,514,284	\$ 1,630,125	\$ 1,248,695	\$ 1,914,461
Projects	3,069,508	433,828	433,828	1,236,346
VHF Project	686,151	685,000	656,694	-
Total Topaz:	\$ 5,269,943	\$ 2,748,953	\$ 2,339,217	\$ 3,150,807

FY2016/17 Finance Update
Prior Year and Next Year budget Comparison:

	FY15/16 Actual	FY16/17 Budget	YTD Actuals	FY17/18 Budget
Mesa	3,868,228	1,954,170	1,665,082	2,244,111
Gilbert	911,086	477,842	395,930	536,674
Superstition Fire	79,783	64,237	64,470	59,222
Apache Junction	335,208	148,033	131,700	214,669
Queen Creek	56,601	45,453	43,089	38,814
Rio Verde	4,861	3,838	3,617	3,155
Southwest	12,034	10,596	8,297	12,251
American Medical	504	2,608	1,684	2,450
Ft McDowell	1,637	42,177	18,379	39,461
	5,269,942	2,748,953	2,332,249	3,150,807



Date: May 25, 2017
To: TOPAZ Regional Wireless Cooperative (TRWC) Board of Directors
Through: Dale Shaw, TRWC Executive Director
From: Randy Thompson
Subject: Administrator Update

Capital Projects

- 1) **Fire Hazard Zone Communication Infrastructure.** This infrastructure will enable the Mesa Fire & Medical Regional Dispatch Alarm Room to communicate with the mobile and portable radios in Fire Hazard or Hot Zones, which will be operating on Very High Frequency (VHF, 150-174 MHz) radio frequencies in analog simplex mode. The funding for this project is included in the TRWC budget. The project milestones with status and dates are shown in the Appendix.
- 2) **Point-to-Point Microwave Radio Wireless Backhaul Lifecycle upgrade.** This lifecycle upgrade will replace the point-to-point microwave radios that connect the radio towers in the TOPAZ network together to transport data to and from the network core. The current equipment is no longer supported by the manufacturer, and uses older technology that does not support current transport protocols. This project is budgeted in the TRWC FY2017-2018 capital budget. The equipment will be arriving in July, 2017, with planned completion of the project by December, 2017.

Non-capital Projects

- 1) **Florence Gardens TOPAZ site.** Utilizing some of the equipment removed from Thompson Peak when that site was upgraded to create a 4-channel TOPAZ 800 MHz trunked site at the Florence Gardens site near Florence, AZ. This will enable the City of Mesa Gas Utility to communicate with resources in Mesa when they are providing service in the Magma Gas Service Area without manually switching their radios. This site will benefit TOPAZ members when traveling to the Pinal County Jail. This site went into service in mid-October.

The weakness in the point-to-point microwave radio network reported in the December 15, 2016, Administrator Update has been mitigated by reconfiguring the network connections to Florence Gardens. The site is now reliable, and not experiencing the brief outages reported previously.

- 2) **7.16 Upgrade.** The TOPAZ infrastructure software will be upgraded June 5-15, 2017. This upgrade is covered under the Motorola System Upgrade Assurance II contract, so there is no additional cost to the TRWC. Brief periods of "site trunking" will be encountered during the upgrade, and notices will be sent out by the upgrade project manager prior to the actual events.

Operations Summary

TRWC Administrator Update, May 25, 2017

Unscheduled Impairments – Please see the unscheduled impairments chart on page 3. Since the last Administrator update on December 15, 2016, there were unscheduled impairments to the network, as follows:

- 1) On January 11, 2017, the Twin Knolls, FS262, and FS264 sites were out of service for just over 2-1/2 hours due to network problems.
- 2) On January 18, 2017, the Twin Knolls and FS262 sites were out of service for 5-1/2 minutes due to network problems.
- 3) On January 20, 2017, the Twin Knolls and FS262 sites were out of service for just over 5 minutes due to network problems.
- 4) Although it does not appear in the impairment chart as a reduction in availability due to no system alarms to bound the timeframe, on March 11, 2017, between 3-9 PM, Gilbert and Mesa Police Departments reported intermittent and geographically scattered (although generally in northern Gilbert and south central Mesa) radio coverage problems. As stated above, there were no alarms from the TOPAZ 800 MHz radio network, nor were there alarms from the transport network that connects the radio sites to the network core. Extensive investigation both the evening of March 11th and in subsequent days failed to find any hardware or software failures. The problem was remedied on March 11th by changing the physical radio channel used for the system control channel function. We have begun a monthly rotation of the physical radio channel used for the control channel function in an effort to avoid a repeat of this and the following event.
- 5) Similar to the event above, although it does not appear in the impairment chart as a reduction in availability due to no system alarms to bound the timeframe, on March 17-18, 2017, between 11:15 PM and 1:15 AM, the Mesa Police Department reported intermittent and geographically scattered (although generally in the western and central parts of Mesa) radio coverage problems. As stated above, there were no alarms from the TOPAZ 800 MHz radio network, nor were there alarms from the transport network that connects the radio sites to the network core. Extensive investigation both the evening of March 17-18 and in subsequent days failed to find any hardware or software failures. The problem was remedied on March 18th by changing the physical radio channel used for the system control channel function. We have begun a monthly rotation of the physical radio channel used for the control channel function in an effort to avoid a repeat of this and the following event.
- 6) You will note that 3 of the 5 incidents reported above were attributed to network problems. We have been working diligently with the network team to identify the causes and implement solutions to reduce the impairments attributable to network problems. Early indications are this effort is producing positive results, but we continue to monitor and implement improvements after they are identified and tested.

Airtime and Radio Counts – the following charts are included:

- 1) Six month rolling average airtime usage by member for fiscal year 2017 through April, 2017.
- 2) Average number of radios enabled by member for fiscal year 2017 through April, 2017.
- 3) Six month rolling average airtime usage by service type for fiscal year 2017 through April, 2017.
- 4) Average number of radios enabled by service type for fiscal year 2017 through April, 2017.

TRWC Administrator Update, May 25, 2017

Peak Channel Usage – the following charts are included:

- 1) Peak channel usage for each site for December, 2016, through April, 2017, is shown on the graphs at the end of this report. The following table is a summary of the number of days with all channels in use event:

Month	Simulcast Cell	Florence Gardens	Shaw Butte ^b	Thompson Peak
December, 2016	0	7	17	0
January, 2017	1	2	7	0
February, 2017	0	1	0	0
March, 2017	2	3	0	0
April, 2017	1	1	0	0

- a. Although all channels were in use on several occasions as shown above, no system busies have been reported by users.
- b. The sixth channel was brought on line at Shaw Butte on January 30, 2017. There have been no instances of all channels in use since this additional channel was added.

Upcoming Events:

- 1) Testing of TOPAZ 800 MHz radio network backup capability is planned for July, 2017.
- 2) The next City of Mesa Communications Building (quarterly) simulated power outage testing is planned for 5:00 AM on July 12, 2017.

Other News:

- 1) **Potential Point-to-Point Microwave Radio Interference.** Higher Ground LLC, a mobile satellite earth station startup business, applied to the Federal Communications Commission (FCC) for a nationwide license to operate mobile satellite earth station transmitters in the 6 GHz radio frequency band. Higher Ground's license application was granted on January 18, 2017. The 6 GHz radio frequency band is the same radio frequency band utilized by the TRWC and other Public Safety communications networks for point-to-point microwave radio service, which connects the TOPAZ radio sites to each other and together as a network. The Higher Ground system utilizes an attachment to a cellular telephone that would enable consumer-based text messaging, e-mail, and "Internet of Things" communications via geostationary satellites.

Higher Ground's application to the FCC requested (and Higher Ground was granted) waiver of two very important rules, as follows:

- a) Authorization of mobile operations in a Fixed Service radio frequency band; and
- b) Bypassing the required frequency coordination process

The concern is that bypassing these rules could result in interference to point-to-point microwave radio links which carry mission critical Public Safety communications.

The following organizations have now filed comments with the FCC regarding Higher Ground's license grant:

- 1) PacifiCorp (an electric utility)
- 2) National Rural Electric Cooperative Association
- 3) CenturyLink, Inc.
- 4) Fixed Wireless Communications Coalition, Inc.

TRWC Administrator Update, May 25, 2017

- 5) Association of Public-Safety Communications Officials-International, Inc. (APCO)
 - 6) National Public Safety Telecommunications Council
 - 7) Enterprise Wireless Alliance
 - 8) Fixed Wireless Communications Coalition
 - 9) Higher Ground LLC
- 2) The amendment to the Motorola Solutions Upgrade Assurance II Agreement was approved by the Mesa City Council on May 8, 2017. These additional Motorola services were presented to the TRWC Board of Directors at their December 15, 2016, meeting as part of the FY2017-2018 budget presentation. This change in services was budgeted in the FY2017-2018 TRWC operations & maintenance budget.

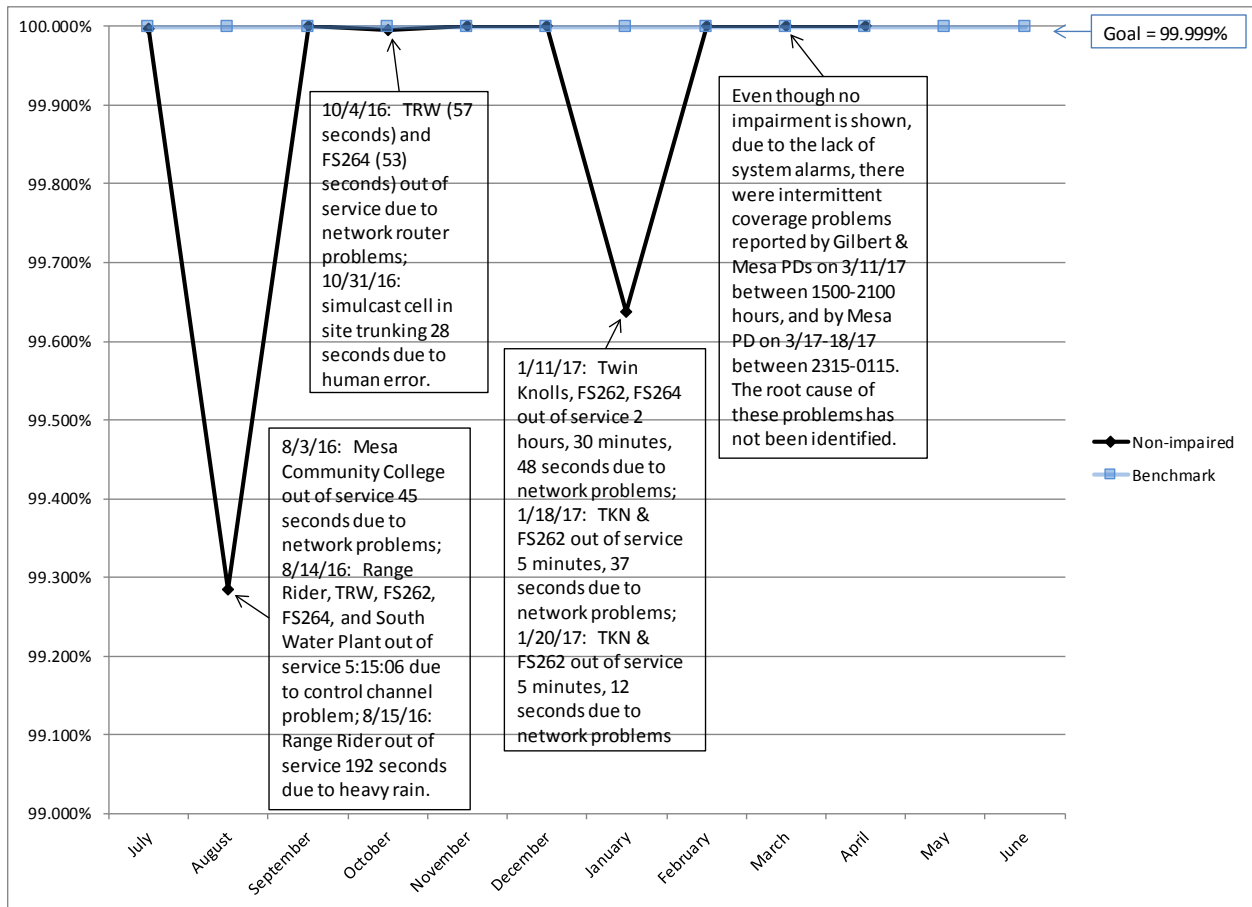
TRWC Administrator Update, May 25, 2017

Appendix

Fire Hazard Zone Communications Infrastructure Schedule

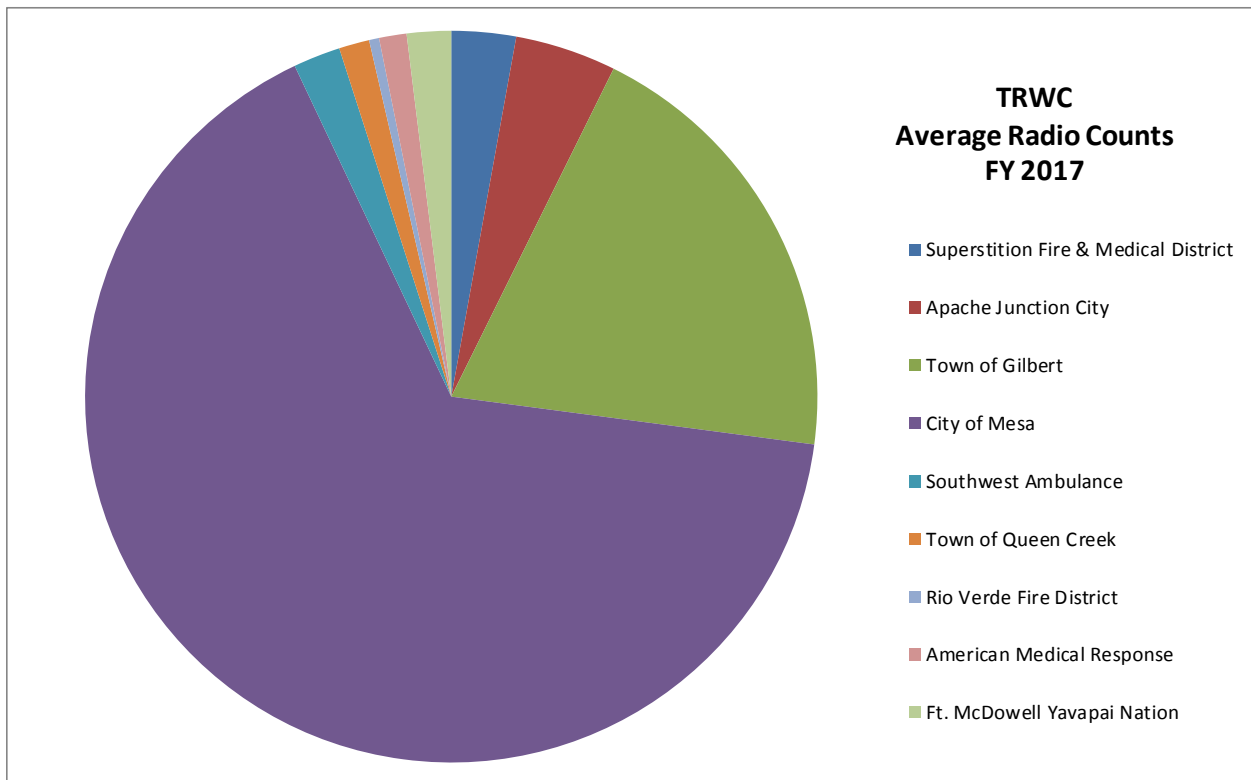
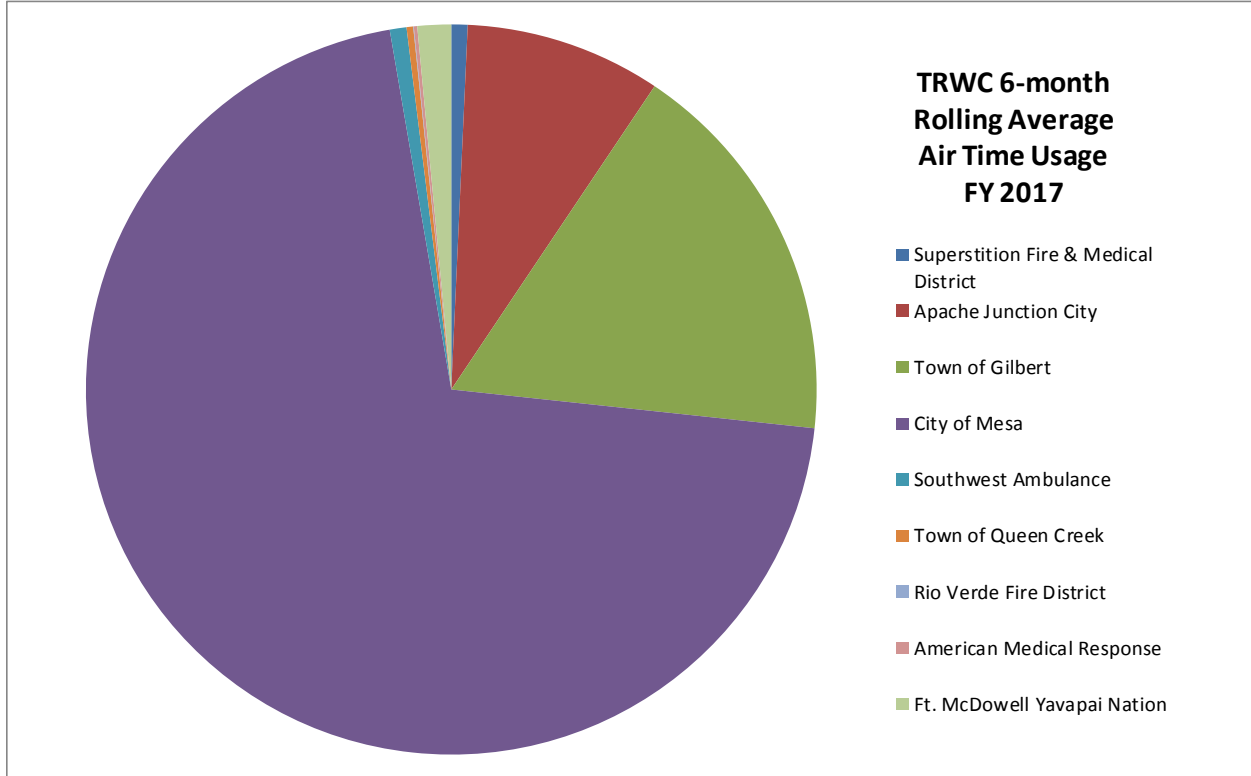
Milestone	Status	Date
Contract awarded to Motorola Solutions	Complete	September 28, 2015
First payment of \$600,000	Complete	November 12, 2015
Second payment of \$600,000	Complete	September 8, 2016
Frequency acquisition	Complete	October 19, 2016
Equipment ordering	Complete	October, 2016
Equipment staging at Motorola Solutions in Illinois	Complete	December 6-7, 2016
Site preparation	Complete	January-February, 2017
Shipment of equipment from Motorola Solutions in Illinois	Complete	Week of December 12, 2016
Installation of equipment at sites	Complete	January-February, 2017
Optimization & testing of equipment	Complete	March-April, 2017
System Coverage Acceptance Testing	Upcoming – Planned to begin on May 15th	May, 2017
System Acceptance	Upcoming - Planned	June, 2017

TRWC Administrator Update, May 25, 2017

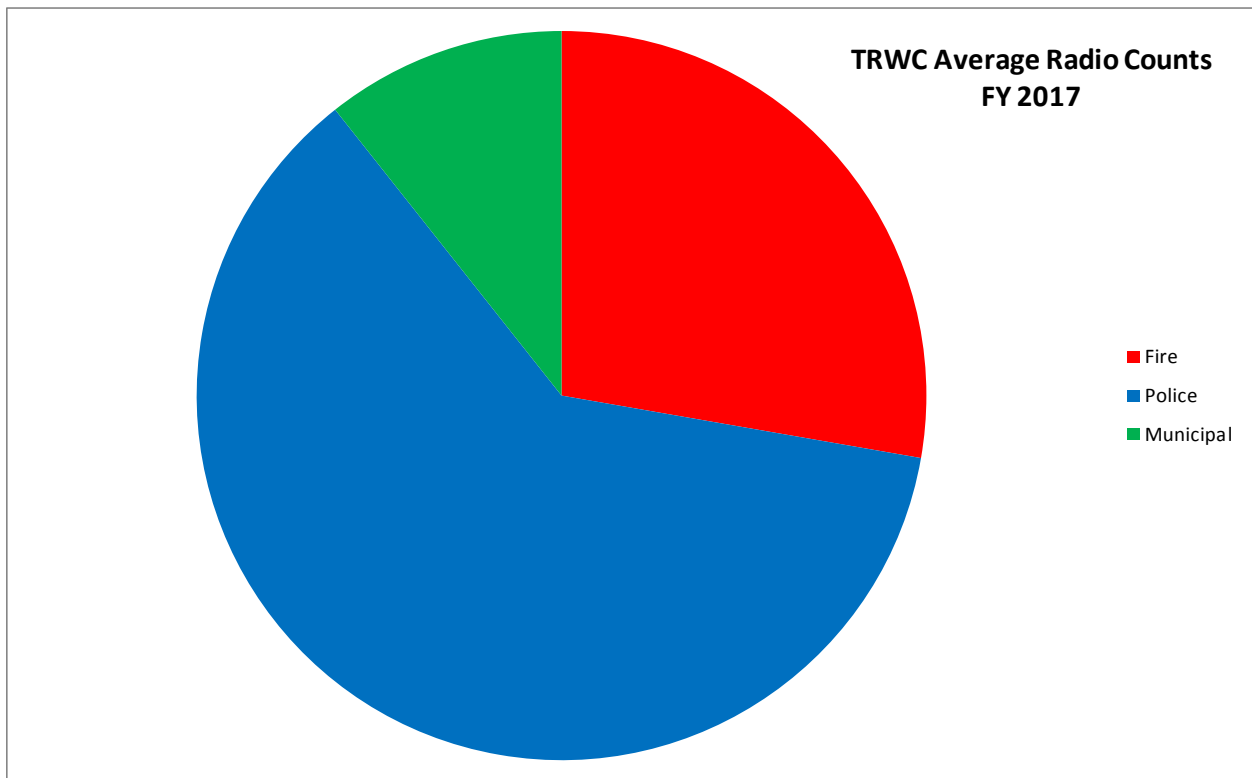
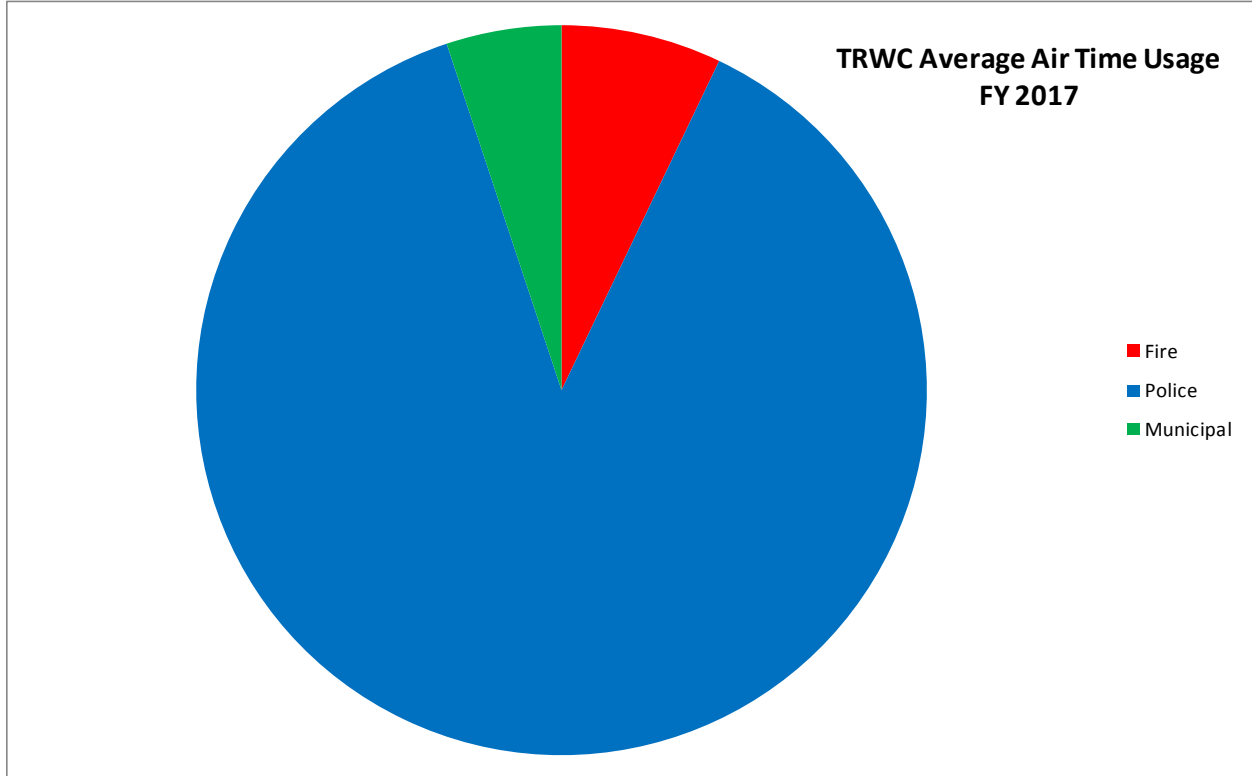


Unscheduled System Impairment, July, 2016 through April, 2017

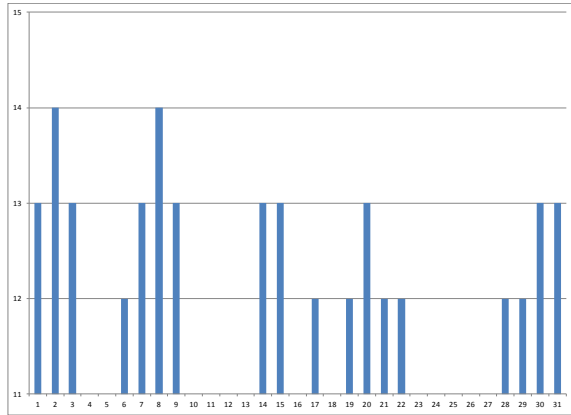
TRWC Administrator Update, May 25, 2017



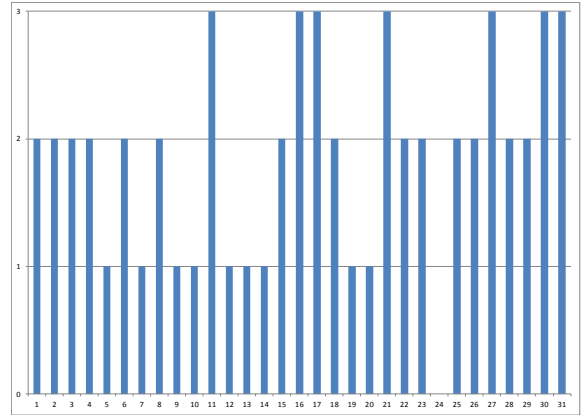
TRWC Administrator Update, May 25, 2017



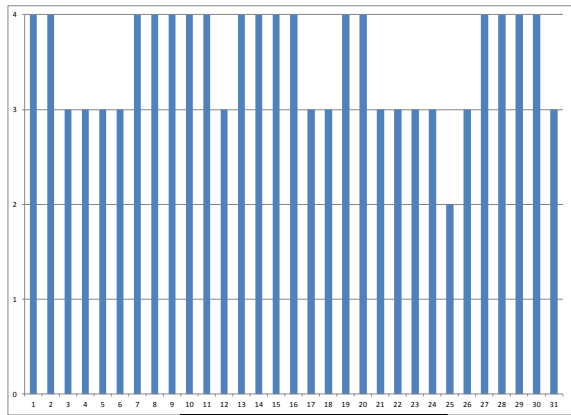
TOPAZ Peak Channel Usage, December, 2016



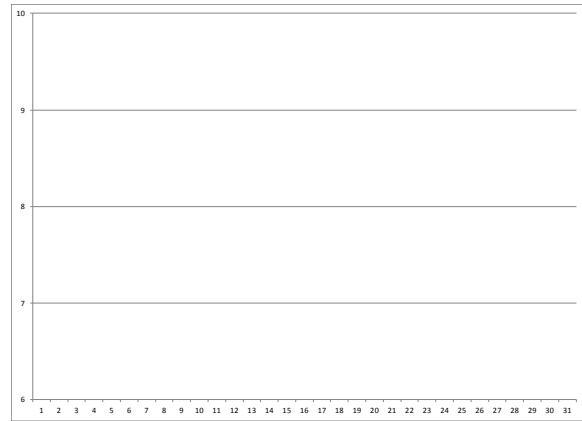
Simulcast Cell



Florence Gardens

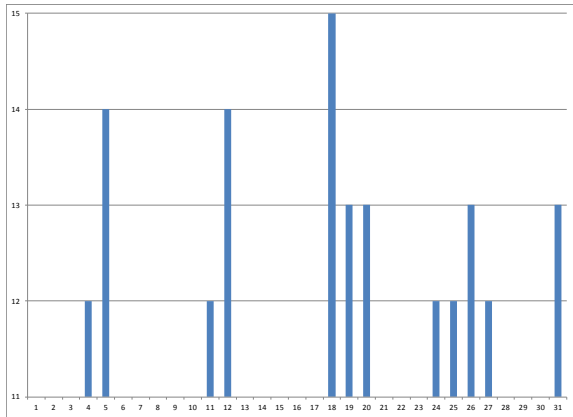


Shaw Butte

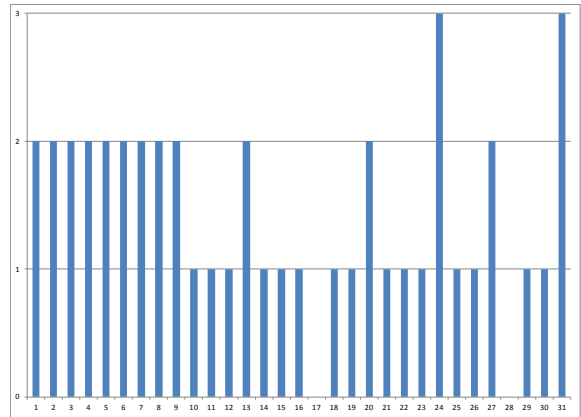


Thompson Peak

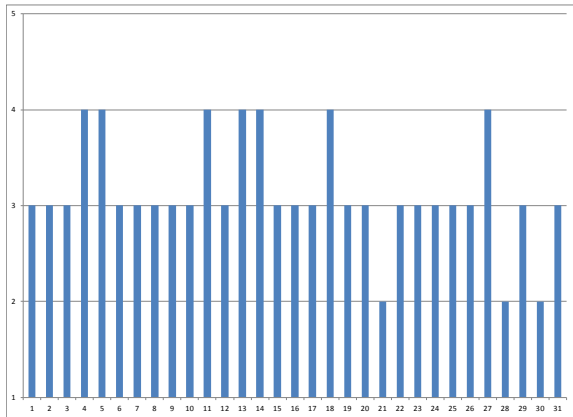
TOPAZ Peak Channel Usage, January, 2017



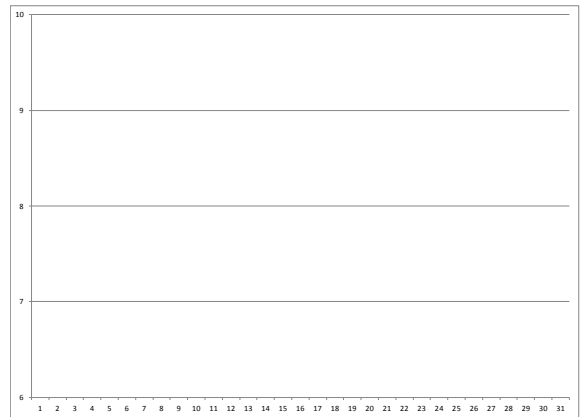
Simulcast Cell



Florence Gardens

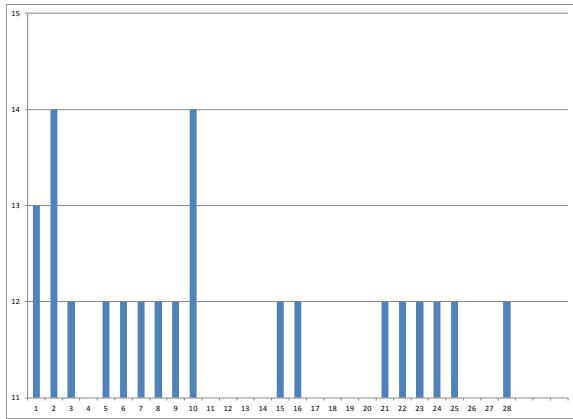


Shaw Butte

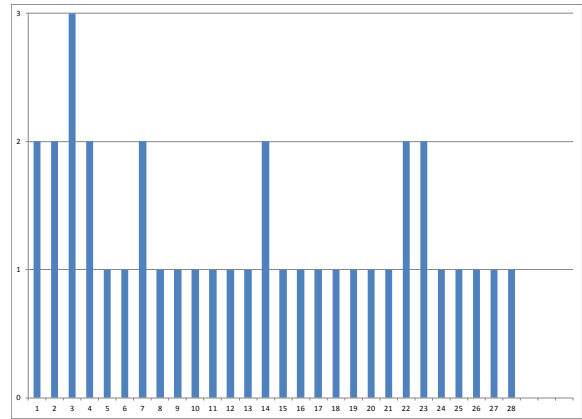


Thompson Peak

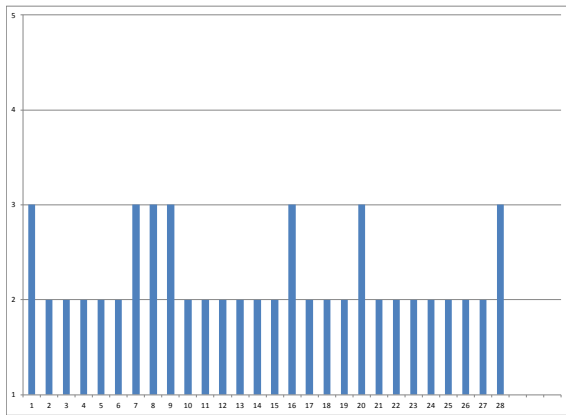
TOPAZ Peak Channel Usage, February, 2017



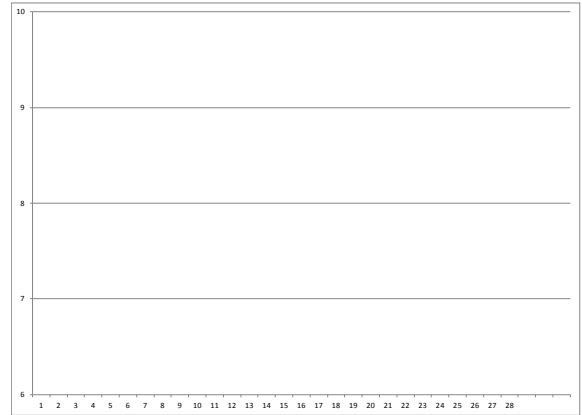
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Florence Gardens

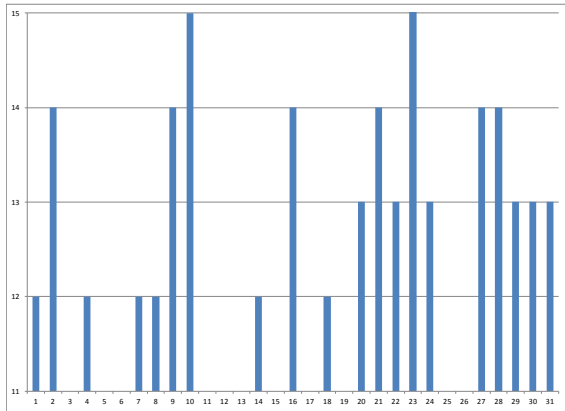


Shaw Butte

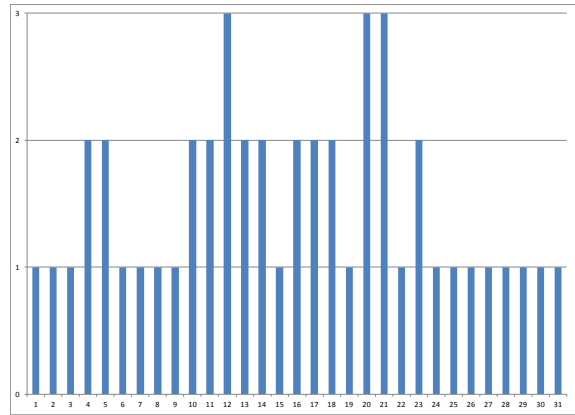


Thompson Peak

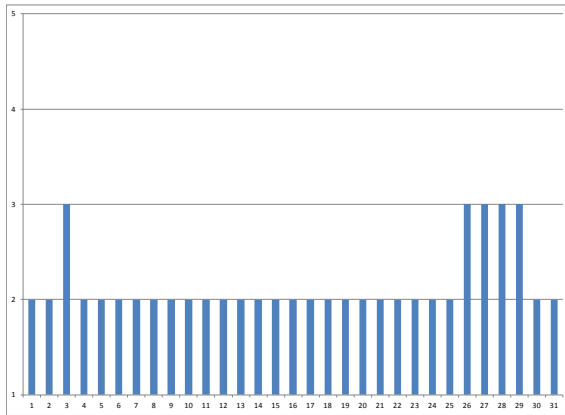
TOPAZ Peak Channel Usage, March, 2017



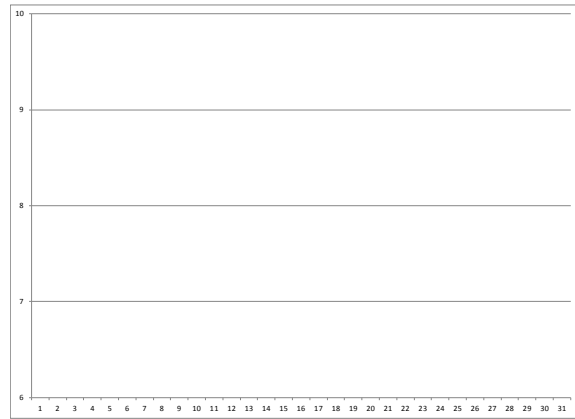
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Florence Gardens

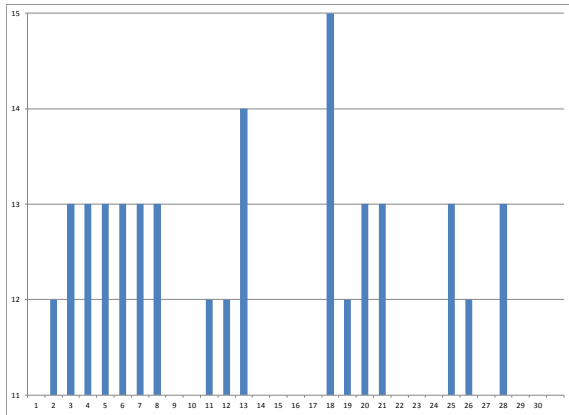


Shaw Butte

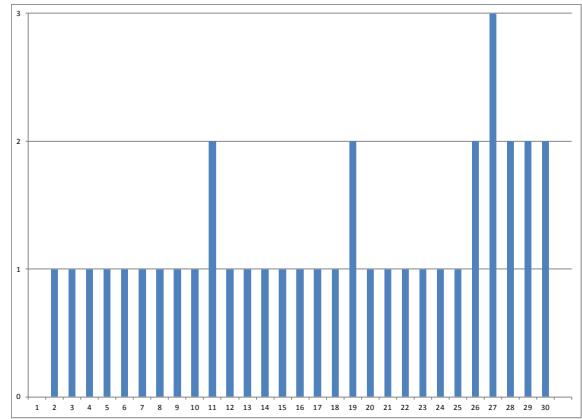


Thompson Peak

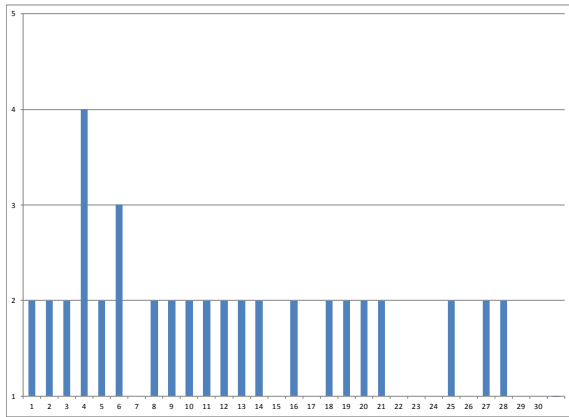
TOPAZ Peak Channel Usage, April, 2017



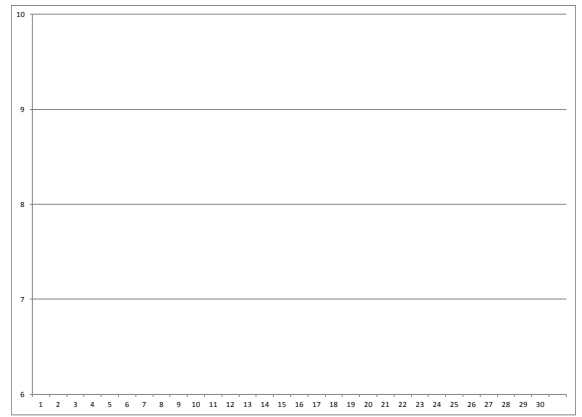
Simulcast Cell



Florence Gardens



Shaw Butte



Thompson Peak